GALGOTIAS UNIVERSITY

(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

EFFICIENT UTILITY MINING OF NUTRITION CALCULATION

A Report for the Evaluation 3 of Project 2

Submitted by

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(1613101027/16SCSE101213)

In partial fulfillment for the award of the degree

Bachelor of Technology

IN

Computer Science and Engineering

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING

Under the Supervision of

Dr. S RAJU, Dean IQAC

APRIL / MAY-2020

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BONAFIDE CERTIFICATE

Certified that this project report **"EFFICIENT UTILITY MINING FOR NUTRITION CALCULATION"** is the bonafide work of **"ABHISHEK BHAGAT (1613101027)"** who carried out the project work under my supervision.

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Abstract

The thesis entitled as “Efficient Utility Mining for Nutrition Calculation” is developed using ASP.NET as front end, C# as coding language and SQL Server as back end. JavaScript used for validation purpose.

The main objective of this project is to mine the frequent item set and maximum threshold signature of the Health life food suggestion. The frequent item set deals with the whole database of the meal wise food and predict the health condition. It contains various transactions like user data, BMI data, food data and calorie details etc. Here enhanced EHAUPM (Enhanced Efficient High Average-Utility Pattern Mining) – Item set has been implemented which gives more accuracy and performance than TKU (mining Top-K Utility item sets) and TKO (mining Top-K utility item sets in One phase), which are implemented in the exiting methods for mining such item sets without the consideration of entire database. This may cause inaccurate result and improper output. These methods may use of assumption purpose only.

EHAUPM -Item set Algorithm is used to analyze the food items which are consumed by the customers, from the consumed details the calorie details of the user will be calculated. The decisions can be made on the result of analysis, so that the item set can be identified. Normally an input given by the client to the food item in project is taken as it is and service is provided without analyzing the input. This leads to wastage of time in decision making and also the delay in finding the frequently mining. If the frequently mining in project are analyzed, then it is easy to find out the relationship or association among the items. So, that the reason for food and how frequent item on each other can be found in a project.

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Data Mining Concepts

It is a new terminology used in IT field to find some interesting information from a large database. It is a high-level application technique used to present and analyze data for decision-makers.

It is defined in many ways. Some of the definitions are

- It refers to the finding of relevant and useful information from databases.
- It deals with finding of patterns and hidden information from a large database.
- It is also known as Knowledge Discovery in Databases (KDD) which is defined as the nontrivial extraction of implicit, previously unknown and potentially useful information from the data.

1.2 Data mining vs. Query Tools

Normally, query tools are used to retrieve data from the databases. When query tools are used, the user knows exactly what data he is looking for.(i.e) The user knows what data he is going to retrieve from the database and the data already exists in the database. The user should go for a query tools like SQL (Structured Query Language), if he knows exactly what he wants.

When data mining tools are used to retrieve data form the databases, the user Knows vaguely what data he is looking for.(i.e) The user does not know what data he is going to retrieve from the database and the data is new or hidden information. The user should go for a data mining tool like IBM's Intelligent Miner, if he knows vaguely, what exactly he wants.

1.3 Operational Database

An operational database is a database containing day-to-day transactions data. Allthe information is stored in this database and transactions are performed on this database. Any On Line Transactions Processing System (OLTP) uses this kind of database for its operation.

Once the data is identified for mining, it is been selected from this database and copied to a data warehouse. An operational database plays a vital role in the data mining methodology; it is because the first process itself is data selection which is performed on an operational database.

Data Mining Applications

Data mining was initially successful in marketing. Now, it is used in many areas like wed mining, banking, medical, scientific research etc. It is widely used in Internet to personalize the website in order to provide the necessary information required by the users in a faster way.

1.4 Objectives

Primary Objectives

- The main objective of this project is to mine the frequent item set and maximum threshold signature of the Health suggestion.
- The suggestion will be generated through the food consumed and calorie information.
- Here EHAUPM - Enhanced Efficient High Average-Utility Pattern Mining for efficient data retrieval.
- A new concept called data engineering is used in the system to find associations with the calories used and generate some health tips.
- Rule Mining Concepts like Association rules has been implemented to make the result much better
- All the result will be shown in chart and graph

1.5 MODULES:

- Pre processing
- Calculating BMI and work out calculation
- Implementing K mine
- Mining utility item set
- Statistical representation

1.6 MODULES DESCRIPTION:

1.6.1 Data Set Pre Processing.

Pre process is the initial process, where data format will be processed for understandable data, which can be stored in the data base for further use. Now a day, people are going for this new technique to retrieve data from their databases. It is because the volume of their databases has become larger and larger very day. Normally, query tools are used to retrieve data from the database. But, if the database is larger, then it is difficult to retrieve data in an effective way using query tools. Sometimes data loss or data mismatch or data transaction failure may occur. Using data mining techniques, the relevant information can be extracted in an effective manner. It is applied only on specific records or historical data in the database and retrieves some interesting or hidden information from the database. So that pre processing make the data set more efficient to access and execute. The pre processed data will be current data set. This process contains manual input process.

1.6.2 Calculating BMI and work out calculation

This module contains two process BMI and Workout process calculation. Both process will works individual as a user interface model. Initially workout time, sleeping time, rest time and sitting will be fetched from the user. Using Fmod function the average work out time of the user will be calculated. The same case will be applied for BMI calculation. For BMI calculation Height and weight of the user will be taken as input and calculate the corresponding body mass index of the user.

1.6.3 Implementing K mine process

This module is the implementation of the core content. According to the K mining process "bottom up" approach has been used. Here all the data training will be done internally. Here various considerations will be done like calorie range, protein range, vitamin range and etc. These ranges will process with the user input data to create a suggestion on their health and insufficient details.

1.6.4 Mining Utility Item Set

Mining high utility item sets from a transactional database refers to the discovery of item sets with high utility of various statistical information. A number of relevant approaches have been used in this module for more consideration in the analysis part. This module deals with both trained data and input data process. These consideration will be done for individual users. This modules works well on bulk information. This module calculates the daily input of the user, while getting the input the user's meal detail will be taken as the input like breakfast lunch and dinner. The average result of daily conception will be calculated and result will be generated in three various types like Insufficient, Normal and excess. For insufficient columns the relevant disease details will be displayed.

1.6.5 Statistical Representation

Statistics is a special subject that deals with large (usually) numerical data. The statistical data can be represented graphically. In fact, the graphical representation of statistical data is an essential step during statistical analysis. This is the representation of data by using graphical symbols such as lines, bars, pie slices, dots etc. A graph does represent a numerical data in the form of a qualitative structure and provides important information. A bar graph is a very frequently used graph in statistics as well as in media. A bar graph is a type of graph which contains rectangles or rectangular bars. The lengths of these bars should be proportional to the numerical values represented by them. In bar graph, the bars may be plotted either horizontally or vertically. But a vertical bar graph (also known as column bar graph) is used more than a horizontal one. The rectangular bars are separated by some distance in order to distinguish them from one another. The bar graph shows comparison among the given categories. Mostly, horizontal axis of the graph represents specific categories and vertical axis shows the discrete numerical values.

1.7 HARDWARE SPECIFICATION

PROCESSOR	:	Intel Pentium Dual Core 1.8 GHz
MOTHERBOARD	:	Intel 915GVSR chipset board
RAM	:	4 GB DDR3 RAM

HARD DISK DRIVE	:	750 GB
DVD/CD DRIVE	:	Sony 52 x Dual layer drive
MONITOR	:	17” Color TFT Monitor
KEYBOARD	:	Multimedia Keyboard 108 Keys
MOUSE	:	Logitech Optical Mouse
CABINET	:	ATX iball.

1.8 SOFTWARE CONFIGURATION

FRONTEND	:	ASP.NET 2012
CODING LANDUAGE	:	C#
BACK END	:	SQL SERVER 2010
CLIENT SERVER TOOL	:	AJAX 2.0
OPERATING SYSTEMS	:	Microsoft Windows 7
DOCUMENTATION	:	Microsoft word 2007.
SCRIPTING LANGUAGE	:	Java Script

2. LITERATURE REVIEW

1. The CN2 induction algorithm”, Machine Learning

Clark, P. and Niblett, T., “The CN2 induction algorithm”, Machine Learning, Vol. 3(4), pp. 261–283, 1999.

The subgroup discovery, domain of application of CN2-SD, is defined as: ‘‘given a population of individuals and a property of those individuals, we are interested in finding a population of subgroups as large as possible and have the most unusual statistical characteristic with respect to the property of interest’’. The subgroup discovery algorithm CN2-SD, based on a separate and conquer strategy, has to face the scaling problem which appears in the evaluation of large size data sets. To avoid this problem, in this paper we propose the use of instance selection algorithms for scaling down the data sets before the subgroup discovery task. The results show that CN2-SD can be executed on large data set sizes pre-processed, maintaining and improving the quality of the subgroups discovered.

In data mining (Han &Kamber, 2000), the generation of representative models from data is a staple process. The models, depending on their domain of application, can be predictive or descriptive. Predictive induction has as objective the construction of a model or a set of rules to be used in classification or prediction (Chang, Lai, & Lee, 2007), while descriptive models are aimed at the discovery of individual rules which define interesting patterns in data (Yen & Lee, 2006). Subgroup discovery (SD) is situated at the intersection of predictive and descriptive induction. In the subgroup discovery task, the rules or subgroups are discovered using heuristics which tries to find the best subgroups in terms of rule coverage and distributional unusualness Sub-group discovery aims at discovering individual rules of interest, which must be represented in explicit symbolic form and which must be relatively simple in order to be recognized as actionable by potential users. The CN2-SD (Lavracˇet al., 2004) is a recent proposal in SD offering promising results.

It is an adaptation of the classification rule learner CN2 algorithm based on a sepa-rate and conquers strategy (Clark & Boswell, 1989; Clark & Niblett, 1991). The main modifications are: its covering algorithm, search heuristic, probabilistic classification of instances, and evaluation measures. The issue of scalability and the effect of increasing the size of data sets are always present in data mining (Domin-go, Gavalda´, & Watanabe, 2002; Provost &Kolluri, 1999). The scaling problem, due to large size data sets, produces situations where the CN2-SD algorithm cannot be executed. The evaluation necessities to apply the heuristic are expensive computationally and this cost is directly proportional to the size of the data set.

2. Mining Association Rules between Sets of Items in Large Databases.

R. Agrawal, T. Imielinski, and A. Swami. Mining association rules between sets of items in large database.In Proc. 1993 ACM-SIGMOD Int. Conf. Management of Data (SIGMOD’93), pp:207-216, Washington, DC, May 1993.

We are given a large database of customer transactions. Each transaction consists of items purchased by a customer in a visit. We present an efficient algorithm that generates all significant association rules between items in the database. The algorithm incorporates buffer management and novel estimation and pruning techniques. We also present results of applying this algorithm to sales data obtained from a large retailing company, which shows the effectiveness of the algorithm.

Consider a supermarket with a large collection of items. Typical business decisions that the management of the supermarket has to make include what to put on sale, how to design coupons, how to place merchandise on shelves in order to maximize the profit, etc. Analysis of past transaction data is a commonly used approach in order to improve the quality of such decisions. Until recently, however, only global data about the cumulative sales during some time period (a day, week, a month, etc.) was available on the computer. Progress in bar-code technology has made it possible to store the so called basket data that stores items purchased on a per-transaction basis. Basket data type transactions do not necessarily consist of items bought together at the same point of time. It may consist of items bought by a customer over a period of time. Examples include monthly purchases by members of a book club or a music club.

The work reported in this paper could be viewed as a step towards enhancing databases with functionalities to process queries such as (we have omitted the confidence factor specification):

Find all rules that have \Diet Coke" as consequent. These rules may help plan what the store should do to boost the sale of Diet Coke. Find all rules that have \bagels" in the antecedent. These rules may help determine what products may be impacted if the store discontinues selling bagels.

Find all rules that have \sausage" in the antecedent and \mustard" in the consequent. This query can be phrased alternatively as a request for the additional items that have to be sold together with sausage in order to make it highly likely that mustard will also be sold.

Find all the rules relating items located on shelves A and B in the store. These rules may help shelf planning by determining if the sale of items on shelf A is related to the sale of items on shelf B.

3. Deliver smarter products and services by unifying software development and IT operations.

IBM, “Deliver smarter products and services by unifying software development and IT operations,” Issue Date : Sep. 2009, ISBN RAW14175-USEN-00.

At first consideration the answers to these questions are simple: Yes, the organizational separation of development and IT operations serves an economic purpose. Development and IT operations serve very distinct functions. Not only do they undertake different work streams with different tools, processes, and cultures, they are also two very distinct activities from an economic perspective. Software development focuses on creating new value and IT operations focuses on assuring the health of that value stream after it has been created. Given this distinction, specialization within development and operations makes sense. As with many undertakings, specialization underpins organizational effectiveness, creating value by allowing teams to focus on a subset of well defined objectives. Specialization, however, only works up to the point where work flows are contained within organizational boundaries. When focus is put on the on the larger goal of end-to-end service delivery where workflows must be coupled across teams, this specialization of tools, skills, and processes can expose the business to unwarranted risk.Such composite applications are truly powerful: they enable businesses to transform existing processes without having to rewrite large numbers of existing applications. That said, they tend to couple the development and IT operation processes. Because composite applications link many existing applications together in a complex way, many problems may not emerge until the application runs in a live production environment. This is not a problem with testing — good tools are available to ensure new applications work correctly— but rather it’s a question of how the new application impacts the existing environment. We increase costs because we overlap the processes in development and operations. Take the deployment of applications, for example. From an operations perspective, deployment into production is typically a well understood, controlled activity with some level of tooling, process management, and quality assurance in place. Applications are, however, often deployed—in fact, much more frequently deployed—into test environments. This process, for most testing organizations, is much less controlled, process-oriented, or automated than its operational counterpart.

4. Learning Decision Trees Using the Area under the ROC Curve

Cesar Ferri-Ram´ ırez, Peter A. Flach, and Jose Hernandez-Orallo. Learning decision trees using the area under the roc curve. In Proceedings of the Nineteenth International Conference on Machine Learning, pages 139–146, Morgan Kaufmann, 2002.

ROC analysis is increasingly being recognised as an important tool for evaluation and comparison of classifiers when the operating characteristics (i.e. class distribution and cost parameters) are not known at training time. Usually, each classifier is characterised by its estimated true and false positive rates and is represented by a single point in the ROC diagram. In this paper, we show how a single decision tree can represent a set of classifiers by choosing different labelling of its leaves, or equivalently, an ordering on the leaves. In this setting, rather than estimating the accuracy of a single tree, it makes more sense to use the area under the ROC curve (AUC) as a quality metric. We also propose a novel splitting criterion which chooses the split with the highest local AUC. To the best of our knowledge, this is the first probabilistic splitting criterion that is not based on weighted average impurity. We present experiments suggesting that the AUC splitting criterion leads to trees with equal or better AUC value, without sacrificing accuracy if a single labelling is chosen.Traditionally, classification accuracy (or error), i.e., the percentage of instances that are correctly classified (respectively incorrectly classified) has been used as a measure of the quality of classifiers. However, in many situations, not every misclassification has the same consequences, and problem-dependent misclassification costs have to be taken into account. If the cost parameters are not known at training time, Receiver Operating Characteristic (ROC) analysis can be applied (Provost & Fawcett 1997; Swets, Dawes & Monahan 2000). ROC analysis provides tools to distinguish classifiers that are optimal under some class and cost distributions from classifiers that are always sub-optimal, and to select the optimal classifier once the cost parameters are known. ROC analysis for two classes is based on plotting the true-positive rate (TPR) on the y-axis and the false-positive rate (FPR) on the x-axis. This gives a point for each classifier. A curve is obtained because, given two classifiers, we can obtain as many derived classifiers as we want along the segment that connects them, just by voting them with different weights. Consequently, any point "below" that segment will have greater cost for any class distribution and cost matrix, because it has lower TPR and/or higher FPR. According to that property, given several classifiers, one can discard the classifiers that fall under the convex hull formed by the points representing the classifiers and the points (0,0) and (1,1), which represent the default classifiers always predicting negative and positive, respectively.

5. Logical Design of Data Warehouses from XML

M. Banek, Z. Skocir, and B. Vrdoljak.Logical Design of Data Warehouses from XML . In ConTEL '05: Proceedings of the 8th international conference on Telecommunications, volume 1, pages 289–295, 2005.

Data warehouse is a database that collects and integrates data from heterogeneous sources in order to support a decision making process. Data exchanged over the Internet and intranets has recently become an important data source, having XML as a standard format for exchange. The possibility of integrating available XML data into data warehouses plays an important role in providing enterprise managers with up-to-date and relevant information about their business domain. We have developed a methodology for data warehouse design from the source XML Schemas and conforming XML documents. As XML data is semi-structured, data warehouse design from XML brings many particular challenges. In this paper the final steps of deriving a conceptual multidimensional scheme are described, followed by the logical design, where a set of tables is created according to the derived conceptual scheme. A prototype tool has been developed to test and verify the proposed methodology.

Data warehousing system is a set of technologies and tools that enable decision-makers (managers and analysts) to acquire, integrate and flexibly analyze information coming from different sources. The central part of the system is a large database specialized for complex analysis of historical data, called a data warehouse. The process of building a data warehousing system includes analysis of the data sources, design of a warehouse model that can successfully integrate them and later the construction of the warehouse according to the proposed model. Decision-makers use OLAP (OnLine Analytical Processing) tools to put queries against the warehouse in a quick, intuitive and interactive way. OLAP tools use the multidimensional data model, which enables focusing on small pieces of data, generally a few numerical parameters, that are most interesting for the decision making process. Other data in the warehouse are organized hierarchically into several independent groups, called dimensions, and used to perform calculations with the few important parameters. Data warehouses, owned by big enterprises and organizations, integrate data from heterogeneous sources: relational databases or other legacy database models, semi-structured data and different file formats. Recently, the World Wide Web, Web services and different information systems for exchanging data over the Internet and private networks have become an important data source.

6. A multisession-based multidimensional model

M. Body, M. Miquel, Y. B´edard, and A. Tchounikine. A multidimensional and multi version structure for OLAP applications. In DOLAP '02: Proceedings of the 5th ACM international workshop on Data Warehousing and OLAP, pages 1–6, New York, NY, USA,2002. ACM.

This paper addresses the problem of how to specifychanges in multidimensional databases. These changes may be motivated by evolutions ofuser requirements as well as changes of operationalsources. The multiversion-based multidimensional model we provide supports both data and structure changes. The approach consists in storing star versions according to relevant structure changes whereas data changes are recordedthrough dimension instances and fact instances in a star version. Themodel is able to integrate mapping functions to populate multiversion-based multidimensional databases.

On-Line Analytical Processing (OLAP) has emerged tosupport multidimensional data analysis by providing manipulations through aggregations of data drawn from various transactional databases. This approach is often based on a Multidimensional DataBase (MDB). A MDB schema [1] is composed of a fact (subject of analysis) and dimensions (axes of analysis). A fact contains indicators or measures. A measure is the data item of interest. As mentioned in [2], fact data reflect the dynamic aspect whereas dimension data represent more static information. However, sources (transactional databases) may evolve and these changes have an impact on structures and contents of the MDB built on them. In the same way, user requirement evolutions may induce schema changes; eg. to create a new dimension or a new "dimension member" [3], to add a new measure,…Changes occur on dimensions as well as facts. This paper addresses the problem of how to specify changes in a MDB. The changes may be related to contents as well as schema structures. Our work is not limited to represent the mapping data into the mostrecent version of the schema. We intend to keep trace of changes of multidimensionalstructures.

7.Transaction Management for a Main-Memory Database

P. Burte, B. Aleman-meza, D. B. Weatherly, R. Wu, S. Professor, and J. A. Miller. Transaction Management for a Main-Memory Database. The 38th Annual South eastern ACM Conference, Athens, Georgia, pages 263–268, January 2001.

As part of research by members of the Department of Computer Science at the University of Georgia, we have developed a Java-based Transaction Manager that fits into the multi-layered design of MMODB, a main-memory database system. We have sought to maximize the benefits of the Java programming language and to implement transaction principles that are suitable for in-memory databases. In this paper, we examine the details of thread concurrency and resource locking protocols, our deadlock prevention scheme, and the Java-based implementation of these design decisions. We show the effectiveness of our design with performance tests that simulate typical transactions on a highly concurrent database system.

8. Discovering business intelligence from online product reviews: A rule-induction framework.

W. Chung and H. Chen. Web-Based Business Intelligence Systems: A Review and CaseStudies. In G. Adomavicius and A. Gupta,editors, Business Computing, volume 3,chapter 14, pages 373–396. Emerald GroupPublishing, 2009.

Online product reviews are a major source of business intelligence (BI) that helps managers and marketers understand customers' concerns and interests. The large volume of review data makes it difficult tomanually analyze customers' concerns. Automated tools have emerged to facilitate this analysis, howevermost lack the capability of extracting the relationships between the reviews' rich expressions and thecustomer ratings. Managers and marketers often resort to manually read through voluminous reviewsto find the relationships. To address these challenges, we propose the development of a new class of BIsystems based on rough set theory, inductive rule learning, and information retrieval methods. We developed a new framework for designing BI systems that extract the relationship between the customer ratings and their reviews. Using reviews of different products from Amazon.com, we conducted bothqualitative and quantitative experiments to evaluate the performance of a BI system developed basedon the framework. The results indicate that the system achieved high accuracy and coverage related torule quality, and produced interesting and informative rules with high support and confidence values.The findings have important implications for market sentiment analysis and e-commerce reputation management.

As e-commerce supports higher interactivity among users withWeb 2.0 applications, user-generated content posted on these sitesis growing significantly. Users not only consume Web content, butalso produce massive data of their participation, often affectingother users' decisions. A study finds that more than three-quartersof the 2078 users reported that online product reviews had a significant influence on their purchase decisions (comScore, 2007).These online product reviews contain descriptions about user preferences, comments, and recommendations that serve as a majorsource of business intelligence (BI), helping managers and marketers to better understand customers. Management scholar PeterDrucker emphasizes that ''what is value to the customer'' may bethe most important question to answer in order to realize a business's mission and purpose (Drucker, 2003). However, the largevolume of online product review data creates significant information overload problems (Bowman, Danzig, Manber, & Schwartz,1994), making it difficult to discover BI from the reviews and toanalyze customer concerns.

9. Crowd sourcing Predictors of Behavioural Outcomes.

Josh C. Bongard, Member, IEEE, Paul D. H. Hines, Member, IEEE, Dylan Conger, Peter Hurd, and Zhenyu Lu. IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING YEAR 2013.

Generating models from large data sets—and deter-mining which subsets of data to mine—is becoming increasinglyautomated. However choosing what data to collect in the firstplace requires human intuition or experience, usually suppliedby a domain expert. This paper describes a new approachto machine science which demonstrates for the first time thatnon-domain experts can collectively formulate features, andprovide values for those features such that they are predictiveof some behavioural outcome of interest. This was accomplishedby building a web platform in which human groups interact toboth respond to questions likely to help predict a behavioural outcome and pose new questions to their peers. This resultsin a dynamically-growing online survey, but the result of thiscooperative behaviour also leads to models that can predict user'soutcomes based on their responses to the user-generated surveyquestions. Here we describe two web-based experiments thatinstantiate this approach: the first site led to models that canpredict users' monthly electric energy consumption; the other ledto models that can predict users' body mass index. As exponentialincreases in content are often observed in successful onlinecollaborative communities, the proposed methodology may, inthe future, lead to similar exponential rises in discovery andinsight into the causal factors of behavioural outcomes.

There are many problems in which one seeks to developpredictive models to map between a set of predictor variablesand an outcome. Statistical tools such as multiple regressionor neural networks provide mature methods for computingmodel parameters when the set of predictive covariates and themodel structure are pre-specified. Furthermore, recent researchis providing new tools for inferring the structural form ofnon-linear predictive models, given good input and output data. However, the task of choosing which potentiallypredictive variables to study is largely a qualitative task thatrequires substantial domain expertise. For example, a surveydesigner must have domain expertise to choose questions thatwill identify predictive covariates. An engineer must developsubstantial familiarity with a design in order to determinewhich variables can be systematically adjusted in order tooptimize performance.

10. Feature Selection Based on Class-Dependent Densities for High-Dimensional Binary Data.

Kashif Javed, Haroon A. Babri, and Mehreen Saeed. Ieee transactions on knowledge and data engineering, vol. 24, no. 3, march 2012.

Data and knowledge management systems employ feature selection algorithms for removing irrelevant, redundant, and noisy information from the data. There are two well-known approaches to feature selection, feature ranking (FR) and feature subset selection (FSS). In this paper, we propose a new FR algorithm, termed as class-dependent density-based feature elimination (CDFE), for binary data sets. Our theoretical analysis shows that CDFE computes the weights, used for feature ranking, more efficiently as compared to the mutual information measure. Effectively, rankings obtained from both the two criteria approximate each other. CDFE uses a fill trapper approach to select a final subset. For data sets having hundreds of thousands of features, feature selection with FR algorithms is simple and computationally efficient but redundant information may not be removed. On the other hand, FSS algorithms analyze the data for redundancies but may become computationally impractical on high-dimensional data sets. We address these problems by combining FR and FSS methods in the form of a two-stage feature selection algorithm. When introduced as a pre processing step to the FSS algorithms, CDFE not only presents them with a feature subset, well in terms of classification, but also relieves them from heavy computations. Two FSS algorithms are employed in the second stage to test the two-stage feature selection idea. We carry out experiments with two different classifiers (naive Bayes' and kernel ridge regression) on three different real-life data sets (NOVA, HIVA, and GINA) of the "Agnostic Learning versus Prior Knowledge" challenge. As a stand-alone method, CDFE shows up to about 92 percent reduction in the feature set size. When combined with the FSS algorithms in two-stages, CDFE significantly improves their classification accuracy and exhibits up to 97 percent reduction in the feature set size. We also compared CDFE against the winning entries of the challenge and found that it outperforms the best results on NOVA and HIVA while obtaining a third position in case of GINA.

11. Techniques, Process, and Enterprise Solutions of Business Intelligence.

Li Zeng, Lida Xu, Zhongzhi Shi, Maoguang Wang, and Wenjuan Wu. 2006 IEEE Conference on Systems, Man, and Cybernetics October 8-11, 2006, Taipei, Taiwan.

Business Intelligence (BI) has been viewed as sets of powerful tools and approaches to improving business executive decision-making, business operations, and increasing the value of the enterprise. The technology categories of BI mainly encompass Data Warehousing, OLAP, and Data Mining. This article reviews the concept of Business Intelligence and provides a survey, from a comprehensive point of view, on the BI technical framework, process, and enterprise solutions. In addition, the conclusions point out the possible reasons for the difficulties of broad deployment of enterprise BI, and the proposals of constructing a better BI system. As businesses continue to use computer systems for a growing number of functions in today's competitive, fast-evolving world, most companies face the challenges of processing and analyzing huge amounts of data and turning it into profits. They have large volumes of detailed operational data, but key business analysts and decision makers still cannot get the answers they need to react quickly enough to changing conditions because the data are spread across many departments in the organization or are locked in a sluggish technology environment. In these cases, Business Intelligence (BI) is presented, which are sets of tools, technologies and solutions designed for end users to efficiently extract useful business information from oceans of data. Nowadays, BI has been viewed as sets of powerful tools and approaches to increasing the value of the enterprise. More and more business sectors have deployed advanced BI solutions to enhance their competitiveness since it is important to the effective and efficient running of the enterprises.

12. Support vector machine with adaptive parameters in financial time series forecasting.

Cao, L.J. ; Dept. of Mech. Eng., Nat. Univ. of Singapore, Singapore ; Tay, F.E.H. EEE Transactions on, On page(s): 1167 - 1178 Volume: 19, Issue: 7, July 2008

A novel type of learning machine called support vector machine (SVM) has been receiving increasing interest in areas ranging from its original application in pattern recognition to other applications such as regression estimation due to its remarkable generalization performance. This paper deals with the application of SVM in financial time series forecasting. The feasibility of applying SVM in financial forecasting is first examined by comparing it with the multilayer back-propagation (BP) neural network and the regularized radial basis function (RBF) neural network. The variability in performance of SVM with respect to the free parameters is investigated experimentally. Adaptive parameters are then proposed by incorporating the nonstationarity of financial time series into SVM. Five real futures contracts collated from the Chicago Mercantile Market are used as the data sets. The simulation shows that among the three methods, SVM outperforms the BP neural network in financial forecasting, and there are comparable generalization performance between SVM and the regularized RBF neural network. Furthermore, the free parameters of SVM have a great effect on the generalization performance. SVM with adaptive parameters can both achieve higher generalization performance and use fewer support vectors than the standard SVM in financial forecasting.

13. Financial time series modelling with discounted least squares back-propagation.

A. N. Refenes, Y. Bentz, D. W. Bunn, A. N. Burgess, and A. D. Zapranis, "Financial time series modeling with discounted least squares back-propagation", Neuro computing, vol. 14, pp.123 -138 1997.

We propose a simple modification to the error back propagation procedure which takes into account gradually changing input-output relations. The procedure is based on the principle of Discounted least squares whereby learning is biased towards more recent observations with long term effects experiencing exponential decay through time. This is particularly important in systems in which the structural relationship between input and response vectors changes gradually over time but certain elements of long term memory are still retained. The procedure is implemented by a simple modification of the least-squares cost function commonly used in error back propagation. We compare the performance of the two cost functions using both a controlled simulation experiment and a non-trivial application in estimating stock returns on the basis of multiple factor exposures. We show that in both cases the DLS procedure gives significantly better results. Typically, there is an average improvement of above 30% (in MSE terms) for the stock return modelling problem.

14. Stock Market Value Prediction Using Neural Networks.

T. Kimoto, K. Asakawa, M. Yoda, and M. Takeoka, "Stock market prediction system with modular neural networks", Neural Networks in Finance and Investing, pp.343 -357 1993

Neural networks, as an intelligent data mining method, have been used in many different challenging pattern recognition problems such as stock market prediction. However, there is no formal method to determine the optimal neural network for prediction purpose in the literature. In this paper, two kinds of neural networks, a feed forward multi layer Perception (MLP) and an Elman recurrent network, are used to predict a company's stock value based on its stock share value history. The experimental results show that the application of MLP neural network is more promising in predicting stock value changes rather than Elman recurrent network and linear regression method. However, based on the standard measures that will be presented in the paper we find that the Elman recurrent network and linear regression can predict the direction of the changes of the stock value better than the MLP.From the beginning of time it has been man's common goal to make his life easier. The prevailing notion in society is that wealth brings comfort and luxury, so it is not surprising that there has been so much work done on ways to predict the markets. Therefore forecasting stock price or financial markets has been one of the biggest challenges to the AI community. Various technical, fundamental, and statistical indicators have been proposed and used with varying results. However, none of these techniques or combination of techniques has been successful enough. The objective of forecasting research has been largely beyond the capability of traditional AI research which has mainly focused on developing intelligent systems that are supposed to emulate human intelligence. By its nature the stock market is mostly complex (non-linear) and volatile. With the development of neural networks, researchers and investors are hoping that the market mysteries can be unravelled.

15. Application of a Case Base Reasoning Based Support Vector Machine for Financial Time Series Data Forecasting.

Pei-Chann Chang, Chi-Yang Tsai, Chiung-Hua Huang, Chin-Yuan Fan 5th International Conference on Intelligent Computing, ICIC 2009 Ulsan, South Korea, September 16-19, 2009 Proceedings

This paper establishes a novel financial time series-forecasting model, by clustering and evolving support vector machine for stocks on S&P 500 in the U.S. This forecasting model integrates a data clustering technique with Case Based Reasoning (CBR) weighted clustering and classification with Support Vector Machine (SVM) to construct a decision-making system based on historical data and technical indexes. The future price of the stock is predicted by this proposed model using technical indexes as input and the forecasting accuracy of the model can also be further improved by dividing the historic data into different clusters. Overall, the results support the new stock price predict model by showing that it can accurately react to the current tendency of the stock price movement from these smaller cases. The hit rate of CBR-SVM model is 93.85% the highest performance among others.

16. Self-Organizing Roles on Agile Software Development Teams.

Rashina Hoda,Member, IEEE, James Noble, Member, IEEE, and Stuart Marshall, Member, IEEE. IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. 39, NO. 3, MARCH 2013

Self-organizing teams have been recognized and studied in various forms—as autonomous groups in socio-technicalsystems, enablers of organizational theories, agents of knowledge management, and as examples of complex-adaptive systems. Overthe last decade, self-organizing teams have taken centre stage in software engineering when they were incorporated as a hallmark ofagile methods. Despite the long and rich history of self-organizing teams and their recent popularity with Agile methods, there hasbeen little research on the topic within software engineering. Particularly, there is a dearth of research on how Agile teams organizethemselves in practice. Through a Grounded Theory research involving 58 Agile practitioners from 23 software organizations in NewZealand and India over a period of four years, we identified informal, implicit, transient, and spontaneous roles that make Agile teamsself-organizing. These roles—Mentor, Coordinator, Translator, Champion, Promoter, and Terminator—are focused toward providinginitial guidance and encouraging continued adherence to Agile methods, effectively managing customer expectations and coordinatingcustomer collaboration, securing and sustaining senior management support, and identifying and removing team members threateningthe self-organizing ability of the team. Understanding these roles will help software development teams and their managers bettercomprehend and execute their roles and responsibilities as a self-organizing team. SELF-ORGANIZINGteams have been recognized and studiedin various forms—as autonomous groups in socio-technical systems as early as in the 1950s, as enablers ofholographic organizations in organizational theory and asagents of knowledge creation and management around the1980s, and as examples of entities exhibiting spontaneousorder in Complex Adaptive Systems (CAS) in the 1990s. Morerecently, with the rise of Agile methods in the late 1990s andearly 2000s, self-organizing teams took centre stage in thesoftware engineering arena when they were incorporated asa hallmark of Agile software development.Self-organizing teams are at the heart of Agile softwaredevelopment Self-organizing Agileteams are composed of “individuals [that] manage their ownworkload, shift work among themselves based on need and best fit,and participate in team decision making". Self-organizingteams must have common focus, mutual trust, respect, andthe ability to organize repeatedly to meet new challenges.The scrum method specifically mentions self-organizingagile teams and the concept of "empowered" teams hasrecently been added to XP. Self-organizing teams are not only seen as enabling Agileengineering practices, but also as capturing the spirit of Agilevalues and principles, which focus on human and socialaspects of software engineering. Self-organizing teams is oneof the principles behind the Agile Manifesto and have beenidentified as one of the critical success factors of Agileprojects.

3. METHODOLOGIES

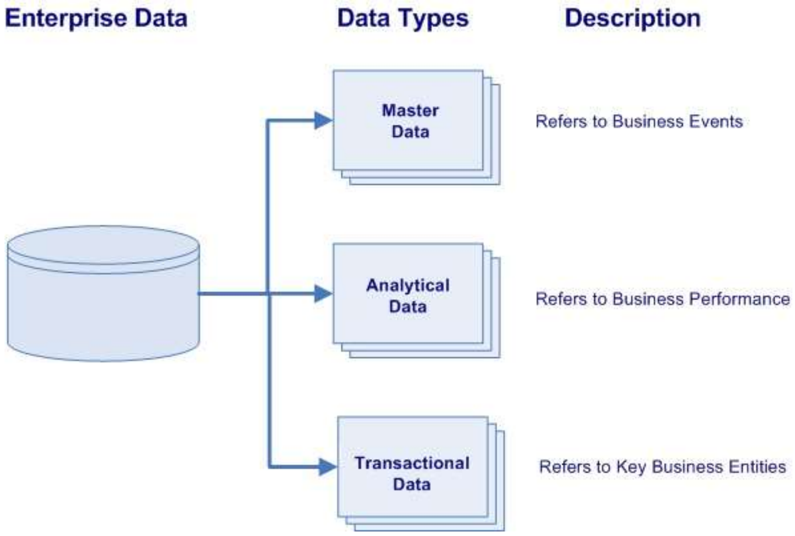
3.1 Mine the transaction Data

3.1.1 Introduction to Transaction data

Transactional data will be data straightforwardly determined because of exchanges. Not at all like different sorts of information, value-based information contains a period measurement which implies that there is timeline to it and after some time, it turns out to be less pertinent. Instead of being the question of exchanges like the item being acquired or the personality of the client, it is all the more a reference information portraying the time, put, costs, instalment techniques, markdown qualities, and amounts identified with that specific exchange, as a rule at the purpose of offer

Transactional data depicts an interior or outer occasion which happens as the association conducts business and can be budgetary, calculated or any business-related process including exercises, for example, buys, demands, protection claims, stores, pulls back, and so on. Transactional data bolster continuous business operations and are incorporated into the data and application frameworks that are utilized to mechanize an association's key business procedures, for example, online transaction processing (OLTP) systems.

It is assembled with its related and references ace information, for example, item data and charging sources. As a piece of value-based records, value-based information is gathered with related ace information and reference information. Value-based information records a period and pertinent reference information required for a Transactional data record.


Enterprise Data
Data Types
Description
Master Data
Refers to Business Events
Analytical Data
Refers to Business Performance
Transactional Data
Refers to Key Business Entities

3.1.2 Mining Transaction Data from Database

At whatever point data or information is put away, controlled, or "oversaw" in a database, the operation is thought to be a database transaction. The term demonstrates that there has been work achieved inside the database administration framework or in the database itself. So as to guarantee security, a database exchange happens independently from different exchanges inside the framework to guarantee that all data put away stays available, secure, and rational.

A transaction database is a DBMS those backings the moving back of exchanges on the information stores if not finished legitimately. Interference in the transaction can be caused by control misfortune or an intrusion in availability to the information store. The lion's share of databases being used today bolster exchanges. These operations can comprise of one or numerous information control questions or proclamations. Since information trustworthiness and consistency are basic to legitimate database operation, most exchanges utilize SQL or a SQL-like dialect to lead operations utilizing the accompanying following pattern:

Step 1: Initiate the transaction process.
Step 2: Execute the keyword provided from the data queries or else manipulate manually.
Step 3: Process the transaction to be complete it if there are no errors or warning during the process.

Step 4: If any error occurs during the transaction, roll back the process to the operation end and start again.

The above mentioned process will provide transaction dataset from a database using keywords. Even in case of error occurrence, there is a possibility to roll back the database to the original position and can start the process from the beginning.

3.1.2 Fetching transaction data

The SQL language is in a general sense value-based in nature. There are various database usage of the SQL standard being used today which expand the dialect and execute an express "Begin TRANSACTION" proclamation; in any case, this activity basically deactivates the auto submit articulation.

After this point, no operations on the database wind up noticeably obvious to different employments of the information store until a COMMIT articulation is process by the framework. A SQL deep ROLLBACK articulation can likewise be executed which will fix any work led on the framework since the last fruitful exchange. The ROLLBACK and COMMIT explanations will finish up an exchange and begin the following. On the off chance that the DBMS debilitated the auto submit highlight utilizing a START TRANSACTION explanation, it will be re-empowered. Elective usage of SQL likewise utilize the accompanying articulations: BEGIN, BEGIN WORK, and BEGIN TRANSACTION.

3.2 Association rules to find out relationship

3.2.1 Association Rules

Association rule mining is a technique which is intended to discover frequent patterns, connections, affiliations, or causal structures from informational collections found in different sorts of databases, for example, social databases, value-based databases, and different types of information vaults.

Given an arrangement of exchanges, affiliation manage mining plans to discover the principles which empower us to foresee the event of a particular thing in view of the events of alternate things in the exchange. Affiliation administer mining is the information mining procedure of finding the standards that may oversee affiliations and causal questions between sets of things. So in a given exchange with numerous things, it tries to discover the principles that represent how or why such things are frequently purchased together.

3.2.2 Finding relationship Using AR

Initial step is to examine the database. It makes every thing as a hub and in the meantime it influences the supporting exchange to list for every hub. Supporting exchange list is a twofold gathering T= {Tid, Itemset} (where Tid is exchange id and Itemset is exchange thing set). Given database that incorporates five things and nine exchanges (appeared in table one). Assume that base help minsupp is two. Table two contains the data of help exchange rundown of table one. With this Trade List specifically we will get data of which things are showing up in which exchanges. So here number of exchanges identified with that thing will choose check of that thing. So we have consider of I1 6 as appeared in Below table. Likewise we will get the include of the considerable number of things the database. Presently in the wake of considering the base help from client we will contrast that base help and the check. In the event that it is more noteworthy those will be considered as successive 1 thing set.

TID	The List of Item ID
T1	11,12,15
T2	12,14
T3	12,13
T4	11,12,14
T5	11,13
T6	12,13
T7	11,13
T8	11,12,13,15
T9	11,12,13

Table: Transaction Dataset

Items	AR Relationship
11	T1,T4,T5,T7, T8, T9

12	T1,T2,T3,T4, T6,T8, T9
13	T3,T2, T5, T8, T6, T9 T7, T8,T9
14	T2, ,T T4
15	T1,T8

Table: AR Relationship

In following stage for finding incessant itemset do crossing point of I1 and I2. In result on the off chance that we will get a few exchanges we will get regular then it implies that the thing is identified with other exchange moreover. Tally the quantities of those normal exchanges that will give the check of those two things that are purchased together that many quantities of times. Case I1∩ I2 will get the consider 4 that implies I1 and I2 are as one 4 number of times in the database. Contrast this and least help. At that point we will get visit 2 itemset. Essentially the strategy is iteratively connected.

3.3 High utility mining

The problem of high utility mining is an extension of the problem of frequent pattern mining. Frequent pattern mining is one of the popular methods in data mining, which consists of finding frequent patterns in various transaction databases. Here the problem of frequent item set mining and the transaction based data set is discussed. Any database can be considered as the transaction data set with some conditions. For Example: where various process and various customer involves, like sales, Banking transactions, Travel itinerary and etc.

Let us take the following database. The below mentioned database is a transaction database. A transaction database is valid database which containing a set of transactions made by many customers. A transaction dataset is a set of items bought by a customer. For example, in the following database, the first customer bought items a,b,c,d,e, while the second one bought items a,b,d,e. This shows various transactions are involved in this database.

Transaction Items	Items
C1	{a,b,c,d,e}
C2	{a,c,d,e}
C3	{b,c,d,e,}
C4	{a,b,d,e}

Sample transaction table

C-Customer, a-Item1, b-Item2,c-Item3,d-Item4,e-Item5

The main objective of High utility mining is to discover visit thing sets. Numerous famous calculations have been proposed for this issue, for example, Apriori, DIC, K-Mine and so forth. These calculations will taken as info an exchange database and a parameter MST called the base help edge. These calculations at that point restore all arrangement of things that shows up in any event exchanges as it were. Additionally these calculations won't manage profound learning procedures.

3.4 Implementing High utility mining with Association rules

The Utility mining in view of the help certainty structure gives the target measure of the principles that are of includes with the clients. It doesn't reflect with the semantic measure among the things. These semantic measures of a thing set are portrayed with utility esteems that are normally connected with exchange things, where a client will be intrigued to a thing set just on the off chance that it fulfills a given utility imperative.

In this examination, the issue of finding association rules using utility based structure, which is a hypothesis of the total sureness measure. Using this semantic thought of gauges, we by then propose a compacted depiction for alliance rules having inconsequential trailblazer and maximal resulting. This depiction is made with the help of HUIAR (High Utility Item set using Association Rules) and their generators. We propose the counts to create the utility based non-tedious alliance rules and systems for imitating all association rules. In addition, we delineate the counts which deliver high utility item sets (HUI) and high utility thing sets with their generators. These proposed computations are executed using both fabricated and bona fide datasets. The results demonstrate better capability and ampleness of the proposed HUCI-Miner computation appeared differently in relation to other without a doubt comprehended existing figurings. Additionally, the exploratory results demonstrate better quality in the compacted depiction of the entire control set under the contemplated structure

3.4.2 High Utility mining Transaction with AR

The traditional association rules mining (ARM) techniques depend on support confidence framework in which all items are given same importance by considering the presence of an item within a transaction, but not the profit of item in that transaction. The goal of such techniques is to extract all the frequent item sets, where the item sets having the given minimum support such that the support is the percentage of transactions containing the itemset, which generate all the valid association rules A → B from frequent item set A ∪ B whose confidence has at least the user defined confidence such that the confidence is the percentage of transactions containing item set B among the set of transactions containing A. In other words, given a subset of the items in an item set, we need to predict the probability of the purchase of the remaining items in a transactional database. In general, from confidence of a rule generated from an item set, we can know the percentage of number transactions of the items, which is sold together with remaining items of that item set. However, we may not know the percentage of its profit obtained. Therefore, if we can know the percentage of the items' profit, we are in a position to find out a rule, which is more valuable than support and confidence, and as a result, it can allow us to permit with more accurate financial analysis and decisions. Nevertheless, this support-confidence framework does not provide the semantic measure of the rule but only it provides the statistical measure as the relative importance of items is not considered. However, such measure is not an adequate measure to the decision maker as the item set cannot be measured in terms of stock, cost or profit, called utility. Consider a sales manager who aims to promote item sets to increase the item selling. The following example is evident that a support-confidence based framework for association rule mining may mislead the manager in the decision making for determining the financial implications of an item set.

Tid	Transaction
T1	A(4),C(1), E(6), F(2)
T2	D(1), E(4), F(5)

T3	B(4), D(1), E(5), F(1)
T4	D(1), E(2), F(6)
T5	A(3),C(1), E(1)
T6	B(1), F(2), H(1)
T7	D(1), E(1), F(4), G(1), H(1)
T8	D(7), E(3)
T9	G(10)

Table : High utility with AR

3.5 Method of FP growth

3.5.1 FP growth

FP Growth is a certainty is utilized as intriguing measures for deciding the significance of an affiliation run the show. The help of a manage exactly gives the factual valuable data of the comparing itemset from which the administer is inferred yet it doesn't show the relative significance of itemsets, which confines its money related ramifications. The certainty measure demonstrates the factual contingent measure of the intriguing quality of the affiliation run the show. In any case, it doesn't give any esteem based choice as demonstrated in Example 1. Note that there are other fascinating measures in view of the likelihood, for example, Lift, Conviction and Leverage, which are clarified. Nonetheless, these fascinating measures don't think about the amount of every thing in an exchange and the benefit of every thing.

3.5.2 FP Growth Definition

Definition 1. The utility of a thing $i\ell$ in an exchange td is signified by $u(i\ell, td)$ and characterized by the result of inner utility $q(i\ell, td)$ and outer utility $p\ell$ of $i\ell$, that is, $u(i\ell, td) = p\ell \times q(i\ell, td)$.

Definition 2. The utility of an itemset X contained in an exchange td, signified by $u(X, td)$ and characterized by the aggregate of utility of each thing of X in td. As it were, $u(X, td) = P$ $i\ell \in X \wedge X \subseteq td$ $u(i\ell, td)$.

Definition 3. The utility of an itemset X in D is indicated by $u(X)$ and characterized by the total of the utilities of X in every one of the exchanges containing X in D, that is, $u(X) = P$

X⊆td∧td∈D u(X, td) = P X⊆td∧td∈D P iℓ∈X u(iℓ, td). The arrangement of exchanges containing an itemset X, in database D is known as the anticipated database of itemset X and it is indicated by DX.

Definition 4. An itemset X is known as a high utility itemset, if the utility of X has at any rate the client indicated least utility limit, min util. Else, it is known as a low utility itemset. Give H a chance to be the total arrangement of high utility itemsets. At that point, H = {X|X ∈F , u(X) ≥ min util}.

Example

Consider again the transaction database in Table 1 with the utility table given in Table 2. From Table 2, note that the external utility of item B is 4 and the internal utility of the item B in the transaction t3 is 4. Thus, the utility of item B in t3 is u(B, t3) = pB × q(B, t3) = 4 × 4 = 16. The utility of the itemset BF in the transaction t6 is u(BF, t6) = u(B, t6) + u(F, t6) = 4 × 1 + 1 × 2 = 6 and the utility of the itemset BF in D becomes u(BF) = u(BF, t3) + u(BF, t6) = 23. Note that, if the minimum utility threshold is 20, the itemset BF is a high utility itemset.

Tid	Transaction
T1	A(4),C(1), E(6), F(2)
T2	D(1), E(4), F(5)
T3	B(4), D(1), E(5), F(1)
T4	D(1), E(2), F(6)
T5	A(3),C(1), E(1)
T6	B(1), F(2), H(1)
T7	D(1), E(1), F(4), G(1), H(1)
T8	D(7), E(3)
T9	G(10)

Repeat table for example

Item	**Utility**
A	**3**
B	**4**
C	**5**
D	**2**
E	**1**
F	**1**
G	**2**
H	**1**

3.6 Database Shrinking using Memory Management

3.6.1 Memory Management

In this proposal memory administration includes keeping up ideal sizes for the Transactional Database occurrence memory structures as requests on the database change. The memory structures that must be overseen are the system global area (SGA) and the instance program global area(instance PGA).

The Transaction Database bolsters different memory administration strategies, which are picked by introduction parameter settings. The framework suggests that strategy empower in this proposal is known as programmed memory administration.

3.6.2 Data shrinking in Transaction database

DBCC SHRINKDATABASE-SRDB

(database_name | database_id | 0

[,target_percent, provide keyword]

[, { NOTRUNCATE | TRUNCATEONLY | TRUNCATE }]

)   [WITH NO_INFOMSGS]

database_name | database_id | 0

Is the name or ID of the database to be contracted. In the event that 0 is determined, the present database is utilized.

target_percent

Is the level of free space that you need left in the database document after the database has been contracted.

NO TRUNCATE

Compacts the information in information documents by moving designated pages from the finish of a record to unallocated pages in the front of the document. target_percent is discretionary. The free space toward the finish of the document isn't came back to the working framework, and the physical size of the record does not change. In this way, when NOTRUNCATE is determined, the database shows up not to recoil. NOTRUNCATE is relevant just to information records. The log record isn't influenced.

TRUNCATEONLY

Discharges all free space toward the finish of the document to the working framework however does not play out any page development inside the record. The information document is contracted just to the last designated degree. target_percent is disregarded if determined with TRUNCATEONLY.

TRUNCATEONLY influences the log record. To truncate just the information record, utilize DBCC SHRINKFILE.

WITH NO_INFOMSGS

Stifles every enlightening message that have seriousness levels from 0 through 10.

4. SYSTEM STUDY

4.1 EXISTING SYSTEM

The problem of frequent item set mining is prominent. In any case, it has some critical constraints with regards to investigating client exchanges. A vital constraint is that buy amounts are not considered. In this manner, a thing may just show up once or zero time in an exchange. In this manner, if a client has purchased five breads, ten breads or twenty breads, it is seen as the same.

A moment imperative restriction is that all things are seen as having a similar significance, utility of weight. For instance, if a client purchases an extremely costly container of wine or a modest bit of bread, it is seen as being similarly vital.

In data mining, frequent pattern mining (FPM) is a standout amongst the most seriously explored issues as far as computational and algorithmic advancement. In the course of the most recent two decades, various calculations have been proposed to tackle visit design mining or some of its variations, and the enthusiasm for this issue still continues. Distinctive systems have been characterized for visit design mining. The most widely recognized one is the help based system, in which item sets with recurrence over a given edge are found. Be that as it may, such item sets may now and then not speak to intriguing positive connections between's things since they don't standardize for the total frequencies of the things. Thusly, elective measures for intriguing quality have been characterized in the writing.

Frequent mining will concentrate on the help based system in light of the fact that the calculations in view of the intriguing quality structure are given in an alternate section. One of the fundamental purposes behind the abnormal state of enthusiasm for visit design mining calculations is because of the computational test of the undertaking. Notwithstanding for a direct measured dataset, the pursuit space of FPM is tremendous, which is exponential to the length of the exchanges in the dataset. This normally makes challenges for item set age, when the help levels are low. Truth be told, in most viable situations, the help levels at which one can mine the relating item sets are restricted (limited underneath) by the memory and computational imperatives. Along these lines, it is basic to have the capacity to play out the examination in a space-and time-proficient way. Amid the initial couple of years of research here, the essential concentration of work was to discover FPM calculations with better computational proficiency.

4.1.1 Drawbacks in existing system

- Frequent pattern mining in K mine is the patterns which appear frequently in database and it takes more time for execution.
- For example a set of items, such as milk and bread, that appear frequently together in a transaction data set is a frequent itemset. A subsequence, such as buying first a PC, then a digital camera, and then a memory card, if it occurs frequently in a shopping history database, is a (frequent) sequential pattern. If Pattern occurs frequently, it is called a frequent pattern. Finding such frequent patterns is more difficult in the existing system
- Frequent pattern mining has become an existing data mining task and it only focused theme in data mining research so there is no wide range of analysis is available. A typical example of frequent item set mining is market basket analysis.
- This process analyzes customer buying habits by finding associations between the different items that customers place in their "shopping baskets".
- The discovery of such associations cannot help retailers to develop marketing strategies by gaining insight into which items are frequently purchased together by customers

4.2 PROPOSED SYSTEM

K – Mining is introducing in Data mining as an important part of knowledge discovery process that we can analyze an enormous set of data and get hidden and useful knowledge. Data mining is applied effectively not only in the business environment but also in other fields such as weather forecast, medicine, transportation, healthcare, insurance, government…etc.

Here the data engineering has been applied for health prediction through food consumed. Data mining has a lot of advantages when using in a specific industry. Besides those advantages, data mining also has its own disadvantages e.g., privacy, security and misuse of information. We will examine those advantages and disadvantages of data mining in different industries in a greater detail.

Here Data mining used for the process of selecting, exploring and modelling large amounts of food data. This process has become an increasingly pervasive activity in all areas of medical science research. Data mining has resulted in the discovery of useful hidden patterns from massive databases. Data mining problems are often solved using different approaches from both computer sciences, such as multi-dimensional databases, machine learning, soft computing and data visualization; and statistics, including hypothesis testing, clustering, classification, and regression techniques.

The mining model that an algorithm creates from your data can take various forms, including:

- A set of clusters that describe how the cases in a dataset are related.
- A decision tree that predicts an outcome, and describes how different criteria affect that outcome.
- A mathematical model that forecasts sales.
- A set of rules that describe how products are grouped together in a transaction, and the probabilities that products are purchased together.

ADVANTAGES OF PROPOSED SYSTEM

- **Major Techniques in data mining**

A few noteworthy information mining methods have been produced and utilized as a part of information mining ventures as of late including affiliation, order, grouping, forecast and consecutive examples. We will quickly analyze the entire example to have a decent look up with them.

- **Association**

Association is a standout amongst other known information mining system. In affiliation, an example is found in light of a relationship of a specific thing on different things in a similar exchange. For design, the affiliation strategy is utilized as a part of reservation frameworks examination to recognize in which territory clients as often as possible reserve a spot. In view of this information organizations can set up comparing reservation counters here to offer more tickets and influence more to benefit

- **Classification**

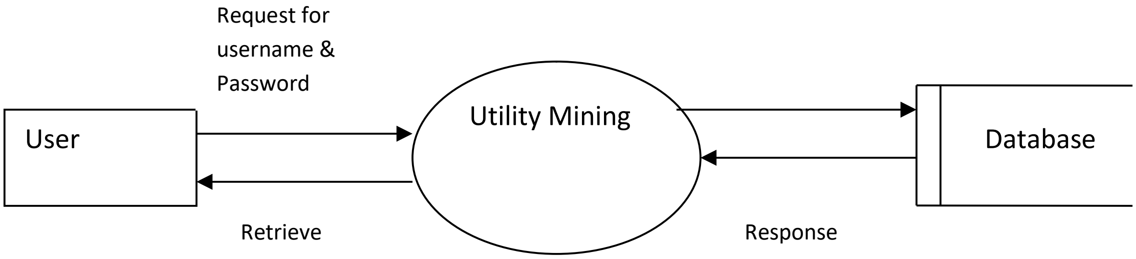
Classification is the popular process which mostly depends on machine learning approach. Arrangement strategy makes utilization of numerical strategies, for example, choice trees, straight programming, neural system and measurements. Fundamentally characterization is utilized to order everything in an arrangement of information into one of predefined set of classes or groups. For design, we can apply order in application that "given every single past record of workers who left the organization, anticipate which current representatives are most likely to leave later on." For this situation, we partition the representative's records into two gatherings that are "leave" and "remain".

5. SYSTEM DESIGN

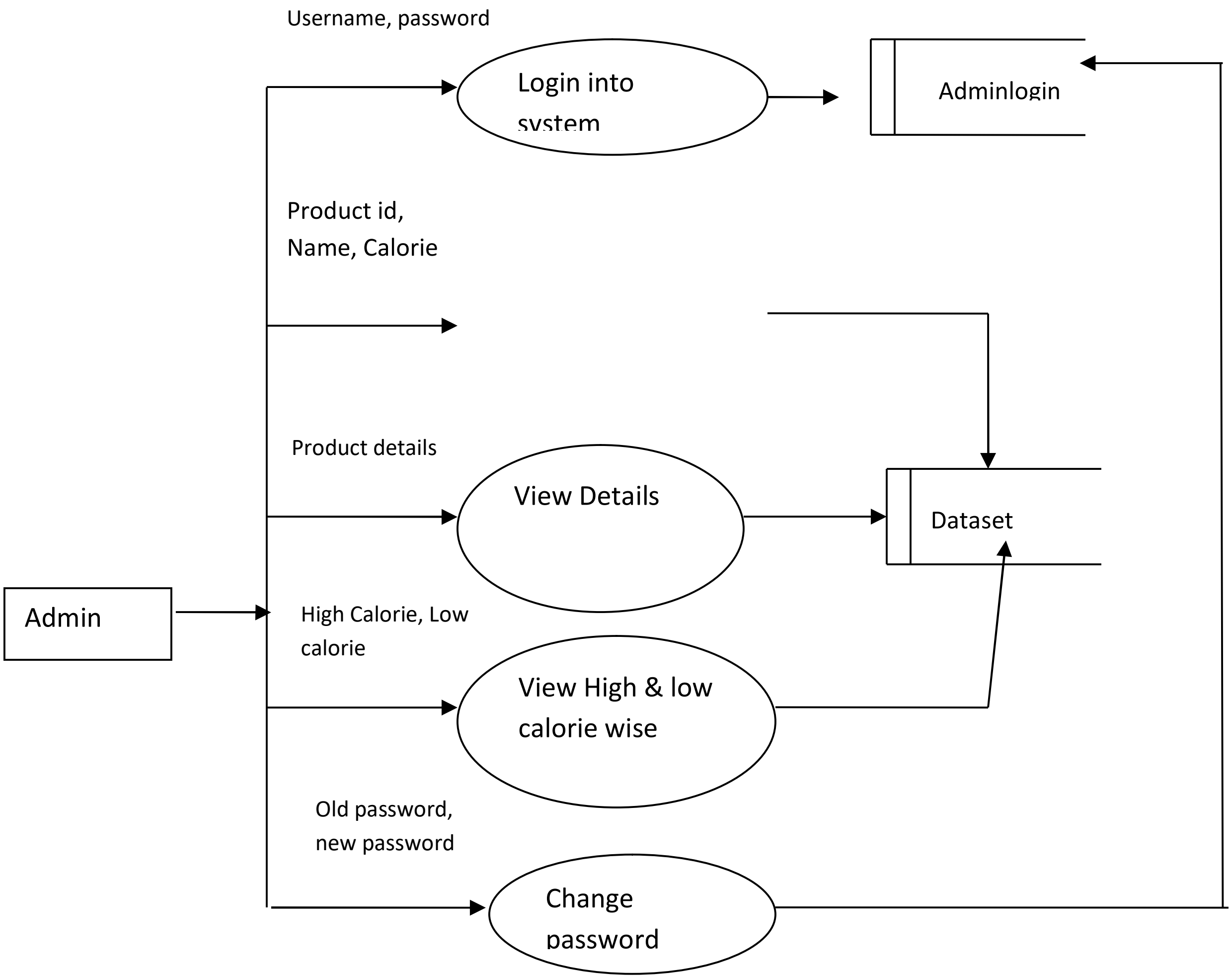
5.1 DATA FLOW DIAGRAM

DFD:

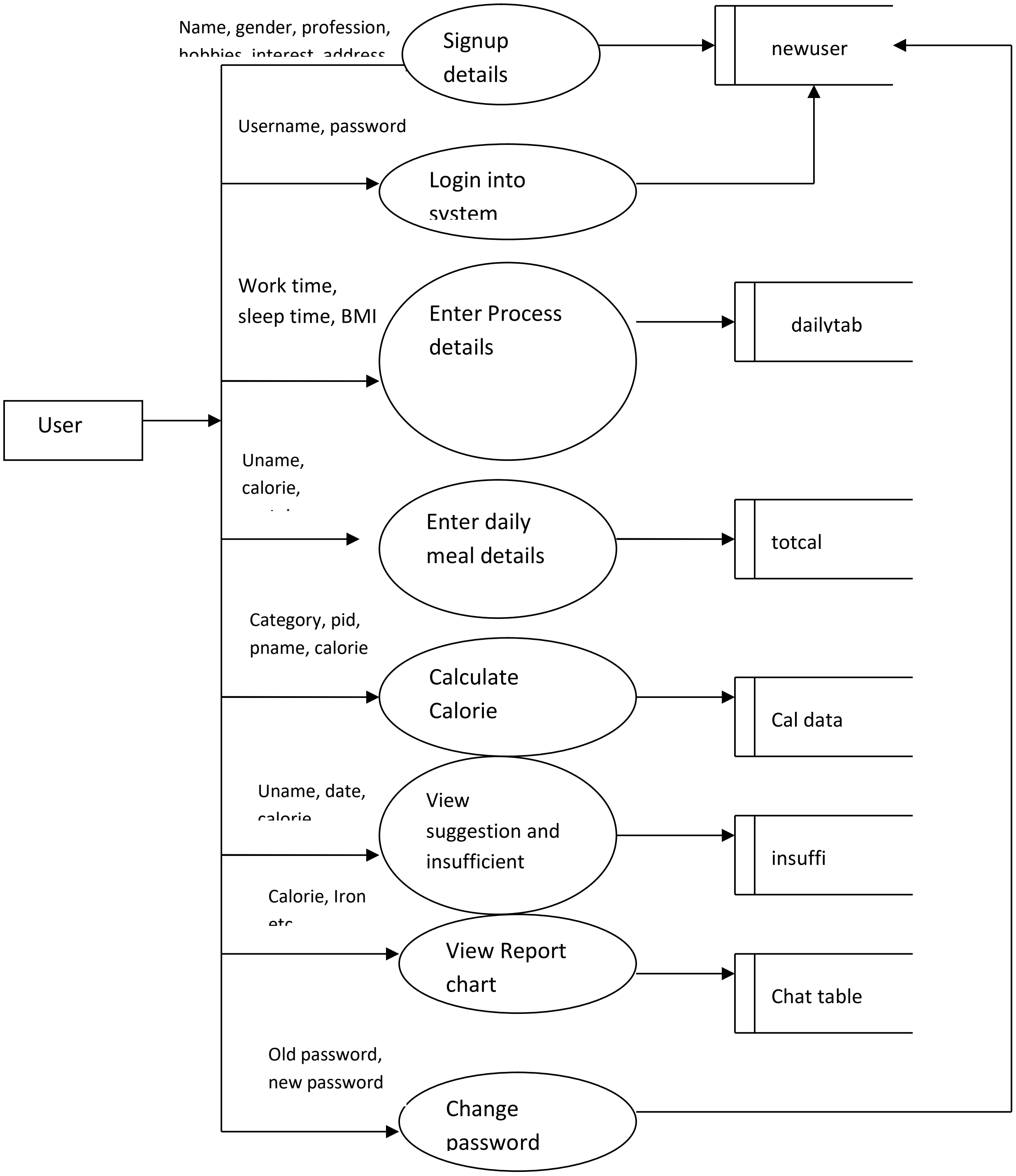
Level 0:



Level 1

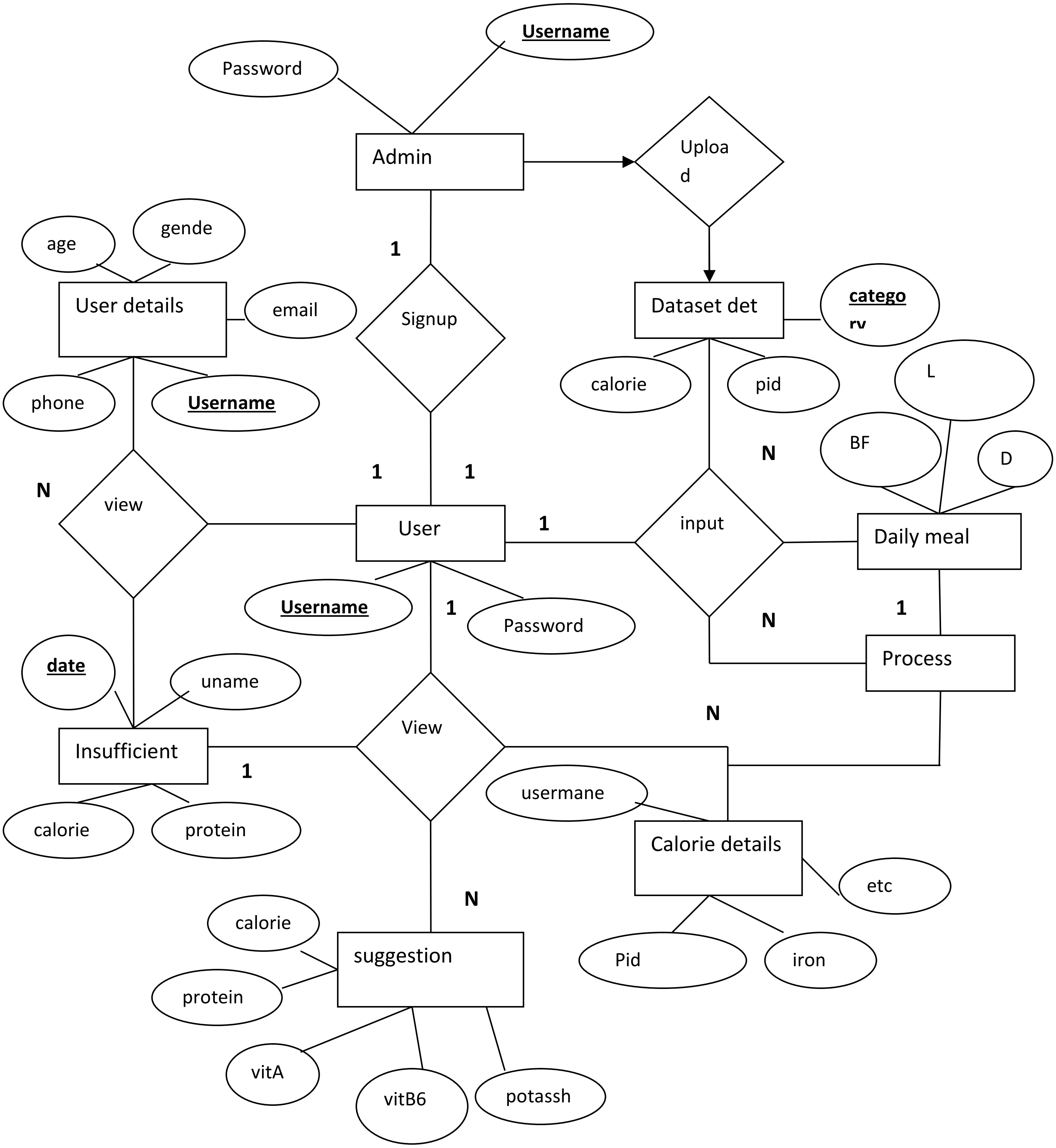

Username, password
Login into system
Adminlogin
Product id, Name, Calorie
Product details
View Details
Dataset
Admin
High Calorie, Low calorie
View High & low calorie wise
Old password, new password
Change password

Level 2:



5.2 ER DIAGRAM

ER Diagram:


Username
Password
Admin
Uploa
d
age
gende
1
User details
email
Signup
Dataset det
catego
ry
calorie
pid
L
phone
Username
BF
D
N
N
1
1
view
1
User
input
Daily meal
Username
1
Password
N
1
date
Process
uname
N
Insufficient
View
1
usermane
Calorie details
calorie
protein
etc
N
calorie
suggestion
Pid
iron
protein
vitA
vitB6
potassh

5.3 TABLE DESIGN

TABLE DESIGN :

Table Name : adlogintbl

Primary key : username

Fieldname	**Datatype**	**Size**	**Constraints**	**Description**
Uname	Varchar	50	Not Null	Admin username
Pwd	Varchar	50	Not Null	Admin password

Table Name : datasetdet

Fieldname	**Datatype**	**Size**	**Constraints**	**Description**
Cat	Varchar	50	Not Null	Food category
Pid	Varchar	50	Not Null	Food id
Pname	Varchar	50	Not Null	Food name
Calories	Varchar	50	Not Null	Food calories
Protein	Varchar	50	Not Null	Food protein
Carbo	Varchar	50	Not Null	Foodcarbohydrates
Pott	Varchar	50	Not Null	Food pottasium
Iron	Varchar	50	Not Null	Food iron
calc	Varchar	50	Not Null	Food calcium
Vitamin A	Varchar	50	Not Null	Food vitamin A
Vitamin B	Varchar	50	Not Null	Food vitamin B
Vitamin C	Varchar	50	Not Null	Food vitamin C

Table Name : averagetbl

Foreign key : username

Fieldname	**Datatype**	**Size**	**Constraints**	**Description**
Calories	Varchar	50	Not Null	Amount of calories
Protein	Varchar	50	Not Null	Amount of protein
carbo	Varchar	50	Not Null	Amountofcarbohydrates
pott	Varchar	50	Not Null	Amount of pottassium
Iron	Varchar	50	Not Null	Amount of iron
Cal	Varchar	50	Not Null	Amount of calcium
Vitamin A	Varchar	50	Not Null	Amount of vitamin A
Vitamin B	Varchar	50	Not Null	Amount of vitamin B
Vitamin C	Varchar	50	Not Null	Amount of vitamin C
Uname	Varchar	50	Foreign key	Username
Date	-	-	Not Null	date

Table Name : dailytbl

Foreign key : username

Fieldname	**Datatype**	**Size**	**Constraints**	**Description**
uname	Varchar	50	Foreign key	Username
workhr	Varchar	50	Not Null	User work hours
sleephr	Varchar	50	Not Null	User sleep hours
sithr	Varchar	50	Not Null	User sit hours
resthr	Varchar	50	Not Null	User rest hours
height	Varchar	50	Not Null	User height
weight	Varchar	50	Not Null	User weight
BMI	Varchar	50	Not Null	bmi
Status	Varchar	50	Not Null	User status

Table Name : insufficiencytbl

Foreign key : username

Fieldname	**Datatype**	**Size**	**Constraints**	**Description**
Calories	Varchar	50	Not Null	Calories insufficiency
Protein	Varchar	50	Not Null	Protein insufficiency
carbo	Varchar	50	Not Null	Carbohydratesinsuffiency
pott	Varchar	50	Not Null	Potassium insufficiency
Iron	Varchar	50	Not Null	Iron insufficiency
Cal	Varchar	50	Not Null	Calcium insufficiency
Vitamin A	Varchar	50	Not Null	Vitamin A insufficiency
Vitamin B	Varchar	50	Not Null	Vitamin B insuffiency
Vitamin C	Varchar	50	Not Null	Vitamin C insuffiency
Uname	Varchar	50	Foreign key	Username
Date	-	-	Not Null	date

Table Name : totcaltbl

Foreign key : username

Fieldname	**Datatype**	**Size**	**Constraints**	**Description**
Calories	Varchar	50	Not Null	Total calories
Protein	Varchar	50	Not Null	Total protein
carbo	Varchar	50	Not Null	Total carbohydrates
pott	Varchar	50	Not Null	Total pottassium
Iron	Varchar	50	Not Null	Total iron
Cal	Varchar	50	Not Null	Total calcium
Vitamin A	Varchar	50	Not Null	Total vitamin A
Vitamin B	Varchar	50	Not Null	Total vitamin B
Vitamin C	Varchar	50	Not Null	Total vitamin C
Uname	Varchar	50	Foreign key	Username

Date	-	-	Not Null	date

Table name : userdet

Primary key: username

Fieldname	Datatype	Size	Constraints	Description
Id	Varchar	50	Not Null	User id
Name	Varchar	50	Not Null	Username
Gender	Varchar	50	Not Null	User gender
Ph	Varchar	50	Not Null	User phone no
Email	Varchar	50	Not Null	User email
Uname	Varchar	50	Primary key	Username
Pwd	Varchar	50	Not Null	User password
Age	Varchar	50	Not Null	User age

6. ABOUT SOFTWARE

6.1 ABOUT ASP.NET

Asp.net is a server-side web application framework designed for web development to produce dynamic web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, web applications and web services. It was first released in January 2002 with version 1.0 of the.net framework, and is the successor to Microsoft's active server pages (asp) technology. Asp.net is built on the common language runtime(clr), allowing programmers to write asp.net code using any supported .net language. The asp.net soap extension framework allows asp.net components to process soap messages.

After four years of development, and a series of beta releases in 2000 and 2001, asp.net 1.0 was released on January 5, 2002 as part of version 1.0 of the .net framework. Even prior to the release, dozens of books had been written about asp.net, and Microsoft promoted it heavily as part of its platform for web services. Scott Guthrie became the product unit manager for asp.net, and development continued apace, with version 1.1 being released on April 24, 2003 as a part of windows server 2003. This release focused on improving asp. Net's support for mobile devices.

Characteristics

Asp.net web pages, known officially as web forms, are the main building blocks for application development. web forms are contained in files with a ".aspx" extension; these files typically contain static (x)html markup, as well as markup defining server-side web controls and user controls where the developers place all the rccontent[further explanation needed] for the web page. Additionally, dynamic code which runs on the server can be placed in a page within a block <% -- dynamic code -- %>, which is similar to other web development technologies such as php, jsp, and asp. With asp.net framework 2.0, Microsoft introduced a new code-behind model which allows static text to remain on the .aspx page, while dynamic code remains in an .aspx.vbor .aspx.cs or .aspx.fs file (depending on the programming language used).

Directives

A directive is a special instruction on how asp.net should process the page.the most common directive is <%@ page %> which can specify many attributes used by the asp.net page parser and compiler.

Examples

Inline code[edit source | editbeta]

```
<%@ page language="c#" %>
<!Doctype html public "---//w3c//dtdxhtml1.0  //en"
"http://www.w3.org/tr/xhtml1/dtd/xhtml1-transitional.dtd">
<script runat="server">
  protected void page_load(object sender, eventargs e)
{    // assign the datetime to label control
```

```
   lbl1.text = datetime.now.tolongtimestring();
  }
</script>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
<title>sample page</title>
</head>
<body>
<form id="form1" runat="server">
```

Code-behind solutions[edit source | editbeta]

```
<%@ page language="c#" codefile="samplecodebehind.aspx.cs"
inherits="website.samplecodebehind"
Autoeventwireup="true" %>
```

The above tag is placed at the beginning of the aspx file. The codefile property of the @ page directive specifies the file (.cs or .vbor .fs) acting as the code-behind while the inherits property specifies the class from which the page is derived. In this example, the @ page directive is included in samplecodebehind.aspx, then (samplecodebehind.aspx.cs) acts as the code-behind for this page:

Source language c#:

```
Using system;
Namespace website
{
  public partial class samplecodebehind :system.web.ui.page
  {
    protected void page_load(object sender, eventargs e)
    {
response.write("hello, world");
    }
  }
}
```

Source language visual basic.net:

```
Imports system
Namespace website
  public partial class samplecodebehind
        inherits system.web.ui.page
        protected sub page_load(byval sender as object, byval e as eventargs)
response.write("hello, world")
        end sub
  end class
End namespace
```

In this case, the page_load() method is called every time the aspx page is requested. The programmer can implement event handlers at several stages of the page execution process to perform processing.

User controls

User controls are encapsulations of sections of pages which are registered and used as controls in asp.net, etc.

Custom controls

Programmers can also build custom controls for asp.net applications. Unlike user controls, these controls do not have an ascxmarkup file, having all their code compiled into a dynamic link library (dll) file. Such custom controls can be used across multiple web applications and visual studio projects.

Rendering technique

Asp.net uses a visited composites rendering technique. During compilation, the template (.aspx) file is compiled into initialization code which builds a control tree (the composite) representing the original template. Literal text goes into instances of the literal control class, and server controls are represented by instances of a specific control class. The initialization code is combined with user-written code (usually by the assembly of multiple partial classes) and results in a class specific for the page. The page doubles as the root of the control tree.

Actual requests for the page are processed through a number of steps. First, during the initialization steps, an instance of the page class is created and the initialization code is executed. This produces the initial control tree which is now typically manipulated by the methods of the page in the following steps. As each node in the tree is a control represented as an instance of a class, the code may change the tree structure as well as manipulate the properties/methods of the individual nodes. Finally, during the rendering step a visitor is used to visit every node in the tree, asking each node to render itself using the methods of the visitor. The resulting html output is sent to the client.

After the request has been processed, the instance of the page class is discarded and with it the entire control tree. This is a source of confusion among novice asp.net programmers who rely on the class instance members that are lost with every page request/response cycle.

State management

Asp.net applications are hosted by a web server and are accessed using the stateless http protocol. As such, if an application uses state full interaction, it has to implement state management on its own. Asp.net provides various functions for state management. Conceptually, Microsoft treats "state" as gui state. Problems may arise if an application needs to keep track of "data state"; for example, a finite-state machines which may be in a transient state between requests (lazy evaluation) or which takes a long time to initialize. State management in asp.net pages with authentication can make web scraping difficult or impossible.

Application

Application state is held by a collection of shared user-defined variables. These are set and initialized when the application_onstart event fires on the loading of the first instance of the application and are available until the last instance exits. Application state variables are accessed using the applications collection, which provides a wrapper for the application state. Application state variables are identified by name.

Session state

Server-side session state is held by a collection of user-defined session variables that are persistent during a user session. These variables, accessed using the session collection, are unique to each session instance. The variables can be set to be automatically destroyed after a defined time of inactivity even if the session does not end. Client-side user session is maintained by either a cookie or by encoding the session id in the url itself.

Asp.net supports three modes of persistence for server-side session variables:

In-process mode

The session variables are maintained within the asp.net process. This is the fastest way; however, in this mode the variables are destroyed when the asp.net process is recycled or shut down.

Asp state mode

Asp.net runs a separate windows service that maintains the state variables. Because state management happens outside, the asp.net process, and because the asp.net engine accesses data using .net removing, asp state is slower than in-process. This mode allows an asp.net application to be load-balanced and scaled across multiple servers. Because the state management service runs independently of asp.net, the session variables can persist across asp.net process shutdowns. However, since session state server runs as one instance, it is still one point of failure for session state. The session-state service cannot be load-balanced, and there are restrictions on types that can be stored in a session variable.

6.2 ABOUT C#

C# has a unified type system. This unified type system is called Common Type System (CTS). A unified type system implies that all types, including primitives such as integers, are subclasses of the class. For example, every type inherits a method.

C# is a modern, general-purpose object oriented programming language developed by Microsoft and approved by Ecma and ISO.

C# was developed by Anders Hejlsberg and his team during the development of .Net Framework.

C# is designed for Common Language Infrastructure (CLI), which consists of the executable code and runtime environment that allows use of various high-level languages to be used on different computer platforms and architectures.

The following reasons make C# a widely used professional language:

Modern, general purpose programming language

Object oriented.

Component oriented.

Easy to learn.

Structured language.

It produces efficient programs.

It can be compiled on a variety of computer platforms.

Part of .Net Framework.

Strong Programming Features of C#

Although C# constructs closely follows traditional high level languages C and C++ and being an object oriented programming language, it has strong resemblance with Java, it has numerous strong programming features that make it endearing to multitude of programmers worldwide.

Following is the list of few important features:

Boolean Conditions

Automatic Garbage Collection

Standard Library

Assembly Versioning

Properties and Events

Delegates and Events Management

Easy to use Generics

Indexers

Conditional Compilation

Simple Multithreading

LINQ and Lambda Expressions

Integration with Windows

Categories of data types

CTS separates data types into two categories:

Value types

Reference types

Instances of value types do not have referential identity nor referential comparison semantics - equality and inequality comparisons for value types compare the actual data values within the instances, unless the corresponding operators are overloaded. Value types are derived from , always have a default value, and can always be created and copied. Some other limitations on value types are that they cannot derive from each other (but can implement interfaces) and cannot have an explicit default (parameterless) constructor. Examples of value types are all primitive types, such as (a signed 32-bit integer), (a 32-bit IEEE floating-point number), (a 16-bit Unicode code unit), and (identifies a specific point in time with nanosecond precision). Other examples are (enumerations) and (user defined structures).

In contrast, reference types have the notion of referential identity - each instance of a reference type is inherently distinct from every other instance, even if the data within both instances is the same. This is reflected in default equality and inequality comparisons for reference types, which test for referential rather than structural equality, unless the corresponding operators are overloaded (such as the case for). In general, it is not always possible to create an instance of a reference type, nor to copy an existing instance, or perform a value comparison on two existing instances, though specific reference types can provide such services by exposing a public constructor or implementing a corresponding interface (such as or). Examples of reference types are (the ultimate base class for all other C# classes), (a string of Unicode characters), and (a base class for all C# arrays).

Both type categories are extensible with user-defined types.

Boxing and unboxing

Boxing is the operation of converting a value-type object into a value of a corresponding reference type. Boxing in C# is implicit.

Unboxing is the operation of converting a value of a reference type (previously boxed) into a value of a value type. Unboxing in C# requires an explicit type cast. A boxed object of type T can only be unboxed to a T (or a nullable T).

Example:

```
int foo = 42;         // Value type.
object bar = foo;     // foo is boxed to bar.
int foo2 = (int)bar;  // Unboxed back to value type.
```

Preprocessor

C# features "preprocessor directives" (though it does not have an actual preprocessor) based on the C preprocessor that allow programmers to define symbols, but not macros. Conditionals such as , , and are also provided. Directives such as give hints to editors for code folding.

```
public class Foo
{
   #region Constructors
   public Foo() {}
   public Foo(int firstParam) {}
   #endregion
    #region Procedures
   public void IntBar(int firstParam) {}
   public void StrBar(string firstParam) {}
   public void BoolBar(bool firstParam) {}
   #endregion
}
```

Code comments

C# utilizes a double slash to indicate the rest of the line is a comment. This is inherited from C++.

```
public class Foo

{

   // a comment

   public static void Bar(int firstParam) {}  // also a comment

}
```

Multi-line comments can start with slash-asterisk and end asterisk-slash . This is inherited from standard C.

```
public class Foo

{

   /* A Multi-Line

comment  */

   public static void Bar(int firstParam) {}

}
```

XML documentation system

C#'s documentation system is similar to Java's Avado, but based on XML. Two methods of documentation are currently supported by the C# compiler.

Single-line documentation comments, such as those commonly found in Visual Studio generated code, are indicated on a line beginning with .

```
public class Foo
{
    /// <summary>A summary of the method.</summary>
    /// <param name="firstParam">A description of the parameter.</param>
    /// <remarks>Remarks about the method.</remarks>
    public static void Bar(int firstParam) {}
}
```

Multi-line documentation comments, while defined in the version 1.0 language specification, were not supported until the .NET 1.1 release. These comments start with slash-asterisk-asterisk and end asterisk-slash

```
public class Foo
{
    /** <summary>A summary of the method.</summary>
     *  <param name="firstParam">A description of the parameter.</param>
     *  <remarks>Remarks about the method.</remarks> */
    public static void Bar(int firstParam) {}
}
```

Note there are some stringent criteria regarding white space and XML documentation when using the slash/asterisk/asterisk () technique.

This code block:

```
/**
```

```
 * <summary>
 * A summary of the method.</summary>*/
```

produces a different XML comment from this code block:

```
/**
 * <summary>
   A summary of the method.</summary>*/
```

Syntax for documentation comments and their XML markup is defined in a non-normative annex of the ECMA C# standard. The same standard also defines rules for processing of such comments, and their transformation to a plain XML document with precise rules for mapping of CLI identifiers to their related documentation elements. This allows any C# IDE or other development tool to find documentation for any symbol in the code in a certain well-defined way.

The effect is to write the following text to the output console:

```
Hello world!
```

Each line has a purpose:

```
using System;
```

The above line of code tells the compiler to use System as a candidate prefix for types used in the source code. In this case, when the compiler sees use of the Console type later in the source code, it tries to find a type named Console, first in the current assembly, followed by all referenced assemblies. In this case the compiler fails to find such a type, since the name of the type is actually System.Console. The compiler then attempts to find a type named System.Console by using the System prefix from the statement, and this time it succeeds. The statement allows the programmer to state all candidate prefixes to use during compilation instead of always using full type names.

```
class Program
```

```
}
```

Above is a class definition. Everything between the following pair of braces describes .

```
static void Main()
```

This declares the class member method where the program begins execution. The .NET runtime calls the method. (Note: may also be called from elsewhere, like any other method, e.g. from another method of .) The keyword makes the method accessible without an instance of . Each console application's entry point must be declared . Otherwise, the program would require an instance, but any instance would require a program. To avoid that irresolvable circular dependency, C# compilers processing console applications (like that above) report an error, if there is no method. The keyword declares that has no return value.

```
Console.WriteLine("Hello world!");
```

This line writes the output. is a static class in the namespace. It provides an interface to the standard input, output, and error streams for console applications. The program calls the method , which displays on the console a line with the argument, the string .

A GUI example:

```
using System.Windows.Forms;

 class Program

{

   static void Main()

   {

MessageBox.Show("Hello world!");

   }

}
```

This example is similar to the previous example, except that it generates a dialog box that contains the message "Hello world!" instead of writing it to the console.

Standardization and licensing

In August 2000, Microsoft Corporation, Hewlett-Packard and Intel Corporation co-sponsored the submission of specifications for C# as well as the Common Language Infrastructure (CLI) to the standards organization International. In December 2001, ECMA released ECMA-334 C# Language Specification. C# became an ISO standard in 2003 (ISO/IEC 23270:2003 - Information technology — Programming languages — C#). ECMA had previously adopted equivalent specifications as the 2nd edition of C#, in December 2002.

In June 2005, ECMA approved edition 3 of the C# specification, and updated ECMA-334. Additions included partial classes, anonymous methods, nullable types, and generics (similar to C++ templates).

In July 2005, ECMA submitted the standards and related TRs to ISO/IEC JTC 1 via the latter's Fast-Track process. This process usually takes 6–9 months.

The C# language definition and the CLI are standardized under ISO and Emma standards that provide reasonable and non-discriminatory licensing protection from patent claims. However, Microsoft uses C# and the CLI in its Base Class Library (BCL) that is the foundation of its proprietary .NET framework, and which provides a variety of non-standardized classes (extended I/O, GUI, Web services, etc.). Some cases where Microsoft patents apply to standards used in the .NET framework are documented by Microsoft and the applicable patents are available on either RAND terms or through Microsoft's Open Specification Promise that releases patent rights to the public, but there is some concern and debate as to whether there are additional aspects patented by Microsoft that are not covered, which may deter independent implementations of the full framework.

Microsoft has agreed not to sue open source developers for violating patents in non-profit projects for the part of the framework that is covered by the OSP. Microsoft has also agreed not to enforce patents relating to Novell products against Novell's paying customers with the exception of a list of products that do not explicitly mention C#, .NET or Novell's implementation of .NET (The Mono Project). However, Novell maintains that Mono does not infringe any Microsoft patents. Microsoft has also made a specific agreement not to enforce patent rights related to the Moonlight browser plugin, which depends on Mono, provided it is obtained through Novell.

6.3 ABOUT SQL SERVER

SQL Server is Microsoft's relational database management system (RDBMS). It is a full-featured database primarily designed to compete against competitors Oracle Database (DB) and MySQL.

Like all major RBDMS, SQL Server supports ANSI SQL, the standard SQL language. However, SQL Server also contains T-SQL, its own SQL implemention.SQL Server Management Studio (SSMS) (previously known as Enterprise Manager) is SQL Server's main interface tool, and it supports 32-bit and 64-bit environments.

SQL Server is sometimes referred to as MSSQL and Microsoft SQL Server.

Originally released in 1989 as version 1.0 by Microsoft, in conjunction with Sybase, SQL Server and its early versions were very similar to Sybase. However, the Microsoft-Sybase partnership dissolved in the early 1990s, and Microsoft retained the rights to the SQL Server trade name. Since then, Microsoft has released 2000, 2005 and 2008 versions, which feature more advanced options and better security.

Examples of some features include: XML data type support, dynamic management views (DMVs), full-text search capability and database mirroring.SQL Server is offered in several editions with different feature set and pricing options to meet a variety of user needs, including the following:

Enterprise: Designed for large enterprises with complex data requirements, data warehousing and Web-enabled databases. Has all the features of SQL Server, and its license pricing is the most expensive.

Standard: Targeted toward small and medium organizations. Also supports e-commerce and data warehousing.

Workgroup: For small organizations. No size or user limits and may be used as the backend database for small Web servers or branch offices.

Express: Free for distribution. Has the fewest number of features and limits database size and users. May be used as a replacement for an Access database.

Mainstream editions

Datacenter

SQL Server 2008 R2 Datacenter is the full-featured edition of SQL Server and is designed for datacenters that need the high levels of application support and scalability. It supports 256 logical processors and virtually unlimited memory. Comes with StreamInsight Premium edition. The Datacenter edition has been retired in SQL Server 2012, all its features are available in SQL Server 2012 Enterprise Edition.

Enterprise

SQL Server Enterprise Edition includes both the core database engine and add-on services, with a range of tools for creating and managing a SQL Server cluster. It can manage databases as large as 524 megabytes and address 2 terabytes of memory and supports 8 physical processors. SQL 2012 Enterprise Edition supports 160 Physical Processors

Standard

SQL Server Standard edition includes the core database engine, along with the stand-alone services. It differs from Enterprise edition in that it supports fewer active instances (number of nodes in a cluster) and does not include some high-availability functions such as hot-add memory (allowing memory to be added while the server is still running), and parallel indexes.

Web

SQL Server Web Edition is a low-TCO option for Web hosting.

Business Intelligence

Introduced in SQL Server 2012 and focusing on Self Service and Corporate Business Intelligence. It includes the Standard Edition capabilities and Business Intelligence tools: PowerPivot, Power View, the BI Semantic Model, Master Data Services, Data Quality Services and xVelocity in-memory analytics.

Workgroup

SQL Server Workgroup Edition includes the core database functionality but does not include the additional services. Note that this edition has been retired in SQL Server 2012.

Express

SQL Server Express Edition is a scaled down, free edition of SQL Server, which includes the core database engine. While there are no limitations on the number of databases or users supported, it is limited to using one processor, 1 GB memory and 4 GB database files (10 GB database files from SQL Server Express 2008 R2). It is intended as a replacement forMSDE. Two additional editions provide a superset of features not in the original Express Edition. The first is SQL Server Express with Tools, which includes SQL Server Management Studio Basic. SQL Server Express with Advanced Services adds full-text search capability and reporting services.

Specialized editions

Azure

Microsoft SQL Azure Database is the cloud-based version of Microsoft SQL Server, presented as software as a service on Azure Services Platform.

Compact (SQL CE)

The compact edition is an embedded database engine. Unlike the other editions of SQL Server, the SQL CE engine is based on SQL Mobile (initially designed for use with hand-held devices) and does not share the same binaries. Due to its small size (1 MB DLL footprint), it has a markedly reduced feature set compared to the other editions. For example, it supports a subset of the standard data types, does not support stored procedures or Views or multiple-statement batches (among other limitations). It is limited to 4 GB maximum database size and cannot be run as a Windows service, Compact Edition must be hosted by the application using it. The 3.5 version includes support for ADO.NET Synchronization Services. SQL CE does not support ODBC connectivity, unlike SQL Server proper.

Developer

SQL Server Developer Edition includes the same features as SQL Server 2012 Enterprise Edition, but is limited by the license to be only used as a development and test system, and not as production server. This edition is available to download by students free of charge as a part of Microsoft's DreamSpark program

Embedded (SSEE)

SQL Server 2005 Embedded Edition is a specially configured named instance of the SQL Server Express database engine which can be accessed only by certain Windows Services.

Evaluation

SQL Server Evaluation Edition, also known as the Trial Edition, has all the features of the Enterprise Edition, but is limited to 180 days, after which the tools will continue to run, but the server services will stop.

Fast Track

SQL Server Fast Track is specifically for enterprise-scale data warehousing storage and business intelligence processing, and runs on reference-architecture hardware that is optimized for Fast Track.

LocalDB

Introduced in SQL Server Express 2012, LocalDB is a minimal, on-demand, version of SQL Server that is designed for application developers.It can also be used as an embedded database.

Parallel Data Warehouse (PDW)

Data warehouse Appliance Edition

Pre-installed and configured as part of an appliance in partnership with Dell & HP base on the Fast Track architecture. This edition does not include SQL Server Integration Services, Analysis Services, or Reporting Services.

Architecture

The protocol layer implements the external interface to SQL Server. All operations that can be invoked on SQL Server are communicated to it via a Microsoft-defined format, called Tabular Data Stream (TDS). TDS is an application layer protocol, used to transfer data between a database server and a client. Initially designed and developed by Sybase Inc. for their Sybase SQL Serverrelational database engine in 1984, and later by Microsoft in Microsoft SQL Server, TDS packets can be encased in other physical transport dependent protocols, including TCP/IP, Named pipes, and Shared memory. Consequently, access to SQL Server is available over these protocols. In addition, the SQL Server API is also exposed over web services.

Data storage

Data storage is a database, which is a collection of tables with typed columns. SQL Server supports different data types, including primary types such as Integer, Float, Decimal, Char (including character strings), Varchar (variable length character strings), binary (for unstructured blobs of data), Text (for textual data) among others.
The rounding of floats to integers uses either Symmetric Arithmetic Rounding or Symmetric Round Down (Fix) depending on arguments: SELECT Round(2.5, 0) gives 3.

Microsoft SQL Server also allows user-defined composite types (UDTs) to be defined and used. It also makes server statistics available as virtual tables and views (called Dynamic Management Views or DMVs). In addition to tables, a database can also contain other objects including views, stored procedures, indexes and constraints, along with a transaction log. A SQL Server database can contain a maximum of 231 objects, and can span multiple OS-level files with a maximum file size of 260 bytes. The data in the database are stored in primary data files with an extension .mdf. Secondary data files, identified with a .ndf extension, are used to store optional metadata. Log files are identified with the .ldf extension.

Storage space allocated to a database is divided into sequentially numbered pages, each 8 KB in size. A page is the basic unit of I/O for SQL Server operations. A page is marked with a 96-byte header which stores metadata about the page including the page number, page type, free space on the page and the ID of the object that owns it. Page type defines the data contained in the page - data stored in the database, index, allocation map which holds information about how pages are allocated to tables and indexes, change map which holds information about the changes made to other pages since last backup or logging, or contain large data types such as image or text. While page is the basic unit of an I/O operation, space is actually managed in terms of anextent which consists of 8 pages. A database object can either span all 8 pages in an extent ("uniform extent") or share an extent with up to 7 more objects ("mixed extent"). A row in a database table cannot span more than one page, so is limited to 8 KB in size. However, if the data exceeds 8 KB and the row contains Varchar or Varbinary data, the data in those columns are moved to a new page (or possibly a sequence of pages, called an Allocation unit) and replaced with a pointer to the data.

For physical storage of a table, its rows are divided into a series of partitions (numbered 1 to n). The partition size is user defined; by default all rows are in a single partition. A table is split into multiple partitions in order to spread a database over a cluster. Rows in each partition are stored in either B-tree or heap structure. If the table has an associated index to allow fast retrieval of rows, the rows are stored in-order according to their index values, with a B-tree providing the index. The data is in the leaf node of the leaves, and other nodes storing the index values for the leaf data reachable from the respective nodes. If the index is non-clustered, the rows are not sorted according to the index keys. An indexed view has the same storage structure as an indexed table. A table without an index is stored in an unordered heap structure. Both heaps and B-trees can span multiple allocation units.

Buffer management

SQL Server buffers pages in RAM to minimize disc I/O. Any 8 KB page can be buffered in-memory, and the set of all pages currently buffered is called the buffer cache. The amount of memory available to SQL Server decides how many pages will be cached in memory. The buffer cache is managed by the Buffer Manager. Either reading from or writing to any page copies it to the buffer cache. Subsequent reads or writes are redirected to the in-memory copy, rather than the on-disc version. The page is updated on the disc by the Buffer Manager only if the in-memory cache has not been referenced for some time. While writing pages back to disc, asynchronous I/O is used whereby the I/O operation is done in a background thread so that other operations do not have to wait for the I/O operation to complete. Each page is written along with its checksum when it is written. When reading the page back, its checksum is computed again and matched with the stored version to ensure the page has not been damaged or tampered with in the meantime.

7. SYSTEM TESTING

Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test. Software testing can also provide an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation. Test techniques include, but are not limited to the process of executing a program or application with the intent of findingsoftware bugs (errors or other defects).

Development Testing is a software development process that involves synchronized application of a broad spectrum of defect prevention and detection strategies in order to reduce software development risks, time, and costs. It is performed by the software developer or engineer during the construction phase of the software development lifecycle. Rather than replace traditional QA focuses, it augments it. Development Testing aims to eliminate construction errors before code is promoted to QA; this strategy is intended to increase the quality of the resulting software as well as the efficiency of the overall development and QA process.Software testing can be stated as the process of validating and verifying that a computer program/application/product:

- meets the requirements that guided its design and development,
- works as expected,

- can be implemented with the same characteristics,
- and satisfies the needs of stakeholders.

  - White-box testing,
  - Black-box testing,
  - Unit testing,
  - Integration testing,
  - System testing,
  - Acceptance testing,
  - Validation testing

WHITE-BOX TESTING

White-box testing is a method of testing software that tests internal structures or workings of an application, as opposed to its functionality (i.e. black-box testing). In white-box testing an internal perspective of the system, as well as programming skills, are used to design test cases. The tester chooses inputs to exercise paths through the code and determine the appropriate outputs. This is analogous to testing nodes in a circuit, e.g. in-circuit testing (ICT).

While white-box testing can be applied at the unit, integration and system levels of the software testing process, it is usually done at the unit level. It can test paths within a unit, paths between units during integration, and between subsystems during a system–level test. Though this method of test design can uncover many errors or problems, it might not detect unimplemented parts of the specification or missing requirements.

BLACK-BOX TESTING

Black box testing is designed to validate functional requirements without regard to the internal workings of a program. Black box testing mainly focuses on the information domain of the software, deriving test cases by partitioning input and output in a manner that provides through test coverage. Incorrect and missing functions, interface errors, errors in data structures, error in functional logic are the errors falling in this category.

UNIT TESTING

unit testing is a method by which individual units of source code, sets of one or more computer program modules together with associated control data, usage procedures, and operating procedures, are tested to determine if they are fit for use. Intuitively, one can view a unit as the smallest testable part of an application. In procedural programming a unit could be an entire module but is more commonly an individual function or procedure. In object-oriented programming a unit is often an entire interface, such as a class, but could be an individual method. Unit tests are created by programmers or occasionally by white box testers during the development process.

Ideally, each test case is independent from the others: substitutes like method stubs, mock objects, fakes and test harnesses can be used to assist testing a module in isolation. Unit tests are typically written and run by software developers to ensure that code meets its design and behaves as intended. Its implementation can vary from being very manual (pencil and paper) to being formalized as part of build automation.

INTEGRATION TESTING:

Testing can be used in both software and hardware integration testing. The basis behind this type of integration testing is to run user-like workloads in integrated user-like environments. In doing the testing in this manner, the environment is proofed, while the individual components are proofed indirectly through their use. Usage Model testing takes an optimistic approach to testing, because it expects to have few problems with the individual components. The strategy relies heavily on the component developers to do the isolated unit testing for their product. The goal of the strategy is to avoid redoing the testing done by the developers, and instead flesh-out problems caused by the interaction of the components in the environment.

For integration testing, Usage Model testing can be more efficient and provides better test coverage than traditional focused functional integration testing. To be more efficient and accurate, care must be used in defining the user-like workloads for creating realistic scenarios in exercising the environment. This gives confidence that the integrated environment will work as expected for the target customers.

SYSTEM TESTING:

System testing takes, as its input, all of the "integrated" software components that have passed integration testing and also the software system itself integrated with any applicable hardware system(s). The purpose of integration testing is to detect any inconsistencies between the software units that are integrated together (called assemblages) or between any of the assemblages and the hardware. System testing is a more limited type of testing; it seeks to detect defects both within the "inter-assemblages" and also within the system as a whole.

ACCEPTANCE TESTING:

Acceptance test cards are ideally created during sprint planning or iteration planning meeting, before development begins so that the developers have a clear idea of what to develop. Sometimes acceptance tests may span multiple stories (that are not implemented in the same sprint) and there are different ways to test them out during actual sprints. One popular technique is to mock external interfaces or data to mimic other stories which might not be played out during iteration (as those stories may have been relatively lower business priority). A user story is not considered complete until the acceptance tests have passed.

VALIDATION TESTING:

Verification is intended to check that a product, service, or system (or portion thereof, or set thereof) meets a set of initial design specifications. In the development phase, verification procedures involve performing special tests to model or simulate a portion, or the entirety, of a product, service or system, then performing a review or analysis of the modeling results. In the post-development phase, verification procedures involve regularly repeating tests devised specifically to ensure that the product, service, or system continues to meet the initial design requirements, specifications, and regulations as time progresses. It is a process that is used to evaluate whether a product, service, or system complies with regulations, specifications, or conditions imposed at the start of a development phase. Verification can be in development, scale-up, or production. This is often an internal process.

7.2 TEST CASE

A test case normally consists of a unique identifier, requirement references from a design specification, preconditions, events, a series of steps (also known as actions) to follow, input, output, expected result, and actual result. Clinically defined a test case is an input and an expected result.This can be as pragmatic as 'for condition x your derived result is y', whereas other test cases described in more detail the input scenario and what results might be expected. It can occasionally be a series of steps (but often steps are contained in a separate test procedure that can be exercised against multiple test cases, as a matter of economy) but with one expected result or expected outcome.

The optional fields are a test case ID, test step, or order of execution number, related requirement(s), depth, test category, author, and check boxes for whether the test is automatable and has been automated. Larger test cases may also contain prerequisite states or steps, and descriptions. A test case should also contain a place for the actual result. These steps can be stored in a word processor document, spreadsheet, database, or other common repository. In a database system, you may also be able to see past test results, who generated the results, and what system configuration was used to generate those results. These past results would usually be stored in a separate table.

8. IMPLEMENTATION

System implementation generally benefits from high levels of user involvement and management support. User participation in the design and operation of information systems has several positive results. First, if users are heavily involved in systems design, they move opportunities to mold the system according to their priorities and business requirements, and more opportunities to control the outcome. Second, they are more likely to react positively to the change process. Incorporating user knowledge and expertise leads to better solutions.

The relationship between users and information systems specialists has traditionally been a problem area for information systems implementation efforts. Users and information systems specialists tend to have different backgrounds, interests, and priorities. This is referred to as the user-designer communications gap. These differences lead to divergent organizational loyalties, approaches to problem solving, and vocabularies

Conversions to new systems often get off track because companies fail to plan the project realistically or they don’t execute or manage the project by the plan. Remember that major systems conversions are not just IT projects. Companies should maintain joint responsibility with the vendor in the project-planning process, maintenance of the project-plan status, as well as some degree of control over the implementation.

All key user departments should have representation on the project team, including the call center, website, fulfillment, management, merchandising, inventory control, marketing and finance. Team members should share responsibilities for conversion, training and successful completion of the project tasks.

The software vendor should have a time-tested project methodology and provide a high-level general plan. As the merchant client, your job is to develop the detailed plan with the vendor, backed up with detail tasks and estimates.

For example, a generalized plan may have a list of system modifications, but lack the details that need to be itemized. These may include research, specifications, sign-offs, program specs, programming, testing and sign-off, and the various levels of testing and program integration back into the base system.

Plan for contingencies, and try to keep disruptions to the business to a minimum. We have seen systems go live and with management initially unable to get their most frequently used reports — this can be a big problem.

The systems project should have a senior manager who acts as the project sponsor. The project should be reviewed periodically by the steering committee to track its progress. This ensures that senior management on down to the department managers are committed to success.

Once you have a plan that makes sense, make sure you manage by the plan. This sounds elementary, but many companies and vendors stumble on it.

Early in the project publish a biweekly status report. Once you get within a few months, you may want to have weekly conference call meetings and status updates. Within 30 days of “go live,” hold daily meetings and list what needs to be achieved.

Project management is the discipline of planning, organizing, motivating, and controlling resources to achieve specific goals. A project is a temporary endeavor with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value. The temporary nature of projects stands in contrast with business as usual (or operations), which are repetitive, permanent, or semi-permanent functional activities to produce products or services. In practice, the management of these two systems is often quite different, and as such requires the development of distinct technical skills and management strategies.

The primary challenge of project management is to achieve all of the project goals and objectives while honoring the preconceived constraints. The primary constraints are scope, time, quality and budget. The secondary —and more ambitious— challenge is to optimize the allocation of necessary inputs and integrate them to meet pre-defined objectives.

Documentation:

Requirements come in a variety of styles, notations and formality. Requirements can be goal-like (e.g., distributed work environment), close to design (e.g., builds can be started by right-clicking a configuration file and select the 'build' function), and anything in between. They can be specified as statements in natural language, as drawn figures, as detailed mathematical formulas, and as a combination of them all.

A good architecture document is short on details but thick on explanation. It may suggest approaches for lower level design, but leave the actual exploration trade studies to other documents.

It is very important for user documents to not be confusing, and for them to be up to date. User documents need not be organized in any particular way, but it is very important for them to have a thorough index.

Change Management within ITSM (as opposed to software engineering or project management) is often associated with ITIL, but the origins of change as an IT management process predate ITIL considerably, at least according to the IBM publication A Management System for the Information Business.

In the ITIL framework, Change Management is a part of "Service Transition" - transitioning something newly developed (i.e. an update to an existing production environment or deploying something entirely new) from the Service Design phase into Service Operation (AKA Business

As Usual) and aims to ensure that standardized methods and procedures are used for efficient handling of all changes.

8.1 SYSTEM INSTALLATION:

Installation performed without using a computer monitor connected. In attended forms of headless installation, another machine connects to the target machine (for instance, via a local area network) and takes over the display output. Since a headless installation does not need a user at the location of the target computer, unattended headless installers may be used to install a program on multiple machines at the same time.

An installation process that runs on a preset time or when a predefined condition transpires, as opposed to an installation process that starts explicitly on a user's command. For instance, a system willing to install a later version of a computer program that is being used can schedule that installation to occur when that program is not running. An operating system may automatically install a device driver for a device that the user connects. (See plug and play.) Malware may also be installed automatically. For example, the infamous Conficker was installed when the user plugged an infected device to his computer.

8.2 USER TRAININGS:

It forms the core of apprenticeships and provides the backbone of content at institutes of technology (also known as technical colleges or polytechnics). In addition to the basic training required for a trade, occupation or profession, observers of the labor-marketrecognize as of 2008 the need to continue training beyond initial qualifications: to maintain, upgrade and update skills throughout working life. People within many professions and occupations may refer to this sort of training as professional development.

- Training Tips
    - Train people in groups, with separate training programs for distinct groups
    - Select the most effective place to conduct the training
    - Provide for learning by hearing, seeing, and doing
    - Prepare effective training materials, including interactive tutorials

    Rely on previous trainees

Convert a subset of the database. Apply incremental updates on the new system or the old system to synchronize the updates taking place. Use this method when the system is deployed in releases. For example, updates are applied to the old system if a pilot project is applying updates against the new system so that areas outside the pilot have access to the data.

Some commentators use a similar term for workplace learning to improve performance: "training and development". There are also additional services available online for those who wish to receive training above and beyond that which is offered by their employers. Some examples of these services include career counseling, skill assessment, and supportive services. One can generally categorize such training as on-the-job or off-the-job:

On-the-job training method takes place in a normal working situation, using the actual tools, equipment, documents or materials that trainees will use when fully trained. On-the-job training has a general reputation as most effective for vocational work. It involves Employee training at the place of work while he or she is doing the actual job. Usually a professional trainer (or sometimes an experienced employee) serves as the course instructor using hands-on training often supported by formal classroom training.

Off-the-job training method takes place away from normal work situations — implying that the employee does not count as a directly productive worker while such training takes place. Off-the-job training method also involves employee training at a site away from the actual work environment. It often utilizes lectures, case studies, role playing and simulation, having the advantage of allowing people to get away from work and concentrate more thoroughly on the training itself. This type of training has proven more effective in inculcating concepts and ideas.

- A more recent development in job training is the On the Job Training Plan, or OJT Plan. According to the United States Department of the Interior, a proper OJT plan should include: An overview of the subjects to be covered, the number of hours the training is expected to take, an estimated completion date, and a method by which the training will be evaluated.

9. CONCLUSION

Towards the conclusion, all the output has been verified as per the commitment. The HUIAR performed very well according to the expectations. All the output has been generated according to the given input. From the pre process itself the input dataset generated more information according to the interface. The High Utility Item set generated more appropriate results; in add with AR more hidden information has been revealed. The output has been verified with three different data types in various conditions.

Thus this project has been executed successfully and the output has been verified. All obtained outputs are according to committed in abstract. Initially more problems occurred during the architecture creation. As mentioned above architecture has been implemented successfully. All networks are working perfectly in the architecture. And these networks will works on independent process too. These features will make this project more successful and efficient. Displaying results will be more relevant. As mentioned in the abstract all the output has been verified.

10. FUTURE ENHANCEMENT

Even thou K-Mine have been implemented successfully, in future some enhancements can be done in this method. The system can be further enhanced by adding new features and facilities. Now the system is platform dependent and it can be made as platform independent software. If it is developed in oracle environment means, it is made as platform independent software, it is can be used by any intranet user of the shop. The system can be also be added with other data mining techniques such as K-nearest neighbours search, neural network and genetic algorithm to find some interesting patterns in the data base.

Some of the enhancements are follows:

Combining algorithm

The current system is working well, But we can combine K-Mine with A-priori algorithm for efficient data process. Also features can be enhanced.

Web data analysis

The current system is working under a single window platform. This can be enhanced to a web data analysis model. By using this method data analyst can fetch the data from online and K-Mine can be used anywhere at any time though internet.

Structure Improvement

Basically the current system works on decision tree, high utility item sets and top-k item set. In added with some architectures like hybrid or grid architecture has been implemented.

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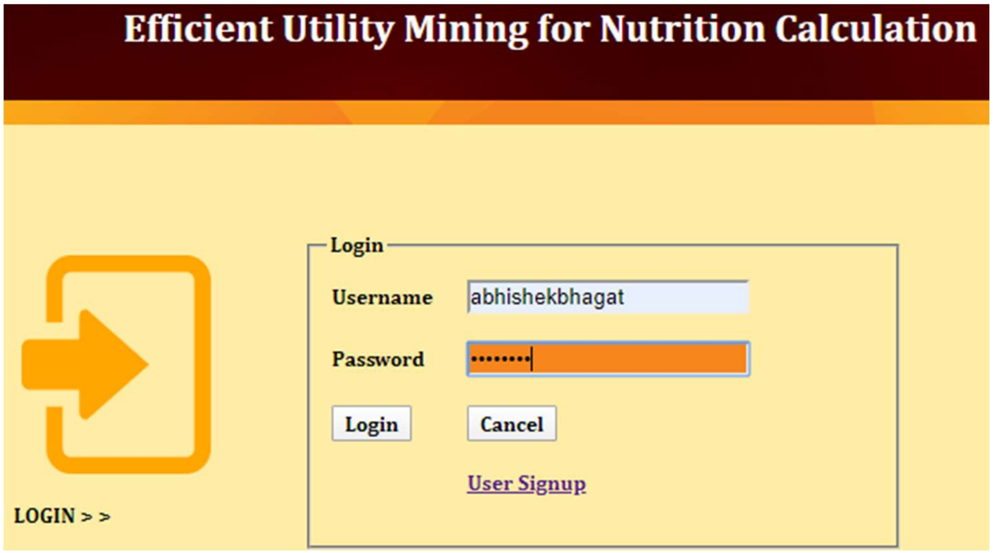
2. Jittery R.Shapiro, "The Complete Reference ASP.NET" Edition 2002, Tata McGraw-Hill, Publishing Company Limited, New Delhi.

3. Robert D.Schneider, JetteyR.Garbus, "Optimizing SQL Server", Second Edition, Pearson Education Asia, ISBN: 981-4035-20-3

WEBSITESREFFERED :

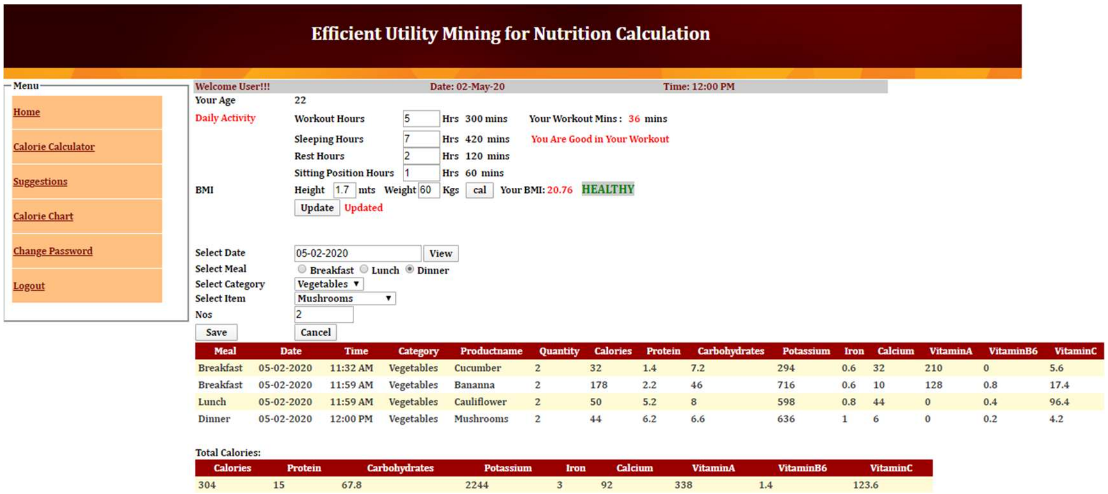
1. http://www.microsoft.com/dotnet/visual basic
2. http://www.dotnetheaven.com
3. http://www.codeproject.com
4. http://www.Planetcode.com
5. http://www.stackoverflow.com

12. SAMPLE SCREENSHOTS



Username abhishekbhagat

Password ••••••••



Welcome User!!! Date: 02-May-20 Time: 12:00 PM

Your Age	22		
Daily Activity	Workout Hours 5 Hrs 300 mins	Your Workout Mins : 36 mins	
	Sleeping Hours 7 Hrs 420 mins	You Are Good in Your Workout	
	Rest Hours 2 Hrs 120 mins		
	Sitting Position Hours 1 Hrs 60 mins		
BMI	Height 1.7 mts Weight 60 Kgs	Your BMI: 20.76	HEALTHY
	Updated		

Select Date 05-02-2020

Select Meal ○ Breakfast ○ Lunch ● Dinner

Select Category Vegetables

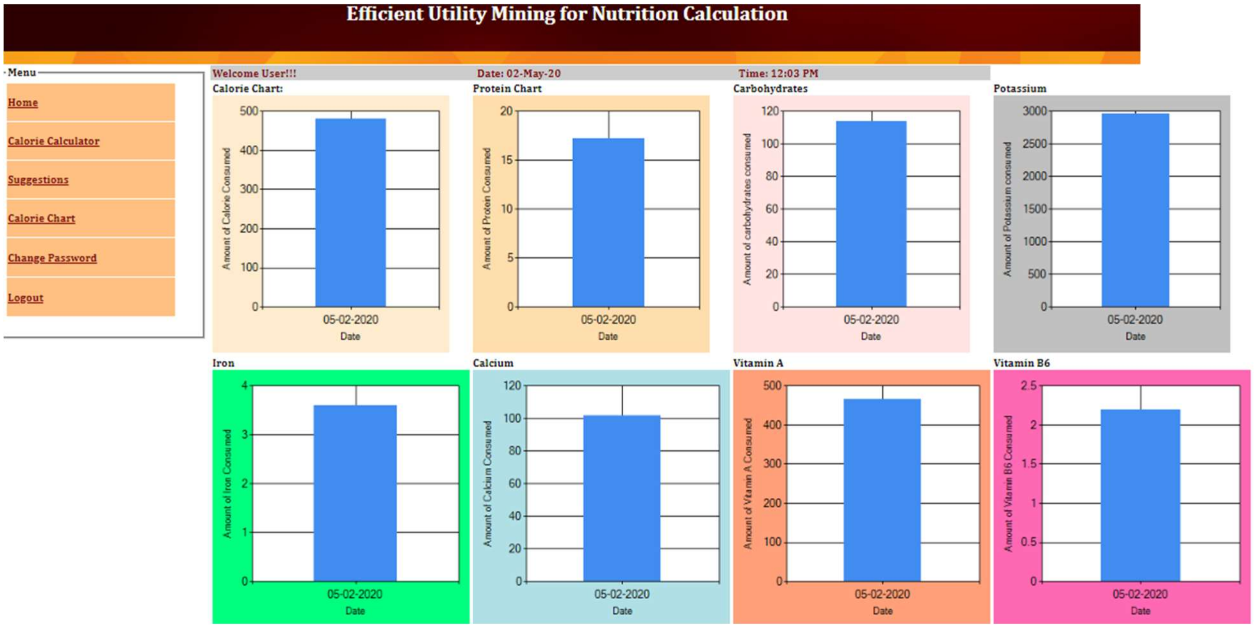
Select Item Mushrooms

Nos 2

Meal	Date	Time	Category	Productname	Quantity	Calories	Protein	Carbohydrates	Potassium	Iron	Calcium	VitaminA	VitaminB6	VitaminC
Breakfast	05-02-2020	11:32 AM	Vegetables	Cucumber	2	32	1.4	7.2	294	0.6	32	210	0	5.6
Breakfast	05-02-2020	11:59 AM	Vegetables	Bananna	2	178	2.2	46	716	0.6	10	128	0.8	17.4
Lunch	05-02-2020	11:59 AM	Vegetables	Cauliflower	2	50	5.2	8	598	0.8	44	0	0.4	96.4
Dinner	05-02-2020	12:00 PM	Vegetables	Mushrooms	2	44	6.2	6.6	636	1	6	0	0.2	4.2

Total Calories:

Calories	Protein	Carbohydrates	Potassium	Iron	Calcium	VitaminA	VitaminB6	VitaminC
304	15	67.8	2244	3	92	338	1.4	123.6



13. SAMPLE CODE

```
using System;

using System.Collections.Generic;

using System.Linq;

using System.Web;

using System.Web.UI;

using System.Web.UI.WebControls;

using System.Data.SqlClient;

using System.Drawing;

using System.Web.Configuration;

public partial class caloriecalculator :System.Web.UI.Page
```

```
{
SqlConnection con;
SqlCommandcmd;
    string query,a;
    protected void Page_Load(object sender, EventArgs e)
    {
        a = Session["user"].ToString();
data();
        query = "select age from userdet where uname='" + a.ToString() + "'";
cmd = new SqlCommand(query, con);
SqlDataReaderrd = cmd.ExecuteReader();
        while (rd.Read())
        {
lblage.Text = rd[0].ToString();
        }
rd.Close();
con.Close();
        if (!Page.IsPostBack)
        {
data();
            query = "select * from dailytab where uname='" + a.ToString() + "'";
```

```
cmd = new SqlCommand(query, con);

SqlDataReaderdr = cmd.ExecuteReader();

            while (dr.Read())

            {

txtworkout.Text = dr[1].ToString();

lblworkoutmins.Text = ((Convert.ToInt32(txtworkout.Text)) * 60).ToString();

txtsleeping.Text = dr[2].ToString();

lblsleepmins.Text = ((Convert.ToInt32(txtsleeping.Text)) * 60).ToString();

txtrest.Text = dr[3].ToString();

lblrestmins.Text = ((Convert.ToInt32(txtrest.Text)) * 60).ToString();

txtsitting.Text = dr[4].ToString();

lblsittingmins.Text = ((Convert.ToInt32(txtsitting.Text)) * 60).ToString();

txtheight.Text = dr[5].ToString();

txtweight.Text = dr[6].ToString();

lblbmi.Text = dr[7].ToString();

            }

dr.Close();

con.Close();

            double bmi = Convert.ToDouble(lblbmi.Text);

            if ((bmi>= 0.0) && (bmi<= 18.5))

            {
```

```
lblweightcal.Text = "UNDER WEIGHT";
lblweightcal.ForeColor = Color.Orange;

      }
      else if ((bmi>= 18.6) && (bmi<= 24.9))
      {
lblweightcal.Text = "HEALTHY";
lblweightcal.ForeColor = Color.Green;
      }
      else if ((bmi>= 25.0) && (bmi<= 29.9))
      {
lblweightcal.Text = "OVER WEIGHT";
lblweightcal.ForeColor = Color.Yellow;
      }
      else if ((bmi>= 30.0) && (bmi<= 40.0))
      {
lblweightcal.Text = "OBESE";
lblweightcal.ForeColor = Color.Red;
      }
    }
workcalculate();
```

```
    }
    public void data()
    {
        string connstring =
WebConfigurationManager.ConnectionStrings["connect"].ConnectionString;
        con = new SqlConnection(connstring);
con.Open();
    }
    protected void txtworkout_TextChanged(object sender, EventArgs e)
    {
lblworkoutmins.Text = ((Convert.ToInt32(txtworkout.Text)) * 60).ToString();
    }
    protected void txtsleeping_TextChanged(object sender, EventArgs e)
    {
lblsleepmins.Text = ((Convert.ToInt32(txtsleeping.Text)) * 60).ToString();
    }
    protected void txtrest_TextChanged(object sender, EventArgs e)
    {
lblrestmins.Text = ((Convert.ToInt32(txtrest.Text)) * 60).ToString();
    }
    protected void txtsitting_TextChanged(object sender, EventArgs e)
    {
lblsittingmins.Text=((Convert.ToInt32(txtsitting.Text)) * 60).ToString();
    }
    int per,currentworkout,needw;
    public void workcalculate()
    {
        per = Convert.ToInt32(lblsleepmins.Text) + Convert.ToInt32(lblrestmins.Text) +
Convert.ToInt32(lblsittingmins.Text);
        per = (per * 60) / 100;
        per = per / 10;
lblwork.Text = per.ToString();
currentworkout = Convert.ToInt32(lblworkoutmins.Text);
        if (currentworkout> per)
        {
lblworkoutack.Text = "You Are Good in Your Workout";
        }
        else if (currentworkout< per)
        {
needw = per - currentworkout;
lblworkoutack.Text = "Improve Your Workout by Working " + needw.ToString() + "mins
more";
        }
    }
    protected void Button1_Click(object sender, EventArgs e)
    {
lblbmi.Text = ((Convert.ToDecimal(txtweight.Text)) / ((Convert.ToDecimal(txtheight.Text)) *
(Convert.ToDecimal(txtheight.Text)))).ToString("0.##");
        double bmi = Convert.ToDouble(lblbmi.Text);
        if ((bmi>= 0.0) && (bmi<= 18.5))
        {
lblweightcal.Text = "UNDER WEIGHT";
lblweightcal.ForeColor = Color.Orange;

        }
        else if((bmi>= 18.6) && (bmi<= 24.9))
        {
lblweightcal.Text = "HEALTHY";
lblweightcal.ForeColor = Color.Green;
        }
        else if ((bmi>= 25.0) && (bmi<= 29.9))
        {
lblweightcal.Text = "OVER WEIGHT";
lblweightcal.ForeColor = Color.Yellow;
```

```
        }
        else if ((bmi>= 30.0) && (bmi<= 40.0))
        {
lblweightcal.Text = "OBESE";
lblweightcal.ForeColor = Color.Red;
        }
    }
    string pid,meal;
    decimal rowcount;
    decimal nos;
    decimal calorie, protein, carbo, potta, iron, calci, vitA, vitB6, vitC;
    protected void Button3_Click(object sender, EventArgs e)
    {
        if (txtdate.Text == "")
        {
lblack.Visible = true;
lblack.Text = "Please Select the date!!!";
        }
        else
        {
lblack.Visible = false;
```

```
            if (RadioButton1.Checked == true)
            {
                meal = "Breakfast";
            }
            else if (RadioButton2.Checked == true)
            {
                meal = "Lunch";
            }
            else if (RadioButton3.Checked == true)
            {
                meal = "Dinner";
            }
nos = Convert.ToDecimal(txtnos.Text);


data();
            query = "select * from datasetdet where Category='" + dropcategory.SelectedItem + "'
and Productname='" + dropitem.SelectedItem + "'";
cmd = new SqlCommand(query, con);
SqlDataReaderrd = cmd.ExecuteReader();
            while (rd.Read())
            {
                calorie = Convert.ToDecimal(rd[3]) * nos;

                protein = Convert.ToDecimal(rd[4]) * nos;

                carbo = Convert.ToDecimal(rd[5]) * nos;

potta = Convert.ToDecimal(rd[6]) * nos;

                iron = Convert.ToDecimal(rd[7]) * nos;

calci = Convert.ToDecimal(rd[8]) * nos;

vitA = Convert.ToDecimal(rd[9]) * nos;

                vitB6 = Convert.ToDecimal(rd[10]) * nos;

vitC = Convert.ToDecimal(rd[11]) * nos;

pid = rd[1].ToString();

            }

data();

            query = "insert into
caldata(Category,Productid,Productname,Calories,Protein,Carbohydrates,Potassium,Iron,Calciu
m,VitaminA,VitaminB6,VitaminC,quantity,uname,cdate,ctime,meal)values('" +
dropcategory.SelectedItem + "','" + pid + "','" + dropitem.SelectedItem + "'," + calorie + "," +
protein + "," + carbo + "," + potta + "," + iron + "," + calci + "," + vitA + "," + vitB6 + "," + vitC
+ "," + txtnos.Text + ",'" + Session["user"].ToString() + "','" + txtdate.Text + "','" +
System.DateTime.Now.ToShortTimeString() + "','" + meal + "')";

cmd = new SqlCommand(query, con);

cmd.ExecuteNonQuery();

con.Close();

data();
```

```
        query = "delete from totcal where uname='" + Session["user"].ToString() + "' and
cdate='" + txtdate.Text + "'";

cmd = new SqlCommand(query, con);

cmd.ExecuteNonQuery();

con.Close();



data();

        query = "select
sum(Calories),sum(Protein),sum(Carbohydrates),sum(Potassium),sum(Iron),sum(Calcium),sum(
VitaminA),sum(VitaminB6),sum(VitaminC) from caldata where uname='" +
Session["user"].ToString() + "' and cdate='" + txtdate.Text + "'";

cmd = new SqlCommand(query, con);

SqlDataReaderdr = cmd.ExecuteReader();

        while (dr.Read())

        {

data();

          query = "insert into
totcal(uname,Calories,Protein,Carbohydrates,Potassium,Iron,Calcium,VitaminA,VitaminB6,Vita
minC,cdate)values('" + Session["user"].ToString() + "'," + dr[0] + "," + dr[1] + "," + dr[2] + "," +
dr[3] + "," + dr[4] + "," + dr[5] + "," + dr[6] + "," + dr[7] + "," + dr[8] + ",'" + txtdate.Text + "')";

cmd = new SqlCommand(query, con);

cmd.ExecuteNonQuery();

con.Close();
```

```
        }
dr.Close();
con.Close();


        GridView1.DataBind();
        GridView2.DataBind();
        //average calc
rowcount = GridView1.Rows.Count;
data();
        query = "delete from averagetab where uname='" + Session["user"].ToString() + "' and
cdate='" + txtdate.Text + "'";
cmd = new SqlCommand(query, con);
cmd.ExecuteNonQuery();
con.Close();
data();
        query = "select * from totcal where uname='" + Session["user"].ToString() + "' and
cdate='" + txtdate.Text + "'";
cmd = new SqlCommand(query, con);
SqlDataReader red = cmd.ExecuteReader();
        while (red.Read())
        {
data();
          query = "insert into
averagetab(Calories,Protein,Carbohydrates,Potassium,Iron,Calcium,VitaminA,VitaminB6,Vitam
inC,uname,cdate)values(" + (Convert.ToDecimal(red[1]) / rowcount).ToString("0.##") + "," +
(Convert.ToDecimal(red[2]) / rowcount).ToString("0.##") + "," + (Convert.ToDecimal(red[3]) /
rowcount).ToString("0.##") + "," + (Convert.ToDecimal(red[4]) / rowcount).ToString("0.##") +
"," + (Convert.ToDecimal(red[5]) / rowcount).ToString("0.##") + "," +
(Convert.ToDecimal(red[6]) / rowcount).ToString("0.##") + "," + (Convert.ToDecimal(red[7]) /
rowcount).ToString("0.##") + "," + (Convert.ToDecimal(red[8]) / rowcount).ToString("0.##") +
"," + (Convert.ToDecimal(red[9]) / rowcount).ToString("0.##") + ",'" +
Session["user"].ToString() + "','" + txtdate.Text + "')";
cmd = new SqlCommand(query, con);
cmd.ExecuteNonQuery();
con.Close();
        }
red.Close();
con.Close();
       // GridView3.DataBind();
      }
   }
   protected void Button2_Click(object sender, EventArgs e)
   {
data();
```

```
        query = "update dailytab set workhr='" + txtworkout.Text + "',sleephr='" + txtsleeping.Text
+ "',resthr='" + txtrest.Text + "',sithr='" + txtsitting.Text + "',height='" + txtheight.Text +
"',weight='" + txtweight.Text + "',bmi='" + lblbmi.Text + "',status='" + lblweightcal.Text + "'
where uname='" + Session["user"].ToString() + "'";
cmd = new SqlCommand(query, con);
cmd.ExecuteNonQuery();
con.Close();
        lblack0.Visible = true;
        lblack0.Text = "Updated";
    }
    protected void txtdate_TextChanged(object sender, EventArgs e)
    {
        GridView1.DataBind();
        GridView2.DataBind();
      //  GridView3.DataBind();
    }
    protected void Button5_Click(object sender, EventArgs e)
    {
        GridView1.DataBind();
        GridView2.DataBind();
       // GridView3.DataBind();
    }}
```