A Project Report

on

Fitofy : A Web and Android based fitness application

Submitted in partial fulfillment of the
requirement for the award of the degree of

Bachelor of Technology in Computer Science and

Engineering

GALGOTIAS UNIVERSITY

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

Under The Supervision of
Mr. P. Raja Kumar
Assistant Professor
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SCHOOL OF COMPUTING SCIENCE AND ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
GALGOTIAS UNIVERSITY, GREATER NOIDA
INDIA
December, 2021

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING
GALGOTIAS UNIVERSITY, GREATER NOIDA
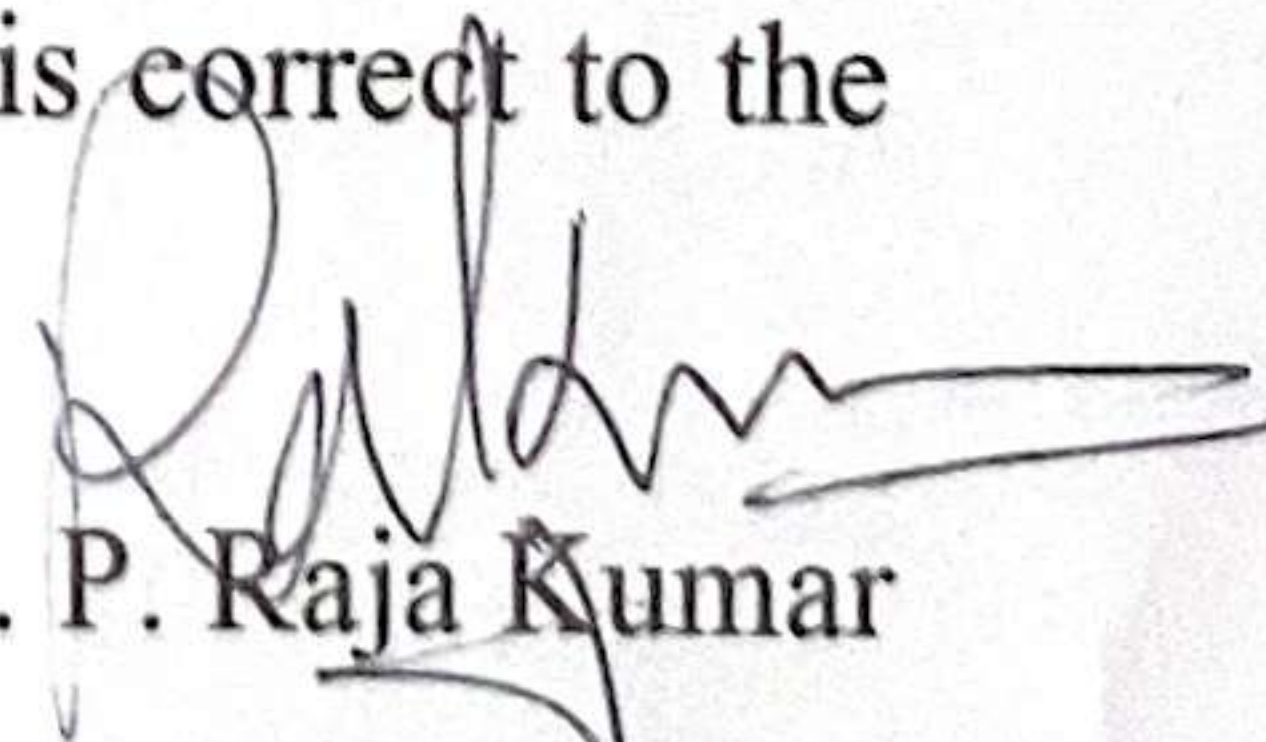
CANDIDATE'S DECLARATION

We hereby certify that the work which is being presented in the project, entitled **"Fitofy: A Web and Android based fitness application"** in partial fulfillment of the requirements for the award of the Bachelor of Technology submitted in the School of Computing Science and Engineering of Galgotias University, Greater Noida, is an original work carried out during the period of July, 2021 to December and 2021, under the supervision of Mr. P. Raja Kumar, Assistant Professor, Department of Computer Science and Engineering, Galgotias University, Greater Noida

The matter presented in the project has not been submitted by us for the award of any other degree of this or any other places.

Ankita Kumari, 18SCSE1010396
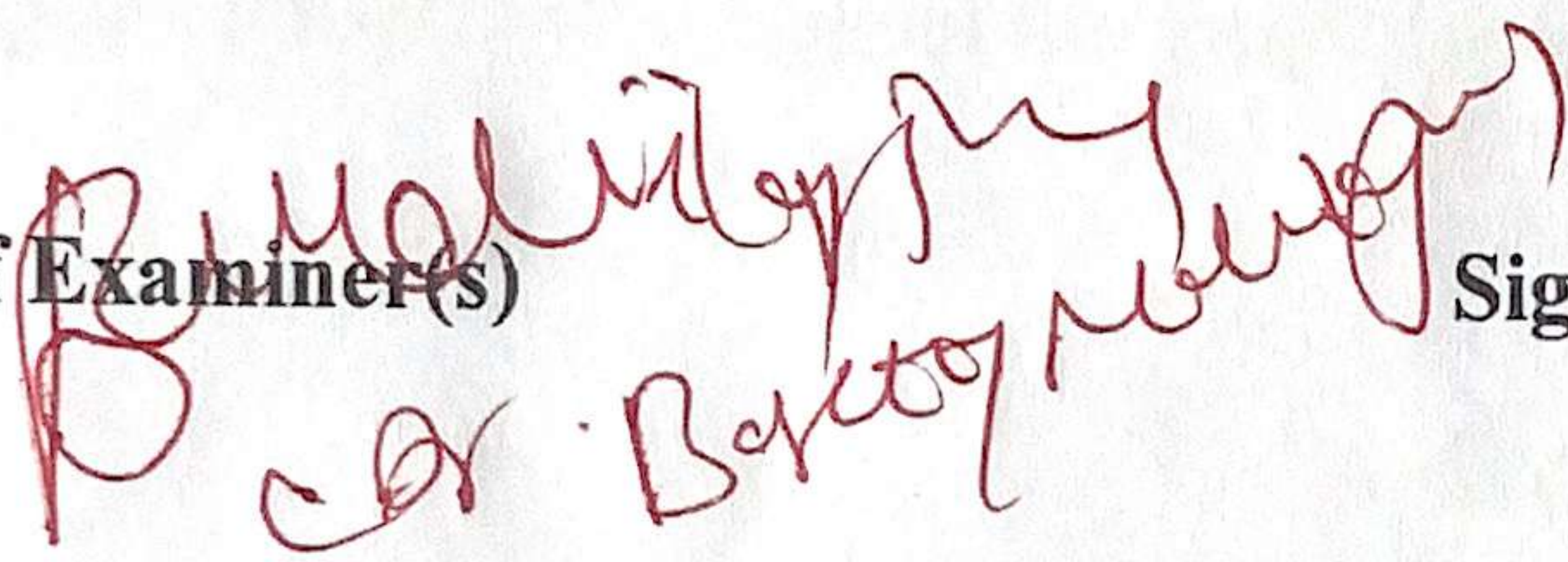
Nihal Kumar 18SCSE1010462

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

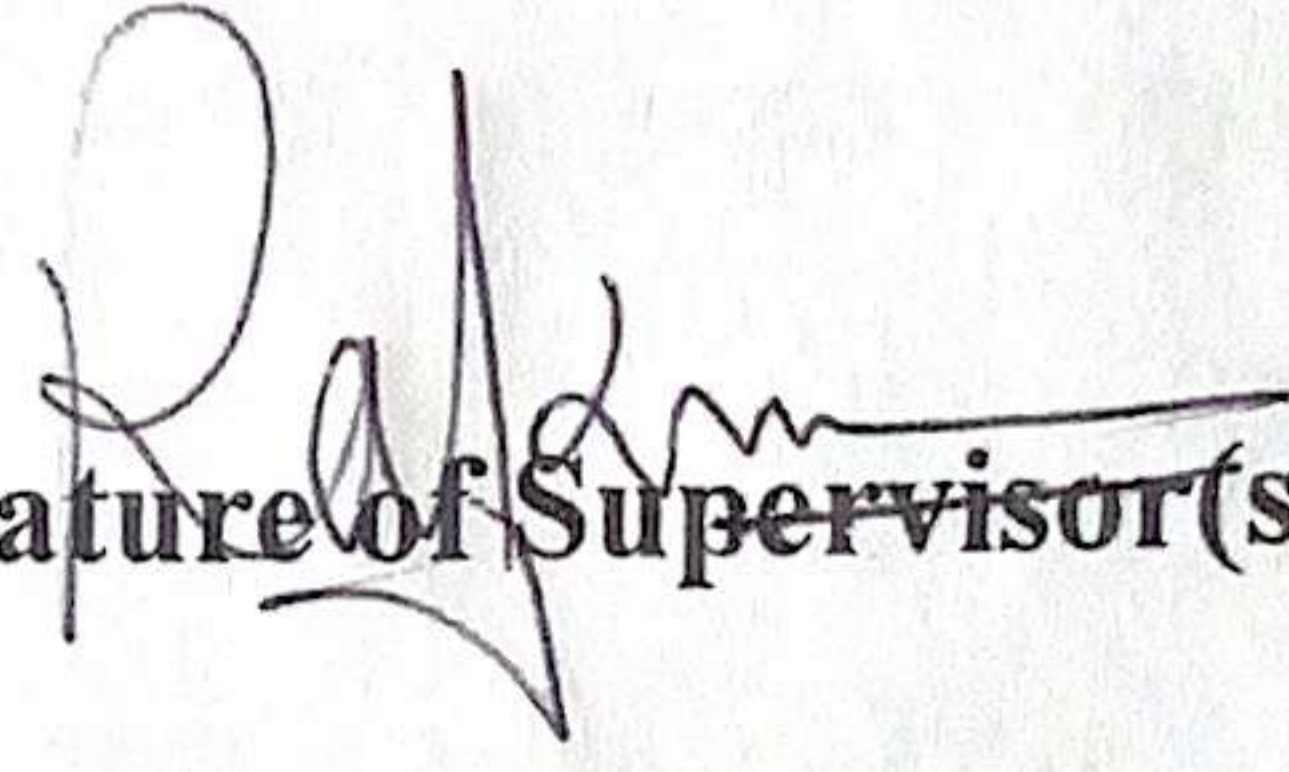Mr. P. Raja Kumar

Assistant Professor

CERTIFICATE

The Final Project Viva-Voice examination of Student 1 Name: Ankita Kumari, Admission No: 18SCSE1010396, Student 2 Name: Nihal Kumar, Admission No: 18SCSE1010462 has been held on ___18|12|2021___ and his/her work is recommended for the award of Bachelor of Technology in Computer Science and Engineering.

Signature of Examiner(s)   Signature of Supervisor(s)

Signature of Project Coordinator   **Signature of Dean**

Date: December, 2021

Place: Greater Noida

Dean School of Computing Science
& Engineering
GALGOTIAS UNIVERSITY
UTTAR PRADESH

Acknowledgement

We would like to express our deep and sincere gratitude to our reviewers for positive response towards our project. We are extremely grateful to our project's guide, Mr. P. Raja Kumar Sir for providing vital guidance throughout the project. The team members helped each other throughout the project and project has been completed successfully with expected outputs.

Ankita Kumari (18SCSE1010396)

Nihal Kumar (18SCSE1010462)

Abstract

Fitness has always been the center of attraction for the people of all age group, starting from young ones to the older ones, from many ages. Being healthy helps our body to be fit and mold our body into proper shape and this idea inspired us to why not present something to people through which they can shape their body in proper texture and remain fit by followingthe diet plan according to one's body weight and also which is easy to access by everyone.

Over recent years the world has seen a spike in the download and usage of fitness and health apps. In 2014 fitness app usage grew at a substantial rate, being up there as the most used category of application for that year. Since then it has maintained its user base and continues to grow, with the inclusion of wearables like google fit, Fitbit and Healthkit. This is the dawn of a new era, an era where people look more to their mobiles or their fitness watches to check on their health, rather than the traditional method of going and seeing a doctor. These apps provide a great avenue for those who are interested on tracking their fitness levels runners, cyclists, and gym goers alike. Everything can be tracked nowadays, even the standard iPhone comes with a health app built in, with a range of features.

There are several highly successful fitness apps on the market, some of these include mapmyrun, mapmyride, and the FitBit app. Both mapmyrun and mapmyride are made

by the same group and are simple route trackers for running and cycling. Once your journey is finished the app then gives detailed statistics of the route and calories burned. The FitBit app is one that I use, it works in tandem with a wearable FitBit, which tracks your steps and monitors your heart rate.

But all of these apps although state of the art, have one thing in common, they are jam packed with irrelevant features which take away from the initial idea and distract the user. I for one when working out want a hassle-free interaction with an application, I want to get in there and get it done.

This Web and Android fitness application have personalized work out plans as well as dietplans to be healthy or follow a healthy routine. This fitness application is designed to counterfeit a smart way to do exercises which one may perform varying to the masses of muscles to be healthy and fit. This fitness application is powered byworld class workout and diet plans which can help the individual to get the desired physique,if they follow a particular lifestyle which is stated in our application. This fitness app emerged like a machine which interacts with the humans in terms of health and exercise like what body type they want and respond them with the exercises accordingly. This Fitness application can be used just like your personal trainer with virtual interaction especially in this COVID-19 like situation where people don't prefer of going to gyms or hire any trainer from outside.

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CHAPTER 1
INTRODUCTION

Combining the popularity of mobile devices with the on-going search for fitness, thousands of fitness applications (apps) are available for free or low cost. Apps allow users to set fitness goals, track activity, gather workout ideas, and share progress on social media. Characteristics such as a user-friendly interface, automatic tracking, and security are desired app characteristics among fitness app users. Studies have examined desirable characteristics at one point in time, but long-term app usage and subsequent fitness behaviorhave not been adequately studied. There is also uncertainty if these apps help individuals achieve and maintain personal fitness long term. To further complicate, technology usage attrition in studies of eHealth technology is an issue that can negatively affect results.

Exercise is any physical activity that keeps body fit, improves human health and maintains overall wellness. Including exercise in our daily life can contribute in maintaining a healthy life and also can prevent diseases. Physical exercise plays a vital role in strengthening the immune system. Incessant sicknesses are significant executioners in the cutting edge time. Physical inertia is an essential driver of most incessant maladies. Physical movement/practice is analyzed as essential counteraction against 35 ceaseless conditions such as obesity, insulin resistance, diabetes, non-alcoholic fatty liver disease, coronary heart disease, slipped disc etc. Oxygen consuming activity improves course, which brings

about brought down pulse and pulse [Stewart says]. Likewise, it expands your general high-impact wellness, as estimated by a treadmill test, for instance, and it helps your cardiovascular yield (how well your heart siphons). Oxygen consuming activity likewise lessens the danger of type 2 diabetes and, in the event that you effectively live with diabetes, causes you control your blood glucose. This method helped out more than 50% of the patient to recover heart diseases. A slipped circle can squeeze the nerves and muscles around the spinal segment as it is a complex zone of nerves and veins. Doing delicate exercises and activities will reinforce the muscles that help the spine and lessen pressure on the spinal segment. They will likewise Figure no. Title Page no. 1. Block diagram 19 2. Screenshots of Application 22-24 advance adaptability in the spine and may help diminish the danger of a herniated plate from repeating. A specialist proposed firing little and working up the degree of movement gradually. They talk about explicit activities that an individual ought to and ought not to perform during the recuperation time frame. Be that as it may, in the event that on the off chance that somebody as of now has an extreme back issue, he/she can get operated and return to their ordinary life in some time, tells Dr Manu Bora. A nation mother developed 58 years, who had been a widow as far back as 29 years at the hour of plan, acquainted with the chest community with grumblings of shortness of breath while doing normal ordinary activities. Pointless sluggishness was seen during the day hours as she dosed off performing run of the mill step by step errands. She began doing physical activities as proposed by her coach. She was approached to walk 150 stages inside.

She had the option to do just 75 stages on the main day, yet slowly she improved and by the centre of second week, she had the option to walk outside. This movement was embraced alongside hand cycling and breathing activities. The patient gave a load of 150.6 kg initially but in a time span of 2 months she diminished 20 kg by doing physical activities. Despite knowing these helpful app attributes to users, the standard in effective health behavior change is supported by theory-based interventions. Research suggests that apps based in health behavior theory, behaviour change techniques, and evidence based practicesare lacking. This makes it difficult to determine usefulness of traditional health behavior change methods on mobile technologies. Furthermore, apps that do utilize constructs of health behavior theories may not apply all constructs of a particular theory, whether known by the app developer or not, making it not possible to determine the efficacy of the theory.

Various examinations and studies has analyzed that exercise is effective in reducing depression and stress and the lot of these assessments have portrayed a positive response related with training consideration. For example, 30 organization remaining bearably debilitated individuals were discretionarily selected to a movement intervention assembling, a social consideration gathering, or a hold up list control group. The action mediation contained walking 20 to 40 minutes multiple times every week for about a month and a half. The creators detailed that the activity program eliminated all the symptoms of depression among the individuals. Different sorts of activity have been assessed for their

viability in neck pain, including general exercise and movement, neck explicit fortifying or control works out, and sensorimotor activities. Efficient audits for the most part incorporate all activity types together. An ongoing extensive Cochrane methodical survey found no excellent proof, demonstrating that there is still vulnerability about the viability of activity for neck pain. Also, the creators utilized an activity characterization framework dependent on a clinical method of reasoning for choosing concentrates with comparable mediations to help with translation and incorporation inside the meta-investigations. Exercise appears to improve the physical and passionate prosperity of patients who as of now have Alzheimer's malady. The patients practiced tolerably for as meager as an hour every week. Specialists noted patients who practiced were less discouraged, meandered away less, endured less falls, contrasted with patients who didn't work out. Audit by Harutoshi Sakakima proposes that physical exercise goes about as prototypical preconditioning boosts that offer mind insurance impacts and are sheltered and serviceable therapy choices for furnishing endogenous neuro protection in patients with intense and constant stroke. People are becoming more conscious about their health and fitness these days. Keeping all this in mind, we have designed an android app for making people fit and fine.

Behavior change techniques have been used in some fitness apps. An examination of the most highly reviewed health apps in the iTunes Apple Store determined that all 23 apps were lacking in theory-based behavior change strategies. Regarding behavior change

techniques, a review of popular apps determined that most app descriptions described fewerthan four behavior change techniques. Most common techniques included instruction on performance of exercises, modeling of exercises, feedback on performance, activity goal setting, and planning for social support and behavior change. Interestingly, more costly tend to be higher quality in terms of usability and include some behavior change techniques. Despite a lack of theory and behavior change techniques, some fitness technology strategies for behavior change have been found to be effective. For example, technology that tracks behaviour over time and allows the user to see their own behavior trends in a visual format have been found to positively impact health behavior. Not surprisingly, apps that lack the ability to engage users lessen the impact of the app effectiveness on behavior change.

Online advice from a personal coach was more influential on user behavior than peer support.It has also been suggested that apps utilize expertise from health professionals for monitoring and feedback as well as provide the user with a more personalized experience toincrease adherence to health behaviors. In fact, a review of health apps suggested a lack of trustworthiness of apps could be ameliorated by having a behavior change expert aid in app development. The apps in the present study have several of these attributes.The longevity of app usefulness on behavior change is unclear. In the case of technology, technology may beeither a positive or negative control variable in that it may encourage or prevent exercise.

Health, technology, information tracking of health behaviors, and the value of health behavior theory and behavior change techniques are important areas to better understand especially as technology becomes more prevalent in daily life. The Theory of Planned Behavior (TPB) is an appropriate theory to use to understand technology and health behaviors for a couple reasons. For one, a validated TPB and exercise survey exists. Secondly, all constructs of TPB can be applied to exercise behavior. TPB considers the constructs of attitude, subjective norm, perceived behavioral control, and behavioral intention to impact behavior change. Attitude refers to beliefs about a behavior once expected outcomes are evaluated. Subjective norm pertains to what one considers to be a typical behavior and to what extent one is willing to comply. Perceived behavioral control considers control beliefs and ability to influence these beliefs.Lastly, behavioral intention examines how attitude, subjective norm, and perceived behavioral control contribute to intention to engage in the behavior. In addition to the applicability of this theory to technology, a validated exercise and TPB survey already existed, which was modified to include exercise with technology (apps) along with exercise.

REQUIRED TOOLS

Software Specifications :-

>> Java.

>> Android Studio.

>> Adobe XD.

Hardware Specifications :-

>> i3 processor.

>> 4GB RAM.

>> Internet Connectivity

CHAPTER 2

LITERATURE REVIEW

People joining the gym often face the issue of being unacquainted with the types of equipment and various exercises they should be doing to achieve the desired goal. Be it losing fat, building muscle or improving endurance, every fitness goal requires a different set of workout plan and nutrition diet to be followed. The Fitofy application can guide users through different workouts and also provide a suitable diet chart to be followed as per the selected fitness goal. It can also present different exercise routines based on the intensity level the user chooses and is comfortable with. The user can also choose from different exercise routines based on different target areas like arms, legs and also based on the body weight the user get the different exercises to mold their body in the way that they want.

In a review of 379 apps, no apps adhered to aerobic physical activity guidelines, though one app referenced these guidelines. Seven apps adhered only to guidelines for resistance training physical activity. Without a reference to the national physical activity guidelines, individuals may not be able to set goals for what is considered adequate physical activity. Health, technology, information tracking of health behaviors, and the value of health behavior theory and behavior change techniques are important areas to better understand especially as technology becomes more prevalent in daily life. The Theory of Planned

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or negative control variable in that it may encourage or prevent exercise. Lastly, behavioral intention examines how attitude, subjective norm, and perceived behavioral control contribute to intention to engage in the behavior. In addition to the applicability of this theory to technology, a validated exercise and TPB survey already existed, which was modified to include exercise with technology (apps) along with exercise.

It was found that using Fitofy application improved proper use of exercises. It was also determined that users appreciated a question of the day provided via this application, and that mass index shared information has also proven very wealthy for the users in terms of health. In another research study, which included a self-report survey of fitness trainer on their perceptions of using "Fitofy" Application in exercise and body fitness, there were positive impressions with the use of introducing the case of mass index or body weight. More than half of surveyed fitness trainer agreed that this application could help user better manage their own health, improve access and timeliness to care, or reduce travel time to their gym or yoga class. Users also felt engaged by the virtual environment and indicated that they could properly judge, based on the given feedback, whether exercises were performed correctly. Users experienced no major side effects during the training intervention, except for physical fatigue at the end of a training session which was experienced by of the users. In addition, of fitness trainer believed that "Fitofy" Application could improve nutrition or diet, enhance body posture, increase activity or exercise, or

reduce stress. In the same fitness trainer study, challenges were perceived related to the fact that Fitofy cannot understand or display human emotion.

Life is full of science and knowledge produced by human minds, God has given these concepts of motivation, science and law, where science is the light of life, and you know the rights of the creator, and how to communicate with social users in the fields of engineering, medicine, modern technology and so on. Nowadays the mobile phone is becoming an important tool, not only limited as a communication service, but beyond its capacity to provide modern technology and many services. Mobile technology is growing exponentially over the years; there has been a lot of new research and development in this space. Statista.com reported that more than 46 million people worldwide used health and fitness applications in 2014. As a modern approach to health and fitness, health and fitness offer many benefits.

• The App is implemented in a way to keep the track of your exercises.

• This application will keep track on user's workout and also user can add exercises in this application according to their choice.

• Customize your workout according to your wishes and track your progress after the session. It displays the progress graph of the user and the record of the individual can also be shared.

• The Android-based app enhances its accessibility with smartphones given the wide acceptance of Android-based mobile devices. In addition, there are cost savings for the consumer, as there will no longer be a need to buy bands.

• Easy access at the same time to the general public who can afford a health accessories or additional hardware, can help improve the quality of life and reduce the risk of health problems and death from physical inactivity

LIMITATIONS:

• In recent times there has been a growing number of interest in fitness as well as health by most people, there are people who have a full desire for that, but it can force them time or put them in a state of instability sometimes on a certain day of exercise.

• Based on that project a mobile application was provided for exercise everywhere at any time, thus facilitating strenuous training somewhere or at a certain time of day and helped them calculate calories burned by exercise and eat a healthy diet.

• There are many operating systems that are interested in health, fitness and nutrition, but the user needs a single integration program between them to facilitate transactions and the user does not interfere with more than one use and provide its complete results.

• The included details for customizing the virtual fit partner app are mostly manually entered by the user. This allows for incorrect data entry, which may compromise its reliability.

• Encouraging long-term data recording can be a challenge without the involvement of health professionals.

FUTURE SCOPE:

In the case of sports, future virtual fit partner app may allow coaches to incorporate this standard into their standard practice, overcoming the limitations of the traditional methods outlined above. For example, a desirable good app can have two different features, one for the athlete to track the ratings and one for the trainers to manage the collected data for each person or group as a whole. In this case, trainers may receive athletic data from a distance, making it easier for them to make adjustments in daily pro-gram training. In the same line, these friendly apps will include a training indicator, based on the daily rate and other severe pressures, predicting athletes 'training on current physical condition. The power of applications to collect and maintain app measurement methods impossibly can make the translation of robust and durable training loads possible. While app is a well-known indicator of athletic performance for recreational and special athletes, the future capabilities of applications for collecting other physical and non-physical components can enrich the interpretation of app ratings in this process.

CHAPTER 3

PROJECT DESIGN

The app was developed to be based solely around the user's health and fitness, so all of the features in it are based around this. The app was built in android studio and each page of it was designed following the same theme. Each feature has an individual class which can be accessed from the homepage. Through customizing our file we were able to create a colour scheme which is present throughout every page of the app. Using different layouts and layout components we were able to design each page as we saw fit.

We have looked at all of the different components and the relationships between them which ultimately laid the foundation for the overall design of my application. The apps design allows the user to traverse through the various pages easily.
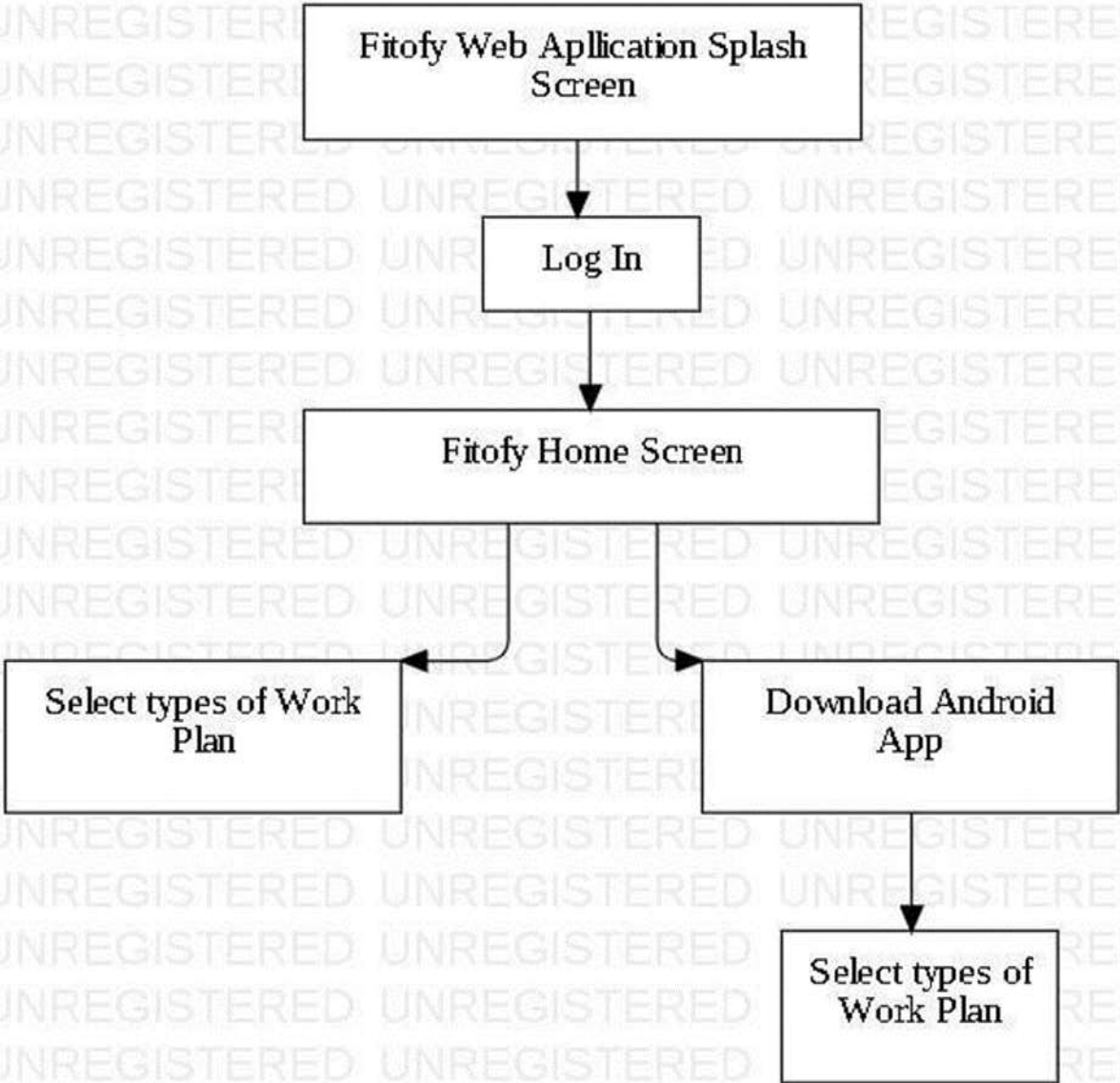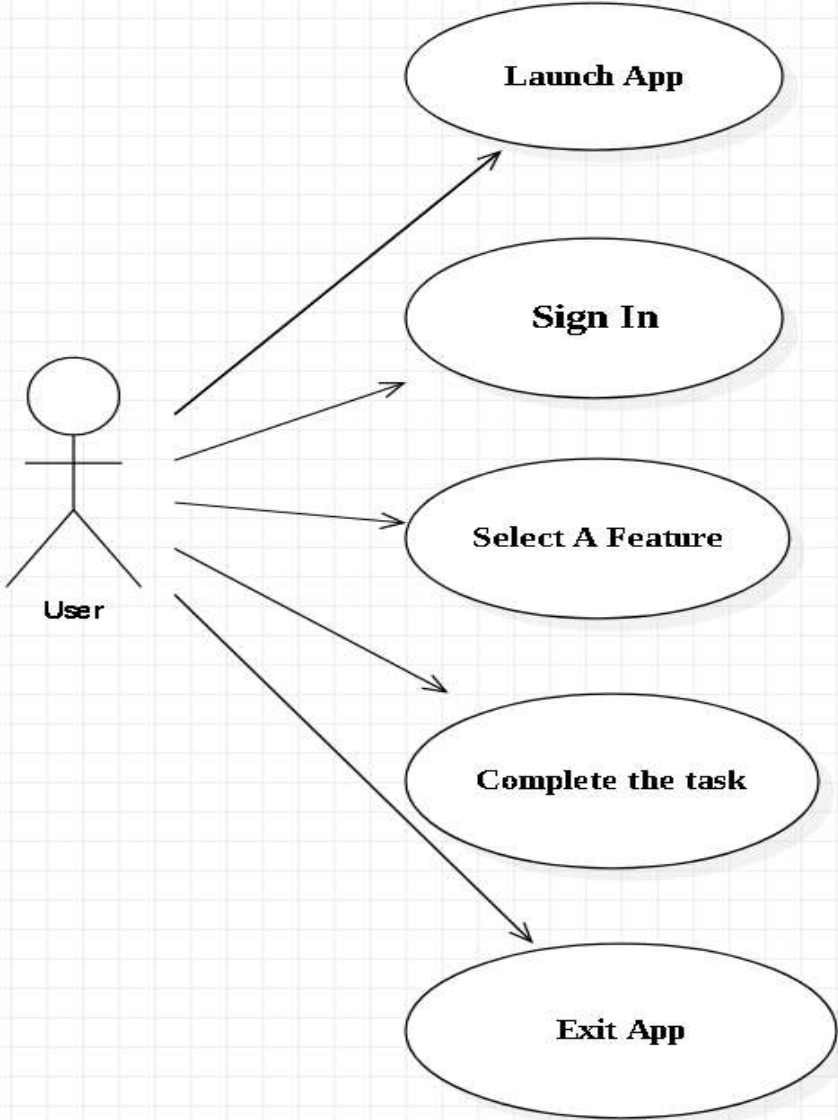
Fig 1 – Flow Chart Diagram

Fitofy Web Aplication Splash Screen

Log In

Fitofy Home Screen

Select types of Work Plan

Download Android App

Select types of Work Plan

Fig 2 – Use Case Diagram

CHAPTER 4
WORKING OF PROJECT

In order to complete this project, I have utilised android studio as it is an application that I have become familiar with during my coursework. During my coursework, I have used android studio in the creation of numerous projects, and thus, have used this knowledge to create the classes and GUI elements of this one. I also used two different android devices with different operating systems. These would prove useful during the testing of the application. Google Firebase was used for user authentication in the app. This was used to implement the login and registration sections. Choosing Firebase was an easy decision as it is easy to implement and provides a variety of authentication options through the Firebase console. The console makes it easy to manage users and includes an option for users to have a password reset sent to their email address.

The app will also make use of google firebase to host user credentials. The firebase authentication functionality is used for the login and registration methods.

- Fitofy application recommends exercises through communication between the machine and humans.

- Personalised exercises are recommended by the following input – Body type. Kind of work they do.

- Exercises recommended are highly personalised keeping in mind the health of the customer.

- Fitofy application will first collect the data of the user as input.

- Then it will divide them in groups using Clustering for Segmentation algorithm.

- User will insert their body weight and based on the calculations, the application will suggest the exercises.

- User can go through the different exercises according to their daily chart such that if they want to do exercise for arms, legs, shoulder then they can go through the options stated inside the app and can work accordingly

MODULE – 1

At first we have started the application by working on its android development part. We first of all have used a java.Main file names as Start Screen which is like a splash screen of the app which you will first of all encounter when you will open the application on the mobile. After that you will land up to the signup page in which you are required to create your own profile by providing your username and password. You can log in using your Gmail id which will allow to directly log in into the application by providing your Gmail login credentials. If the login gets successful you will be redirected to the main landing page of the application and a message of welcome will be flashed onto the screen and if not, a message of Sign in Cancelled will appear on the screen. Once you are on the main page of the app you will have two sections to choose for. The first one is the workout section while the other one is the diet section. If you want to have a workout plan you can go to the workout section and if you want to have information about diet, you can look for

that in the diet section. In both the sections, there will be different sub sections in which the user can choose the difficulty starting from beginner to advance level.

User Requirements

This section will describe the user requirements needed so that they will be able to use the application efficiently.

- Android phone/tablet: The user must possess an android phone or tablet as the app is not compatible with other devices.

- API level: The minimum sdk level for the app is level 15 and the target sdk is 25.

- Internet access: The user will also need internet access to sign in/register and to use the google maps tracking feature.

Environmental Requirements

- Android phone/tablet: Required to run the application during development and to test.

- Internet: Used to access various resources for the project.

- Computer/laptop: Required to work with android studio to develop the app.

- Firebase Console: used to monitor activity of user login and crash reporting.

We have attached few screenshots of the app which shows the work we've completed.

WORKOUTS
FOR YOU

Recommended workouts
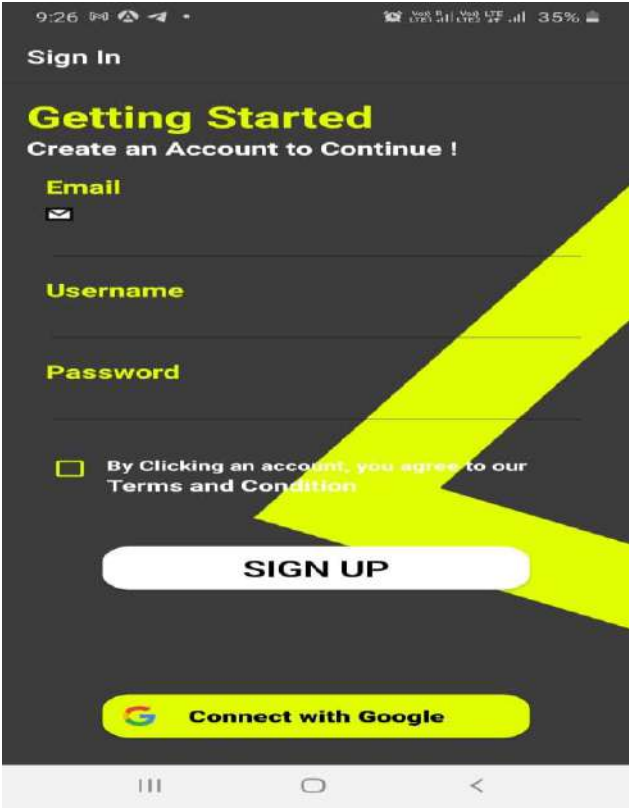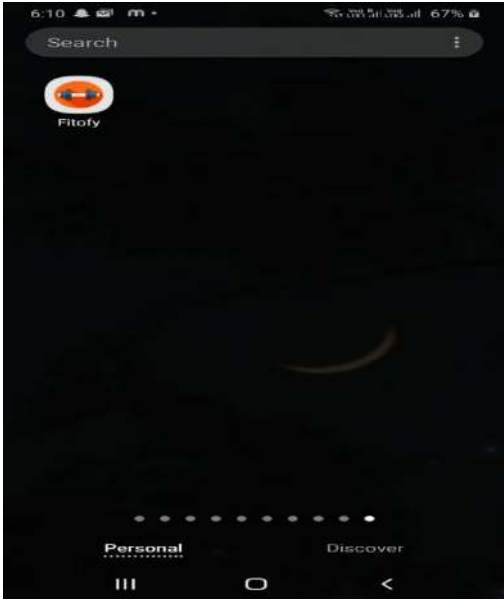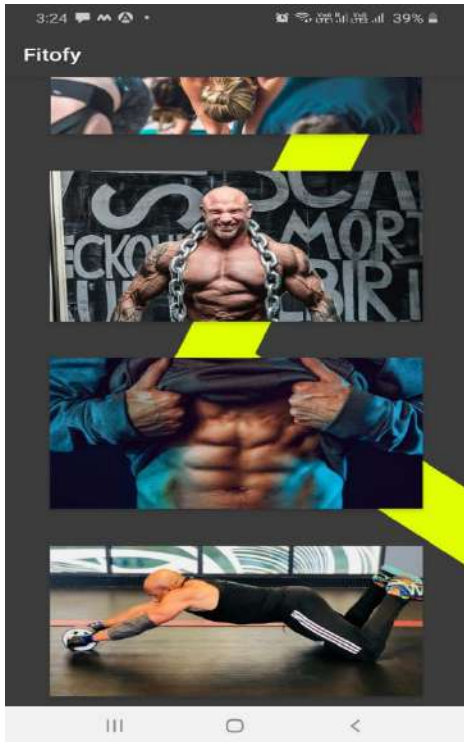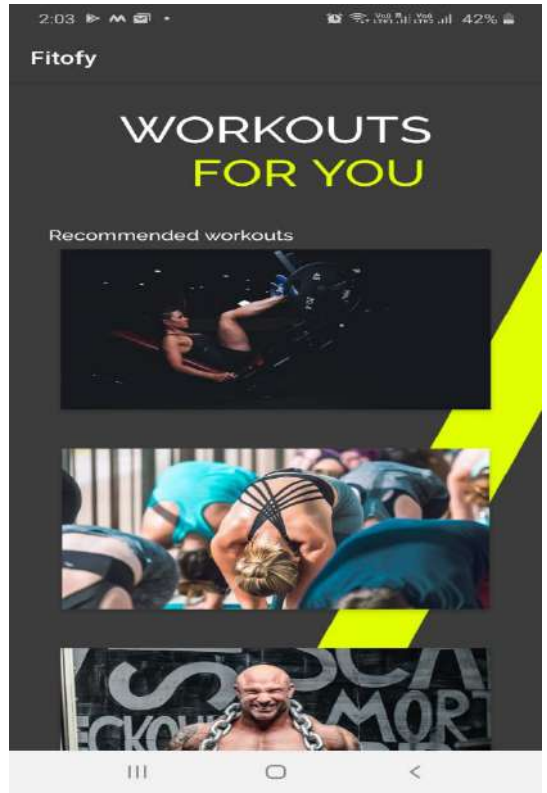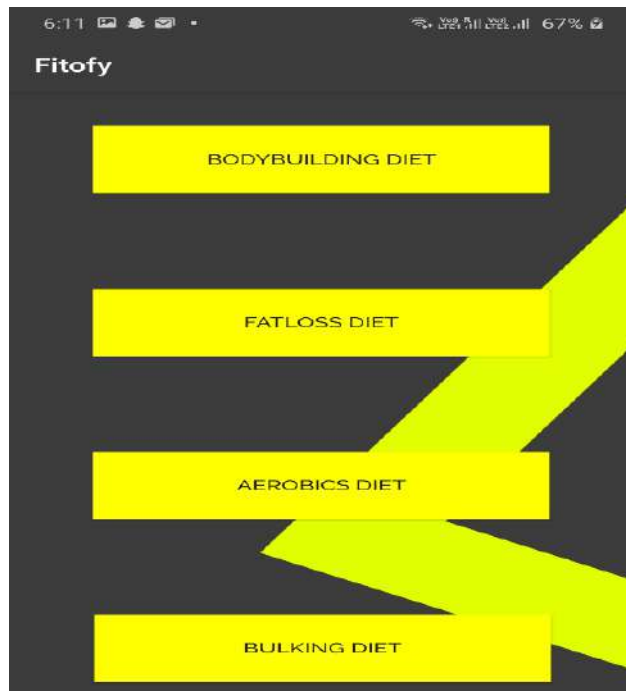
The above screenshot is from the anonymous user's phone who had installed the "Fitofy" app. Here the icon located at the coner in first image is our application and the picture visible has been downloaded from google.

Bulk Workout Plan

DAYS	WORKOUT SPLIT
MONDAY	CHEST & BICEPS
TUESDAY	LEGS
WEDNESDAY	SHOULDERS & TRAPS
THURSDAY	ARMS
FRIDAY	CARDIO & ABS
SATURDAY	BACK & TRICEPS
SUNDAY	OFF

MONDAY - CHEST & BICEPS			
CHEST/BICEPS	EXERCISE	SETS	REPS
WARM UP	1. PUSH UPS	2	MAX
SUPERSET	2A. INCLINE PRESS	3	6-8
	2B. PUSH UP ON DUMBBELLS	3	10-12
SUPERSET	3A. BENCH PRESS	3	6-8
	3B. INCLINE PUSHUPS	3	10-12
SUPERSET	4A. DB FLY	3	10-12
	4B. DIPS	3	10-12
SUPERSET	5A. EX BAR CURL	3	6-8
	5B. REVERSE MACHINE BAR CURL	3	10-12
SUPERSET	6A. DB HAMMER CURL	3	6-8
	6B. ROPE CURL (CHEST FACING DOWN)	3	10-12

NOTE: 3 MINUTE REST AFTER EACH SUPERSET.

TUESDAY - LEGS			
LEGS	EXERCISE	SETS	REPS
WARM UP	1. BODY WEIGHT SQUAT	2	20-30
REGULAR SET	2. BACK SQUAT	3	6-8

LEGS	EXERCISE	SETS	REPS
SUPERSET	3A. BARBELL DEADLIFT 3B. DB STIFF LEG DEADLIFT	3 3	6-8 10-12
REGULAR SET	4. BARBELL FRONT SQUAT	3	6-8
SUPERSET	5A. DB LUNGES 5B. SEATED CALF RAISE	3 3	10-12 10-12

NOTE: 3 MINUTE REST AFTER EACH SUPERSET.

WEDNESDAY - SHOULDERS & TRAP

SHOULDERS/TRAP	EXERCISE	SETS	REPS
WARM UP	1. STANDING SHOULDER PRESS	2	15-20
SUPERSET	2A. SEATEDBARBELL PRESS 2B. SINGLE HAND DB PRESS	3 3	6-8 10-12
SUPERSET	3A. DB SIDE RAISE + 3B. DB FRONT RAISE (1 REP SIDE & 1 REP FRONT TOGETHER) 8+8 = 16 REPS	3	8
SUPERSET	4. CABLE REAR DELT FLY	3	10-12
SUPERSET	5A. BARBELL SHRUGS 5B. ROPE SHRUGS	3 3	6-8 10-12
FINISHER SET	6. ARM PADDLE	1-2	40

NOTE: 3 MINUTE REST AFTER EACH SUPERSET.

THURSDAY - ARMS

ARMS	EXERCISE	SETS	REPS
WARM UP	1. DB CURL/DB KICKBACK	1	20-30
SUPERSET	2A. CLOSE GRIP EZ BAR CURL 2B. DB SKULL CRUSHER	3 3	10-12 10-12
SUPERSET	3A. SPIDER INWARD CURL 3B. DB OVERHEAD EXTENSION	3 3	10-12 10-12
SUPERSET	4A. LAYING CABLE CURL 4B. TRICEPS PRESSDOWN (INCLINE BENCH)	3 3	10-12 10-12
REGULAR SET	5. BARBELL STANDING BEHIND THE BACK FOREARM CURL	3	12-15

FRIDAY - ABS & CARDIO

ABS/CARDIO	EXERCISE	SETS	REPS
REGULAR SET	1. STABILITY BALL CURL	3	15-20
REGULAR SET	2. HANGING LEG RAISE	3	15-20
REGULAR SET	3. PLANK SIDE TO SIDE	3	15-20
REGULAR SET	4. AB ROLLER (OPTIONAL)	3	15-20

NOTE: 3 MINUTE REST AFTER EACH SUPERSET.

SATURDAY - BACK & TRICEPS

BACK/TRICEPS	EXERCISE	SETS	REPS
WARM UP	1. PULL UPS	1	MAX
SUPERSET	2A. WIDE GRIP LAT PULL DOWN 2B. CABLE SINGLE HAND ROWS	3 3	6-8 10-12
SUPERSET	3A. BARBELL ROWS 3B. SINGLE HAND DB ROWS	3 3	6-8 10-12
REGULAR SET	4. LAT ROPE PULL DOWN	3	10-12
SUPERSET	5A. SKULL CRUSHER 5B. ROPE OVERHEAD EXTENSION	3 3	6-8 10-12
SUPERSET	6A. CLOSE GRIP TRICEPS PRESSDOWN 6B. CABLE KICKBACK	3 3	6-8 10-12
REGULAR SET	7. BENCH DIPS	3	12-15

NOTE: 3 MINUTE REST AFTER EACH SUPERSET.

BULK NUTRITION PLAN

Before starting BULK program, your first step is to calculate your daily calories requirement. Everybody's height/weight/age is different so they need different calories. Follow the 3 steps below to find out your caloric intake to gain muscle.

STEP 1: CALCULATE THE BMR
Use Online BMR calculator or BMR Mobile App.
Enter Height/Weight/Age including Moderate Active (5 days a week) Lets assume your BMR came 1700.

STEP 2: CACULATE THE MAINTENANCE CALORIES
[FORMULA: BMR x 1.5]
1700 x 1.5 = 2550 calories
So maintenance calories is 2550

STEP 3: ADD EXTRA CALORIES FOR GAINING
If you want to gain 0.5lbs per week then add 250 calories 2550 + 250 = 2800
If you want to gain 1lbs per week then add 500 calories 2550 + 500 = 3050
If you want to gain 2lbs per week then add 1000 calories 2550 + 500 = 3550

MACROBREAKDOWN			
TOTAL CALORIES	CARBS (55%)	PROTEIN (25%)	FAT (20%)
3500 aprx.	481g	218g	77g

MEAL 1 - BULK SHAKE

INGREDIENTS	CARBS	PROTEIN	FAT
2 BANANA	50g	2g	0g
1 SCOOP WHEY	1g	24g	1g
240ML MILK	10g	8g	5g
150ML WATER	0	0	0
1.5SP PEANUT BUTTER	5g	5g	10
1/2 CUP OATS POWDER	27g	3g	1g
PINCH CINNAMON	0	0	0
TOTAL CALORIES = 681	**92g**	**40g**	**17g**

MEAL 2 - BREAD TOAST & OMELETE

INGREDIENTS	CARBS	PROTEIN	FAT
2 WHOLE EGGS	2g	12g	10g
2 EGG WHITES	0	8g	0
3-4 MULTIGRAIN BREAD SLICES	56g	8g	10g
2SP JAM	20g	0	0
1-2 BANANA (OPTIONAL)	—	—	—
TOTAL CALORIES = 550	**78g**	**28g**	**14g**

MEAL 3 - RICE EGG PEAS

INGREDIENTS	CARBS	PROTEIN	FAT
1 CUP RICE	45g	3g	1g
1/2 CUP KIDNEY BEANS	15g	5g	1g
4 EGG WHITES	0	16g	0
1/2 cup PEAS	3g	0	0
1SP GHEE OR COCONUT OIL (OPTIONAL)	0	0	13g
TOTAL CALORIES = 471	**60g**	**24g**	**15g**

MEAL 4 - BULK SHAKE (Same as Meal 1)

INGREDIENTS	CARBS	PROTEIN	FAT
2 BANANA	50g	2g	0g
1 SCOOP WHEY	1g	24g	1g
240ML MILK	10g	8g	5g
150ML WATER	0	0	0
1.5SP PEANUT BUTTER	5g	5g	10
1/2 CUP OATS POWDER	27g	3g	1g
PINCH CINNAMON	0	0	0
TOTAL CALORIES = 681	**92g**	**40g**	**17g**

PRE / DURING / POSTWORKOUT

PRE WORKOUT	QUANTITY
1 SCOOP ANY PREWORKOUT SUPPLEMENT	1scoop
CREATINE	3-5g
WATER	200-240ml

DURING WORKOUT	QUANTITY
BCAA	5-10g
WATER	300-500ml

POST WORKOUT 1	QUANTITY
1-2 SCOOP WHEY PROTEIN	25-50g
CREATINE	3-5g
GLUTAMINE	3-5g
WATER	200-350ml

TOTAL CALORIES = 200	0	50g	0

POST WORKOUT 2 (45MIN AFTER POST WORKOUT DRINK 1)	QUANTITY
FRESH JUICE (ORANGE OR APPLE OR MIXED)	350ml

TOTAL CALORIES = 200	50g	0	0

MEAL 5 - POTATO CHICKEN BEANS

INGREDIENTS	CARBS	PROTEIN	FAT
220g POTATO	50g	o	o
1/2 CUP WHITE CHANNE	15g	6g	2g
1 TOMATO	5g	0	0
80g GRILLED CHICKEN	0	14g	0
1SP BARBIQ SAUCE (OPTIONAL)	0	0	13g
TOTAL CALORIES = 378	70g	20g	2g

MEAL 6 - BED PROTEIN

INGREDIENTS	CARBS	PROTEIN	FAT
100ml MILK	6g	5g	1g
1/2 SCOOP WHEY OR CASEIN	0	10g	0
2 RICE CAKE(OR BROWN BREAD)	30g	0	1g
1SP PEANUT BUTTER	3g	3g	10g
TOTAL CALORIES = 336	**39g**	**18g**	**12g**

VEG NUTRITION PLAN

MEAL 1 - MUSCLE OATS

FOOD	MACROS
MUSCLE OATS -2/3cup Oats -1/4 cup Cereals or Granola -2/3sp Whey -1sp Brans -1/8 cup Raisin -1/8 cup Cranberries -1/8 cup Crushed Almonds -1/8 cup Crushed Walnuts -1/2 Banana -1/2 Apple -2pinch Cinnamon	CALORIES - 595 PROTEIN - 35g CARBS - 80g FAT - 15g

MEAL 2 - PROTEIN POWER SNACK

FOOD	MACROS
PROTEIN POWER SNACK -1 Slice Bread + 1sp Peanut butter -1 Slice Bread+ ⅔ cup mashed chickpeas -1 Slice Bread+ ⅔ Banana+1sp Peanut butter	CALORIES - 536 PROTEIN - 23g CARBS - 71g FAT - 16g

MEAL 3 - POTATO BOWL

FOOD	MACROS
MUSCLE BUILDER POTATO BOWL -140g Sweet Potato -1/2 cup Kidney Beans -50g Fresh Paneer -1/2 Green Pepper 1/4cup Spinach (chopped) -3sp Green onion (chopped) -2sp Tomato (chopped) Sauce: Yogurt Sauce Topping -1/3cup Mango or Pine Apple (chopped) -25g Soy Chunks	CALORIES - 490 PROTEIN - 33g CARBS - 68g FAT - 10g

MEAL 4 - BULK UP SHAKE

FOOD	MACROS
BULK UP SHAKE -2 Banana -1sp Whey -1.5 sp Peanut Butter -240ml Milk -1/2 cup Oats powder -Pinch Cinnamon -150ml Water	CALORIES - 681 PROTEIN - 40g CARBS - 92g FAT - 17g

PRE / DURING / POST WORKOUT

PRE WORKOUT	QUANTITY
1 SCOOP ANY PRE WORKOUT SUPPLEMENT	1scoop
CREATINE	3-5g
WATER	200-240ml

DURING WORKOUT	QUANTITY
BCAA	5-10g
WATER	300-500ml

POST WORKOUT 1	QUANTITY
1-2 SCOOP WHEY PROTEIN	25-50g
CREATINE	3-5g
GLUTAMINE	3-5g
WATER	200-350ml

TOTAL CALORIES = 200	0	50g	0

POST WORKOUT 2 (45MIN AFTER POST WORKOUT DRINK 1)	QUANTITY
FRESH JUICE (ORANGE OR APPLE OR MIXED)	350ml

TOTAL CALORIES = 200	50g	0	0

MEAL 5 - RECOVERY MEAL

FOOD	MACROS
RECOVERY MEAT -200g Tofu 　(Grilled, roasted or pan cooked) -1 Pineapple Ring Broccoli Cabbage Salad -1/2 cup crushed Broccoli -1/2 cup crushed Cabbage -1 sp Ranch Beans Salad -1/4 cup Kidney Beans -1/4 cup Chickpeas -2 sp chopped carrots -2 sp chopped tomato -2 sp chopped onion -1/2 lemon -Cilantro little bit -Ketchup or Red Chutney -Salt/Pepper	CALORIES - 513 PROTEIN - 30g CARBS - 60g FAT - 17g

MEAL 6 - BED PROTEIN

FOOD	MACROS
BED PROTEIN -1/2 cup Milk -1/2 sp whey or casein -1/2 sp Peanut Butter -2 Rice Cake or Brown Bread	CALORIES - 336 PROTEIN - 18g CARBS - 39g FAT - 12g

MACRO BREAKDOWN
CALORIES - 3551 | PROTEIN - 229g | CARBS - 460g | FAT - 87g

MODULE – 2

In this we have stated the application by working on its web development part. We first of all have used a vscode application so that all the web part can be done at the same place. Here also we have the Start Screen which is like a landing screen of the app which you will first of all encounter when you will open the application on the mobile or web. After that at the top of the page which is the menu bar, one will be able to click on profile button which will land up to the signup page in which you are required to create your own profile by providing your username and password. You can log in using your Gmail id which will allow to directly log in into the application by providing your Gmail login credentials. If the login gets successful you will be redirected to the main landing page of the application and a message of welcome will be flashed onto the screen and if not, a message of Sign in Cancelled will appear on the screen. Once you are on the main page of the app you will have two cards to choose for which will contain two different sections. The first one is the workout section while the other one is the diet section. If you want to have a workout plan you can go to the workout section and if you want to have information about diet, you can look for that in the diet section. In both the sections, there will be different sub sections in which the user can choose the difficulty starting from beginner to advance level.

CHAPTER 5

RESULT

Following to this fitness application, all the audience are more than happy as during this tough time of covid, this app is proving to be the best guide to be fit even at home by providing adequate amount of workout and diet plans to follow. Although it has some limitations like people of old age are not familiar with the latest technologies but with the growing times they are coping up with the technologies and are giving their best to be in the streamline. The creation and implementation of "Fitofy" is still a developing area, heavily related to machine learning, so the provided solutions, while possessing obvious advantages, have some important limitations in terms of functionalities and use cases, however this is changing over time. The most common ones are listed below:-

Δ As the database, used for output generation, is fixed and limited, Fitofy can fail while dealing with an unsaved query.

 Δ Fitofy's efficiency highly depends on body weight and mass index, and is limited because of irregularities, such as non-existing indexes.

Δ As it happens usually with technology-led changes in existing services, some consumers, more often than not from the old generation, are uncomfortable with Fitofy application due to their limited understanding, making it obvious that their requests are being dealt by machines.

The main objective of the Fitofy project is to build a web and android portal that provide tailored fit meal plans to the user based on the user physical information and meal preferences, helping user to achieve a goal such as reduce or gain weight, provides a platform to record meal consumption and activity data and improve overall wellbeing of the user by helping to keep eating habits and physical workouts directed to achieve a user goal. Mainly the system takes few user inputs such as body weight, height, date of birth and meal preference. Using that system calculates BMR, TDEE and Target body weight. Then the system uses the calculated variables to generate a meal plan which specifically helps the user to archive the target bodyweight. System also allows the user to record meal consumption along with workout plans as to execute his plans and activity and provide guidelines and alerts to systematically achieve a healthy body weight target. System also provides a simple yet eye-catching dashboard to the user to quickly identify the position of the nutrition consumption and calories burnt daily basis.

Major component of the system is generating meal plan for the user. Which is kind of a complex problem to solve. Developer researched on the methodologies already available to solve such problem and identified that the web and android both applications can be used as an answer. Using these, the meal plan constructed as a resource solving problem. Basically, it tried to equalize a person's daily calories consumption of multiple foods to person's TDEE. As constraints, it took users basic macro requirement and maximum serving size of all the foods consumed. After solving the linear programming model, the system provides

how much of each ingredient required for a specific user to prepare a meal to consume. Each and every module has gone through unit testing using a class in the application. All modules has made the Fitofy system, it has gone under the user level testing as well. All results are mentioned in "Module 1" section. System logs contains all useful information such as user login, meal plan generation, system database updates, etc. System also logs errors with timestamp and user details with an error code. System administrators can easily track the root cause for the errors with reference guide provided with detailed error codes. Also the administrators can change the workout and diet level to three different levels which helps to avoid recording all details all the time. Creating an automated system which associates with human health is always challenging. Therefore, to provide more accurate and near perfect solution, the developer always used the formulas and methodologies which has many researches and studies. All the formulas used has a history of decades and published research papers and proven results. Therefore, validating the formulas done through trustworthy published researches.

CHAPTER 6

CONCLUSION

From our perspective, Fitofy are dramatically changing businesses. It can reach out to a large audience on messaging apps and be more effective than humans. It can be developed into an information gathering tool in the near future.

Especially in fitness, users usually value depth of information when analyzing their health and workout routines. So whether you want to stay fit, lose weight, or get toned, this application can provide you with an efficient and consistent workout plan while keeping track of the progress.

The purpose of my application is to develop an application that is valuable to gym goers and people who exercise in general who would like to track their workouts and accomplish their fitness goals. The graphical user interface of the app should look appealing to the user so as to entice them. The app should provide a pleasant experience and a provide a feeling of accomplishment after being used to encourage recurrent usage. It should be highly accessible regardless of the user's familiarity with applications. Whether the user is a novice or is experienced, the app will be good for both. The key to this app is simplicity and this app will provide a few features popular in this market, through a simple and straight to the point application. The app should also provide the user with a fun experience.

The project has been successfully completed with great satisfaction. The plan is structured as determined in the design phase. The project provides a great idea for building an easy-to-use

system that satisfies the user. From our perspective, Fitofy with android is dramatically changing businesses. Fitofy can reach out to a large audience on messaging apps and be more effective than humans. It can be developed into an information gathering tool in the near future. This helps you to make some changes in your life and daily routine, if necessary. Also, this app keeps you motivated and focused on reaching the desired level of resilience

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