GALGOTIAS UNIVERSITY

School of Computing Science and Engineering

Program: B. Tech

Course Code:BCSE3096

Course Name: Cloud Application Development

Course Outcomes :

CO'S	TITLE
CO1	Understand the cloud environment. (Understand)
CO2	Analyze the best practices in the design and development of elegant and flexible cloud software solutions. (Analyze)
CO3	Contrast software development in the web, cloud and others. (Knowledge)
CO4	Create, implement and deploy a cloud/LAMP based application. (Create)
CO5	Apply a real-world problem and develop a cloud/LAMP based software solution. (Apply)

Syllabus

Unit-1: Cloud Based Applications 9 hours
Introduction, Contrast traditional software development and development for the cloud. Public v private cloud apps. Understanding Cloud ecosystems – what is SaaS/PaaS, popular APIs, mobile.
Unit II: Designing Code For The Cloud 9 hours
Class and Method design to make best use of the Cloud infrastructure; Web Browsers and the Presentation Layer: Understanding Web browsers attributes and differences. Building blocks of the presentation layer: HTML, HTML5, CSS, Silverlight, and Flash.
Unit III : Web Development Techniques And Frameworks 9 Hours
Building Ajax controls, introduction to JavaScript using JQuery, working with JSON, XML, REST. Application development Frameworks e.g. Ruby on Rails , .Net, Java API's or JSF; Deployment Environments – Platform As A Service (PAAS) ,Amazon, vmForce, Google App Engine, Azure, Heroku, AppForce
Unit IV : USE CASE 1 9 Hours
Building an Application using the LAMP stack: Setting up a LAMP development environment. Building a simple Web app demonstrating an understanding of the presentation layer and connectivity with persistence.
Unit V : USE CASE 2 9 Hours
Developing and Deploying an Application in the Cloud : Building on the experience of the first project students will study the design, development, testing and deployment of an application in the cloud using a development framework and deployment platform

INTRODUCTION

- The term **Cloud** refers to a **Network** or **Internet**. In other words, we can say that Cloud is something, which is present at remote location.
- Cloud can provide services over network, i.e., on public networks or on private networks, i.e., WAN, LAN or VPN.
- Applications such as **e-mail, web conferencing, customer relationship management (CRM),** all run in cloud.

INTRODUCTION

- Cloud Computing provides us a means by which we can access the applications as utilities, over the Internet. It allows us to create, configure, and customize applications online.

- With Cloud Computing users can access database resources via the internet from anywhere for as long as they need without worrying about any maintenance or management of actual resources.

INTRODUCTION

- **Cloud Computing** is a general term used to describe a new class of network based computing that takes place over the Internet,
  - basically a step on from Utility Computing
  - a collection/group of integrated and networked hardware, software and Internet infrastructure (called a platform).

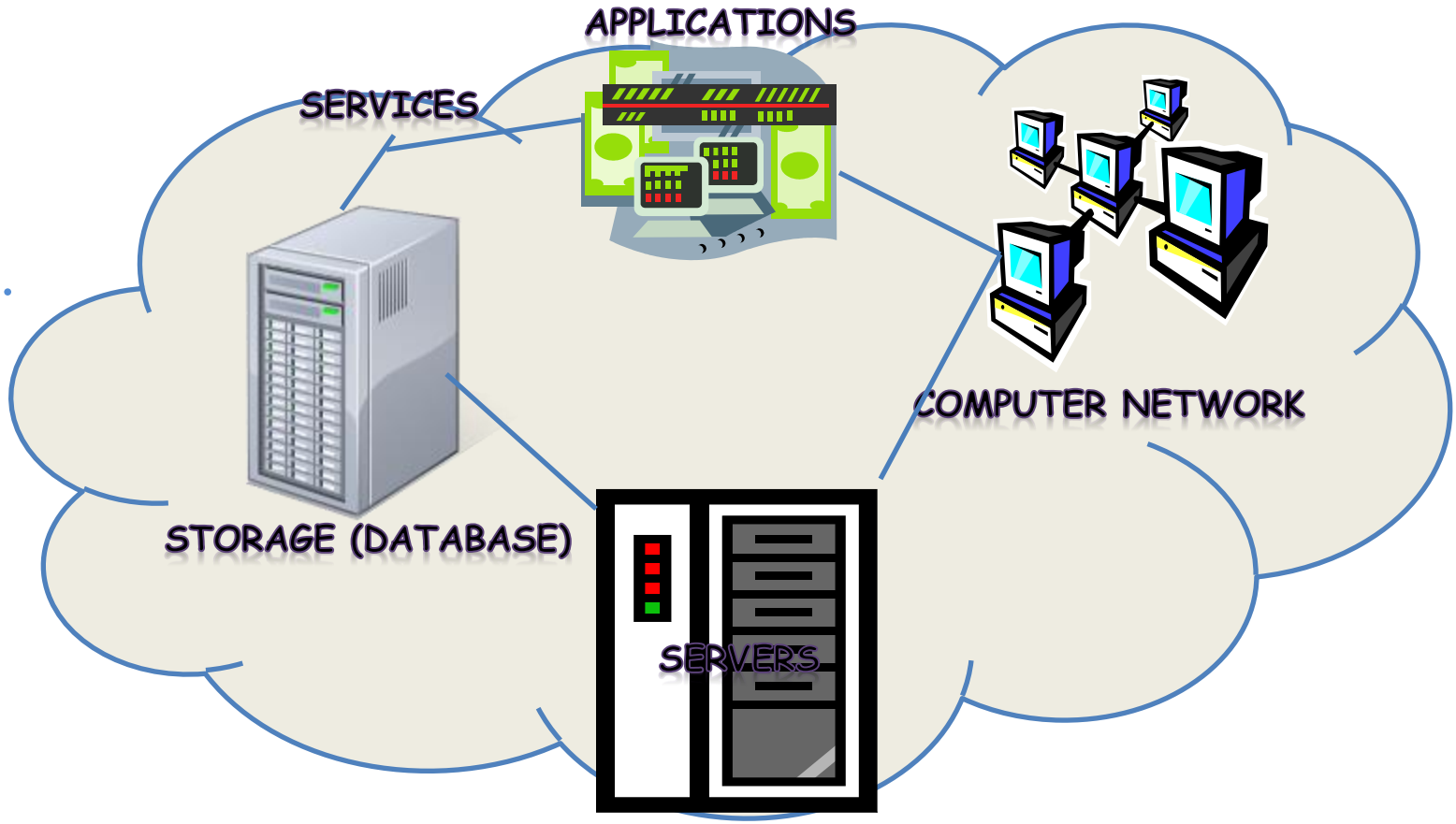
INTRODUCTION

- Using the Internet for communication and transport provides hardware, software and networking services to clients

- These platforms hide the complexity and details of the underlying infrastructure from users and applications by providing very simple graphical interface or API

INTRODUCTION

- In addition, the platform provides on demand services, that are
  - always on, anywhere, anytime and any place.
- Pay for use and as needed, elastic
  - scale up and down in capacity and functionalities
- The hardware and software services are available to
  - general public, enterprises, corporations and businesses markets

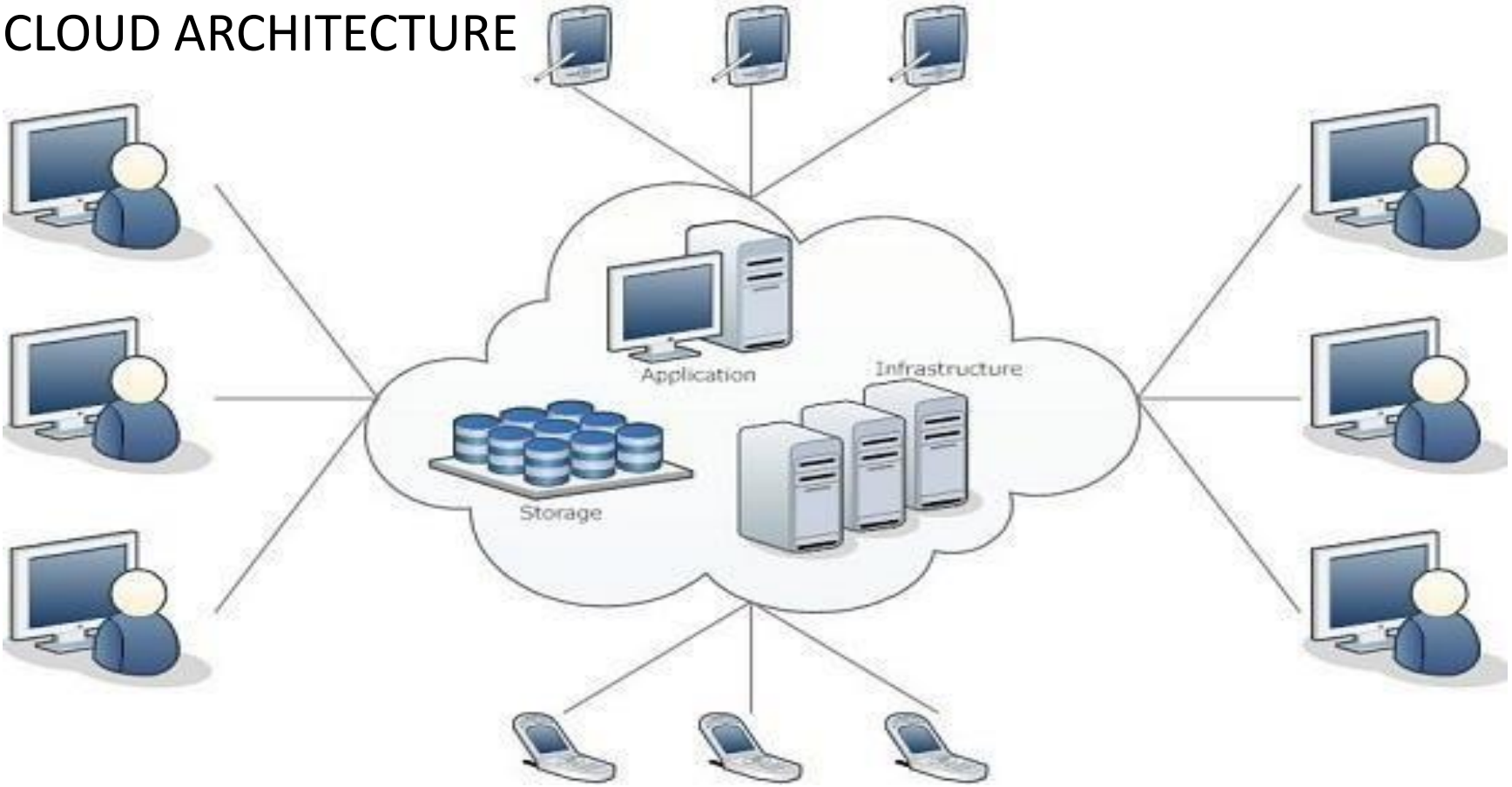

APPLICATIONS
SERVICES
COMPUTER NETWORK
STORAGE (DATABASE)
SERVERS

- Shared pool of configurable computing resources
- On-demand network access
- Provisioned by the Service Provider
- SLA done by the cloud service provider and cloud consumer

- Cloud computing is an umbrella term used to refer to Internet based development and services

- A number of characteristics define cloud data, applications services and infrastructure:
  - **Remotely hosted**: Services or data are hosted on remote infrastructure.
  - **Ubiquitous**: Services or data are available from anywhere.
  - **Commodified**: The result is a utility computing model similar to traditional that of traditional utilities, like gas and electricity - you pay for what you would want!

CLOUD ARCHITECTURE



Cloud Architecture consist of two parts

i) Front end: The front end is used by the client. It contains client-side interfaces and applications that are required to access the cloud computing platforms.

ii) Back end: The back end is used by the service provider. It manages all the resources that are required to provide cloud computing services. It includes a huge amount of data storage, security mechanism, virtual machines, deploying models, servers, traffic control mechanisms, etc.

Thank You