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Name: Harshitha B R

1. Explain the Application of cloud computing

Cloud computing provides various applications in the field of business, data storage and backup services, education, entertainment, management, social media.

Business Applications

Business applications are based on cloud service providers. Today, every organization requires the cloud business application to grow their business.

* **Mail Chimp**

Mail Chimp is an **email publishing platform** which provides various options to **design, send,** and **save**templates for emails.

* **Sales force**

Sales force platform provides tools for sales, service, marketing, e-commerce, and more. It also

provides a cloud development platform.

* **Chatter**

Chatter helps us to **share important information** about the organization in real time.

* **Quick books**

Quick books works on the terminology "**Run Enterprise anytime, anywhere, on any device."** It provides online accounting solutions for the business.

## Data Storage and Backup Applications

Cloud computing allows us to store information like data, files, images, audios, and videos on the cloud and access this information using an internet connection. As the cloud provider is responsible for providing security, so they offer various backup recovery application for retrieving the lost data.

* **Box.com**

Box provides an online environment for **secure content management, workflow,** and **collaboration**. It allows us to store different files such as Excel, Word, PDF, and images on the cloud.

* **Mozy**

Mozy provides powerful **online backup solutions** for our personal and business data. It schedules automatically back up for each day at a specific time.

* **Joukuu**

Joukuu provides the simplest way to **share** and **track cloud-based backup files.** Many users use joukuu to search files, folders, and collaborate on documents.

## Education Applications

Cloud computing in the education sector becomes very popular. It offers various **online distance learning platforms** and **student information portals** to the students.

* **Google Apps for Education**

Google Apps for Education is the most widely used platform for free web-based email, calendar, documents, and collaborative study.

* **Chromebooks for Education**

Chromebook for Education is one of the most important Google's projects. It is designed for the purpose that it enhances education innovation.

* **Tablets with Google Play for Education**

It allows educators to quickly implement the latest technology solutions into the classroom and make it available to their students.

* **AWS in Education**

AWS cloud provides an education-friendly environment to universities, community colleges, and schools.

## Management Applications

Cloud computing offers various cloud management tools which help admins to manage all types of cloud activities, such as resource deployment, data integration, and disaster recovery.

## Toggl

Toggl helps users to track allocated time period for a particular project.

## Evernote

Evernote allows you to sync and save your recorded notes, typed notes, and other notes in one convenient place. It is available for both free as well as a paid version.

## Outright

Outright is used by management users for the purpose of accounts. It helps to track income, expenses, profits, and losses in real-time environment.

## Social Applications

Social cloud applications allow a large number of users to connect with each other using social networking applications such as **Facebook, Twitter, Linkedln,** etc.

* **Facebook**

Facebook is a **social networking website** which allows active users to share files, photos, videos, status, more to their friends, relatives, and business partners using the cloud storage system. On Facebook, we will always get notifications when our friends like and comment on the posts.

* **Twitter**

Twitter is a **social networking** site. It is a **microblogging** system. It allows users to follow high profile celebrities, friends, relatives, and receive news. It sends and receives short posts called tweets.

* **LinkedIn**

LinkedIn is a **social network** for students, freshers, and professionals.

1. Explain Architecture of IAAS

IaaS architecture is the structural design of a computing network that enables the delivery of computing resources as a service via the cloud. Physical resources such as processing capacity and data storage are examples of common components that may be incorporated into a cloud computing environment, under the IaaS (infrastructure as a service) model of IT resource delivery.

As with traditional computing network design, IaaS architecture aims to achieve optimal levels of efficiency, in the delivery of computing services to end users. This requires an architectural design that provides a highly available pool of cloud based IT resources and which also adequately delivers its resources in an elastic or scalable manner, especially during times of peak demand.

Since cloud computing services are delivered to consumers in a manner similar to a utility, organizations that provide IaaS via the cloud need to develop and implement an IaaS architecture that successfully optimizes the use of its physical computing resources, in order to maximize cost savings and/or revenue for the organization.

1. Explain virtualization concept including hypervisors

Virtualization uses software that simulates hardware functionality to create a virtual system. This practice allows IT organizations to operate multiple operating systems, more than one virtual system and various applications on a single server. The benefits of virtualization include greater efficiencies and economies of scale.

Types of virtualization

1. Hardware virtualization
2. Operating system virtualization
3. Server virtualization
4. Storage virtualization

3 types of hardware virtualization

1. Full virtualization
2. Emulation virtualization
3. Para virtualization

Virtual Machine

A hypervisor is loaded on the virtual host to run virtual machines.

Virtual guests run on a virtual host, which provides the physical resources.

An operating system and applications are loaded in the guest.

Hypervisor is a low level program that acts as virtual machine manager

2 types

Type1 hypervisor

Type2 hypervisor

A **hypervisor,** also known as a virtual machine monitor or VMM, is software that creates and runs virtual machines (VMs). A hypervisor allows one host computer to support multiple guest VMs by virtually sharing its resources, such as memory and processing.

1. Explain IAAS, PAAS and SAAS

IAAS

Infrastructure as a Service (IaaS), are self-service models for accessing, monitoring, and managing remote datacenter infrastructures, such as compute (virtualized or bare metal), storage, networking, and networking services. Instead of having to purchase hardware outright, users can purchase IaaS based on consumption, similar to electricity or other utility billing.

PAAS

[Platform as a Service (PaaS)](https://apprenda.com/white-papers/enterprise-paas-for-existing-and-new-apps/?utm_source=library&utm_medium=post&utm_term=saaspaasiaas&utm_campaign=existingandnewapps), are used for applications, and other development, while providing cloud components to software. What developers gain with PaaS is a framework they can build upon to develop or customize applications. PaaS makes the development, testing, and deployment of applications quick, simple, and cost-effective. With this technology, enterprise operations, or a third-party provider, can manage OSes, virtualization, servers, storage, networking, and the PaaS software itself. Developers, however, manage the applications.

SAAS

[Software as a Service (SaaS)](https://apprenda.com/white-papers/saas-hub/?utm_source=library&utm_medium=post&utm_term=saaspaasiaas&utm_campaign=saas-hub), represent the largest cloud market and are still growing quickly. SaaS uses the web to deliver applications that are managed by a third-party vendor and whose interface is accessed on the clients’ side. Most SaaS applications can be run directly from a web browser without any downloads or installations required, although some require plugins.

1. Explain SLAs

A **Service Level Agreement (SLA)** is the bond for performance negotiated between the cloud services provider and the client. Earlier, in cloud computing all Service Level Agreements were negotiated between a client and the service consumer. Nowadays, with the initiation of large utility-like cloud computing providers, most Service Level Agreements are standardized until a client becomes a large consumer of cloud services.

Service Level Agreements are enforceable as contracts, but mostly are agreements or contracts which are more along the lines of an Operating Level Agreement (OLA) and may not have the restriction of law. It is fine to have an attorney review the documents before making a major agreement to the cloud service provider.