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| **Question No:1**  **Define Cloud Computing? And explain their types of cloud computing with some benefits?** | |
| **Ans:**  **Definition: -** | |
|  | Cloud Computing means storing and accessing the data & program on remote server that are hosted on the internet instead of computer like hardware.  Cloud Computing is also referred to as internet-based computing. It is a technology where the resource is provided as internet as user that data i.e., Stored can be files, images, documents on any other storable documents.  Example: storage, Backup & resource of data delivery of software on demand development of new applications & services, streaming videos & audios.  **TYPES OF CLOUD COMPUTING SERVICES** |

There are different types of cloud computing services they are following as below.

1. Infrastructure as a Service [IAAS]
2. Platform as a Service [PAAS]
3. Software as a Service [SAAS]
4. Function as a Service [FAAS]

**Infrastructure as a Service**: this is the service provide by Cloud to users to provide infrastructure like Hardware, database etc for use by user.

**Examples**:

Amazon Web Services: AWS one of the most successful cloud phase services in amazon which is an Infrastructure as a service offering that pays rent for virtual computer in Amazon Infra structure.

**Benefits:**

the following are the benefits of Infrastructure as a Service. they are

1. **Flexibility & control:**

Infrastructure as a Service comes up with providing virtualized computing resources such as Virtual Machine, storage & networking uses with controls over the Operating System Application.

1. **Reduce Expenses of Hardware:**

Infrastructure as a Service provides Business Cost savings with the elimination of physical Infrastructure & Investment making it Cost Effective.

1. **Scalability of Resources:**

Cloud provides in Scaling of Hardware Resources up(or)down as per demand optimal performance with cost efficiency.

**Platform as a Service:** this is a service provide by cloud to user which gives the Platforms like Virtual Machines and Instances.

**Examples:**

Microsoft Azure Cloud Platform: Microsoft is creating the Azure Platform which enabled the dot net framework application to run over the internet as an alternative platform for Microsoft developer. This is the classical platform as a service.

**Benefits:** the following are the benefits of Platform as a Service they are

1. **Simplify the development:**

Platform as a Services offers application development by keeping underlying infrastructure as a abstraction.it helps the developer to completely focus on application logic(code) and background operations are completely managed by the platform.

1. **Exchanging Efficiency productivity:**

Platform as a Service lower the management of infrastructure complexity spreading up the execution time & bringing the update quickly to the market by stream living the development process.

1. **Automation of Scaling:**

Management of Resource scaling the programming workload efficiency is ensured by Platform as a Service.

**Software as a Service:** this service is provided by cloud by sharing or giving service of operating systems or software to the users.

**Example:**

Google Cloud Platform [GCP]: google has a build a world wide network of the data centres to service its search engine from this service.

Google has captured the world advertisement resources by using that resource google offer free software to the user based on Infrastructure is called as “Software as a Service”.

**Benefits:**  the following are the benefits of Software as a Service they are

1. **Collaboration & Accessibility:**

Software as a Service helps users to easily access applications without having the requirements of local installation. It is fully managed by the Software working as a service over the internet effortless corporation & easy of access.

1. **Automations of Updates:**

Software as a Service provides as manage the handling of Software Maintenance with automating latest updates ensuring users gain experience with the latese features & security features.

1. **Cost Efficiency:**

Software as a Service acts as a cost effective solution by reducing the overhead of it support by eliminating the need for individual Software Licenses.

**Function as a service:** it is a service given cloud to users of the functions like software, platforms and infrastructure etc.

**Benefits:** The followings are the benefits of the Function as a service.they are

1. **Event-driver Execution:**

Function as a service helps in the maintenance of servers & infrastructure making users worried about it.

Function as a service facility the developers to run code as respond to the events.

1. **Cost efficiency:**

Function as a service cost efficiency by coming up with the principle “pay as per you run” for computing resource users.

1. **Scalability & agility:**

It service this architecture scale effortless with handling work load promoting agility from development & deployment.

**Question No:2**

**What is Software Development Life cycle? & explain their types along with architecture?**

**Ans:**

**Definition:-**

SDLC means Software Development Life Cycle is the cost effective & time efficient process that development is to Design & build high Quality of software.

Goal of SDLC is to minimize projectors to forward planning so that software meets customer expectations during production & behind this methodology outlines a series of step that divide the software development process into task you can assigned complete & measure.

**Types of SDLC:**

There are two types of software development life cycles they are

1. Water Fall Model
2. Agile Model

**Water Fall Model:**

The Water fall model an aging all the phase sequently so that each new phase depends on the outcome of the previous phase. Conceptually the design flow from one phase down to next phase.

**Architecture of Water Fall model:**

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| |  | | --- | | ie; Water Fall model |   Maintenance  Deploy  Test  Develop  Design  Requirement |

**Agile Model:**

the agile model arranges the SDLC phases into several development cycle that is it rates to phase rapidly delivery only small software changes in each cycle. They continuous evaluate requirements plants & time so that they can respond Quickly to change.

The agile model is for it rating & incremental making it more efficient for other process model.

**Architecture of Agile model:**

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| |  | | --- | | i.e. Agile Model | |

**Question No:3**

**Explain about Merits & Demerits of cloud computing in briefly?**

**Ans:**

The following are Merits and Demerits of cloud computing. They are

**Merits of Cloud Computing: -**

Cloud computing having the following merits. they are

1. **Cost Efficiency:**

Cloud computing provides flexible pricing to the users with the “pay as you go” model. It helps in listening capital expenditure of infrastructure particularly for small hand, medium-sized business companies.

1. **Flexibility & Scalability:**

Cloud services facilities the scaling of resource phases on demand. It ensures the efficiency of business in handling various workload without the need of the large amount of investment in hardware during the periods of low demand.

1. **Collaboration & accessibility:**

Cloud computing provide easy access to data & application in any where over the internet it encourage the collaboration & accessibility in participates from different location through shared project in Real time resulting in Quality & productive output.

1. **Automatic Maintenance & update:**

AWS cloud take care of infrastructure management & keeping with the latest software automatically making update they is new version through this AWS guarantee the companies always having access the newest technology focus on completely an infrastructure & technologies.

**Demerits of Cloud Computing: -**

Cloud computing having the following demerits. they are

1. **Security Concerns:**

The storing of sensitive data on external server raised more security concern which is one of the main drawback of cloud computing.

1. **Downtime & reliability:**

Even though cloud services are usually dependable they may also have unexpected interception this might be raised due to network issues. Description in cloud platform which navigate effect on business operation creating issue for users accessing their application.

1. **Cost management complexity:**

The main benefit of cloud service is an pricing model that coming with “pay as you go” but also lead that to complexity on without proper careful monitoring & utilization of resource optimisation organisation may end up with unexpected cost as per their use scale understanding & control uses of cloud service requires on going attention.

**Question No:4**

**Define Cloud security? And Explain about Types of Cloud securities?**

**Ans:**

**Cloud Security:**

Cloud security recommend to measure & practice designer to protect data application & infrastructure in cloud computing environments.

**Types of Cloud Securities:**

**The following** are the types of cloud computing we are used. They are

1. Data Encryption
2. Access Control
3. Multi-factor authentication
4. **Data Encryption:**

Encryption is essential for securing the data in cloud it ensures that data remains unreadable & Unauthorize user even it is an interceptable.

1. **Access control:**

Implementing strict access control &authentication mechanism helps ensuring that only authorised user access sensitive data & resources in cloud.

1. **Multi factor Authentication:**

MFA had an extra layer of security by requiring user to provide multi forms of verification such as password, Biometric (or) security tokens before gaining access to cloud services.

**Question No:5**

**Define Devops? & give an architecture of Devops?**

**Ans:**

**Devops: -**

It is a software development approach enforcing collaboration, automation & continuous delivery of very high Quality product to customer Quickly & efficiently.

Devops breakdown between Development & operation team to enable seamless communication faster time to market& include customer satisfaction.

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**Question No:6**

**Define Source Code management? Is git is best example for source code management ? and why we used?**

**Ans:**

**Source Code management: -**

SCM is one of the key of devops.it is a practice of tracking & managing of version of source code. Git is considered as a one of the best tool of version control of source code and also it allows devops to collaborate , manage code & implement CICD with core Quality & infrastructure as a code

Yes, GIT is the one of the best example for source code management because

**Global Information Tracker:**

GIT is a distributed version control system (DVCS) that allows developer to track changes in their code base collaborate with others & manage different version of that project efficiently.

**Why GIT**

GIT is used for the following reasons they are

1. **Version control**:

GIT helps in tracking changes allowing you to revert to previous states if something gets wrong.

1. **Collaboration**:

GIT enables multiple developers to work on a project simultaneously without interfering with each other work.

1. **Backup**:

Your entire project history is saved in a git repository providing a backup of all version.

1. **Branching & merging**:

Git branching model allows you to experiment with new features (or) fix independent error from the main project.

1. **Open-source project:**

Most open source project use git version control learning git allows you to contribute to this project.

1. **Industry standard**:

Git is widely used in software industry making it an essential skill for developers.

**Question No:7**

**Explain GIT HUB? And also difference between Git and Github?**

**Github:** github is a posting services for git repositories & if you have a project posted on github you can access & download project

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| **S.No.** | **Git** | **GitHub** |
| 1. | Git is a tool. | GitHub is a service. |
| 2. | Git is a command-line tool | GitHub is a graphical user interface |
| 3. | Git is installed locally on the system | GitHub is hosted on the web |
| 4. | Git is maintained by linux. | GitHub is maintained by Microsoft. |
| 5. | Git is focused on version control and code sharing. | GitHub is focused on centralized source code hosting. |
| 6. | Git is a version control system to manage source code history. | GitHub is a hosting service for Git repositories. |
| 7. | Git was first released in 2005. | GitHub was launched in 2008. |
| 8. | Git has no user management feature. | GitHub has a built-in user management feature. |
| 9. | Git is open-source licensed. | GitHub includes a free-tier and pay-for-use tier. |
| 10. | Git has minimal external tool configuration. | GitHub has an active marketplace for tool integration. |
| 11. | Git provides a Desktop interface named Git Gui. | GitHub provides a Desktop interface named GitHub Desktop. |
| 12. | Git competes with CVS, Azure DevOps Server, Subversion, Mercurial, etc. | GitHub competes with GitLab, Bit Bucket, AWS Code Commit, etc. |

**Question no:8**

**What is Web Hosting?**

**Ans:**

**Webhosting:**

It is a service that provides the resource to a website & their Necessary Technologies for the website that displays over the internet. When the user hit any request then request goes to the server there pc connected to server that their website is stored then the server send website data to the user which is displayed on their screen & allows to view in their web browser it’s like rent a space on computer to store all the files & data of your website so others can visit in online.