Azure fundamental assignment 1

1. **What is cloud computing? What is Azure?**

    - Cloud computing is the delivery of on-demand computing services -- from applications to storage and processing power -- typically over the internet and on a pay-as-you-go basis.

    - The Azure cloud platform is more than 200 products and cloud services designed to help you bring new solutions to life—to solve today's challenges and create the future. Build, run and manage applications across multiple clouds, on-premises and at the edge, with the tools and frameworks of your choice.

2. **How to create an Azure account list the steps and requirements**?

    1. Go to the Azure Home Page.

    2. Click on Free Azure Account on the top right corner.

    3. Click on Start Free.

    4. Sign-in/Sign-up for a Microsoft account using an email address and password.

    5. Enter your Country/Region and Date of Birth and click next.

    6. Enter the verification code received on the email address and click next.

    7. Type the captcha you see on your screen and click on next.

8. You'll be redirected to the Azure Sign-up page. Enter your Region, Name, Phone number, Email address. Note: You should use the same email address for Azure sign-up and for the Microsoft account.

9. Verify your phone number by clicking Text Me or Call Me and enter the verification code received.

10. Enter the payment details. Make sure you have a Master Card/American Express/ Visa Credit card and international payments should be enabled.

11. Check the Terms and Conditions and click Sign-up.

12. You have successfully created a Microsoft Azure free account and now have a lumpsum balance of $200.

13. Click on Portal on the top right corner of the screen. You'll be redirected to the Azure portal.

Also Check: What is the difference between Data Science VS Data Analytics.

14. If you have exhausted your free credit then you have to move to the Pay as you go subscription policy.

3. Describe different types of cloud models.

Public Cloud

Public clouds are managed by third parties which provide cloud services over the internet to the public, these services are available as pay-as-you-go billing models.

They offer solutions for minimizing IT infrastructure costs and become a good option for handling peak loads on the local infrastructure. Public clouds are the go-to option

for small enterprises, which are able to start their businesses without large upfront investments by completely relying on public infrastructure for their IT needs.

The fundamental characteristics of public clouds are multitenancy. A public cloud is meant to serve multiple users, not a single customer. A user requires a virtual computing environment that is separated, and most likely isolated, from other users.

Private cloud

Private clouds are distributed systems that work on private infrastructure and provide the users with dynamic provisioning of computing resources. Instead of a pay-as-you-go model in private clouds, there could be other schemes that manage the usage of the cloud and proportionally billing of the different departments or sections of an enterprise.

Hybrid cloud:

A hybrid cloud is a heterogeneous distributed system formed by combining facilities of public cloud and private cloud. For this reason, they are also called heterogeneous clouds.

A major drawback of private deployments is the inability to scale on-demand and efficiently address peak loads. Here public clouds are needed. Hence, a hybrid cloud takes advantage of both public and private clouds.

Community cloud:

Community clouds are distributed systems created by integrating the services of different clouds to address the specific needs of an industry, a community, or a business sector.

In the community cloud, the infrastructure is shared between organizations that have shared concerns or tasks. The cloud may be managed by an organization or a third party.

4. Describe different cloud services.

There are three main service models of cloud computing – Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS). There are clear differences between the three and what they can offer a business in terms of storage and resource pooling, but they can also interact with each other to form one comprehensive model of cloud computing.

IaaS (Infrastructure as Service)

This is the most common service model of cloud computing as it offers the fundamental infrastructure of virtual servers, network, operating systems and data storage drives. It allows for the flexibility, reliability and scalability that many businesses seek with the cloud, and removes the need for hardware in the office. This makes it ideal for small and medium sized organisations looking for a cost-effective IT solution to support business growth. IaaS is a fully outsourced pay-for-use service and is available as a public, private or hybrid infrastructure.

PaaS (Platform-as-a-Service)

This is where cloud computing providers deploy the infrastructure and software framework, but businesses can develop and run their own applications. Web applications can be created quickly and easily via PaaS, and the service is flexible and robust enough to support them. PaaS solutions are scalable and ideal for business environments where multiple developers are working on a single project. It is also handy for situations where an existing data source (such as CRM tool) needs to be leveraged.

SaaS (Software as a Service)

This cloud computing solution involves the deployment of software over the internet to variousbusinesses who pay via subscription or a pay-per-use model. It is a valuable tool for CRM and for applications that need a lot of web or mobile access – such as mobile sales management software. SaaS is managed from a central location so businesses don’t have to worry about maintaining it themselves, and is ideal for short-term projects.

5. What are some cloud computing advantages?

1) Back-up and restore data

Once the data is stored in the cloud, it is easier to get back-up and restore that data using the cloud.

2) Improved collaboration

Cloud applications improve collaboration by allowing groups of people to quickly and easily share information in the cloud via shared storage.

3) Excellent accessibility

Cloud allows us to quickly and easily access store information anywhere, anytime in the whole world, using an internet connection. An internet cloud infrastructure increases organization productivity and efficiency by ensuring that our data is always accessible.

4) Low maintenance cost

Cloud computing reduces both hardware and software maintenance costs for organizations.

5) Mobility

Cloud computing allows us to easily access all cloud data via mobile.

6) IServices in the pay-per-use model

Cloud computing offers Application Programming Interfaces (APIs) to the users for access services on the cloud and pays the charges as per the usage of service.

7) Unlimited storage capacity

Cloud offers us a huge amount of storing capacity for storing our important data such as documents, images, audio, video, etc. in one place.

8) Data security

Data security is one of the biggest advantages of cloud computing. Cloud offers many advanced features related to security and ensures that data is securely stored and handled.

6. Differentiate Capital expenses vs. operating expenses.

Capital expenditures are major purchases that will be used beyond the current accounting period in which they're purchased. Operating expenses represent the day-to-day expenses designed to keep a company running. Because of their different attributes, each is handled in a separate manner.

OPEX are short-term expenses and are typically used up in the accounting period in which they were purchased. This means that they are paid weekly, monthly, or annually. CAPEX costs are paid upfront all at once. The returns on CAPEX take a longer time to realize, for example, machinery for a new project, whereas the returns of OPEX are much shorter, such as the work that an employee does on a daily basis to earn their wages.

If a company chooses to lease a piece of equipment instead of purchasing it as a capital expenditure, the lease cost would be classified as an operating expense.