**Azure fundamental assignment 1**

1. What is cloud computing? What is Azure?

Cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet (“the cloud”) to offer faster innovation, flexible resources, and economies of scale.

We typically pay only for cloud services you use, helping lower your operating costs, run your infrastructure more efficiently and scale as your business needs change.

**Azure** is a [cloud computing](https://en.wikipedia.org/wiki/Cloud_computing) service operated by [Microsoft](https://en.wikipedia.org/wiki/Microsoft) for application management via Microsoft-managed [data centres](https://en.wikipedia.org/wiki/Data_center).

It provides [software as a service (SaaS)](https://en.wikipedia.org/wiki/Software_as_a_service), [platform as a service (PaaS)](https://en.wikipedia.org/wiki/Platform_as_a_service) and [infrastructure as a service (IaaS)](https://en.wikipedia.org/wiki/Infrastructure_as_a_service) and supports many different [programming languages](https://en.wikipedia.org/wiki/Programming_language), tools, and frameworks, including both Microsoft-specific and third-party

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

To create and use Azure services, you first need to sign up. If you’ve never tried or paid for Azure before, you can sign up for the Azure free account.

Steps to Sign up for a free account

* In a web browser, go to <https://azure.microsoft.com/free>.
* Scroll down through the page to learn more about the benefits and free services available.
* Select **Start free**.
* Sign in with your Microsoft or GitHub account or create a free Microsoft account.
* On the **About you** page, select your correct country or region. Enter your first and last name, email address, and phone number. Depending on your country, you might see additional fields, such as a VAT number. Select **Next** to continue.
* On the **Identity verification by phone** screen, select your country code, and type the number of a telephone to which you have immediate access.
* You have the option of text or callback to obtain a verification code. Select the relevant button, type the code in the **Verification code** box, and select **Verify code**.
* If the verification code is correct, you're asked to enter details of a valid credit card. Enter the card information and select **Next**.
* The last step is to review the agreement and privacy statement then select **Sign up**.

1. Describe different types of cloud models.

Different cloud Models: -

**Public cloud**

Public clouds are owned and operated by a third-party cloud service provider, which delivers computing resources such as servers and storage over the Internet. Microsoft Azure is an example of a public cloud. With a public cloud, all hardware, software and other supporting infrastructure are owned and managed by the cloud provider. You access these services and manage your account using a web browser.

**Private cloud**

A private cloud refers to cloud computing resources used exclusively by a single business or organisation. A private cloud can be physically located on the company’s on-site data centre. Some companies also pay third-party service providers to host their private cloud. A private cloud is one in which the services and infrastructure are maintained on a private network.

**Hybrid cloud**

Hybrid clouds combine public and private clouds, bound together by technology that allows data and applications to be shared between them. By allowing data and applications to move between private and public clouds, hybrid cloud gives businesses greater flexibility and more deployment options.

1. Describe different cloud services.

* [software as a service (SaaS)](https://en.wikipedia.org/wiki/Software_as_a_service),
* [platform as a service (PaaS)](https://en.wikipedia.org/wiki/Platform_as_a_service) and
* [infrastructure as a service (IaaS)](https://en.wikipedia.org/wiki/Infrastructure_as_a_service)

1. What are some cloud computing advantages?

Advantages :-

**1. Cost**

Cloud computing eliminates the capital expense of buying hardware and software and setting up and running on-site data centres – the racks of servers, the round-the-clock electricity for power and cooling, the IT experts for managing the infrastructure. It adds up quickly.

**2. Speed**

Most cloud computing services are provided as self-service and on demand, so even vast amounts of computing resources can be provisioned in minutes, typically with just a few mouse clicks, giving businesses a lot of flexibility and taking the pressure off capacity planning.

**3. Global scale**

The benefits of cloud computing services include the ability to scale elastically. In cloud speak, that means delivering the right amount of IT resources – for example, more or less computing power, storage, bandwidth – exactly when it’s needed, and from the right geographic location.

**4. Productivity**

On-site data centres typically require a lot of ‘racking and stacking’ – hardware setup, software patching and other time-consuming IT management chores. Cloud computing removes the need for many of these tasks, so IT teams can spend time on achieving more important business goals.

**5. Performance**

The biggest cloud computing services run on a worldwide network of secure data centres, which are regularly upgraded to the latest generation of fast and efficient computing hardware. This offers several benefits over a single corporate data centre, including reduced network latency for applications and greater economies of scale.

**6. Reliability**

Cloud computing makes data backup, disaster recovery and business continuity easier and less expensive because data can be mirrored at multiple redundant sites on the cloud provider’s network.

1. Differentiate Capital expenses vs. operating expenses

**An**[**operating expense**](https://www.investopedia.com/terms/o/operating_expense.asp)**(OpEx)** is an expense required for the day-to-day functioning of a business. This means a business incurs an operating expense on a recurring basis. Operating expenses include things like insurance, payroll, and marketing.

While a  [**capital expense**](https://www.investopedia.com/terms/c/capitalexpenditure.asp)**(CapEx),** on the other hand, is incurred to create a benefit in the future. They are long-term in nature and are generally used to acquire things like property, equipment, and technology.