What is Docker?

Docker is an open platform for developing, shipping, and running applications. Docker enables you to separate your applications from your infrastructure so you can deliver software quickly. With Docker, you can manage your infrastructure in the same ways you manage your applications. By taking advantage of Docker's methodologies for shipping, testing, and deploying code, you can significantly reduce the delay between writing code and running it in production.

The Docker platform

Docker provides the ability to package and run an application in a loosely isolated environment called a container. The isolation and security lets you run many containers simultaneously on a given host. Containers are lightweight and contain everything needed to run the application, so you don't need to rely on what's installed on the host. You can share containers while you work, and be sure that everyone you share with gets the same container that works in the same way.

Docker provides tooling and a platform to manage the lifecycle of your containers:

- Develop your application and its supporting components using containers.
- The container becomes the unit for distributing and testing your application.
- When you're ready, deploy your application into your production environment, as a container or an orchestrated service. This works the same whether your production environment is a local data center, a cloud provider, or a hybrid of the two.

What is Containerisation?

Containerisation is the process of encapsulating an application and its dependencies into a container. Containers are isolated environments that share the same operating system kernel but run independently of one another. This makes them more efficient than virtual machines, as they require fewer system resources and start up faster.

Containerisation improves scalability, portability, and consistency across development, testing, and production environments.

What is an Image?

An image is a lightweight, standalone, and executable package that includes everything needed to run a piece of software—code, runtime, libraries, environment variables, and configuration files. In Docker, images act as blueprints for containers. Once an image is built, it can be used to create multiple containers. Images can be versioned, shared, and stored in repositories for easy reuse.

What is Dockerhub?

Docker Hub is a cloud-based registry service where users can find, share, and store Docker images. It acts as a centralized repository that allows developers to upload their custom images or download pre-built images maintained by the Docker community and official vendors. Docker Hub simplifies collaboration and accelerates application deployment by providing a trusted source for container images.