Container Orchestration and Infrastructure Automation

Unit 1:

**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.

**Containers in Docker:**

Docker provides the ability to package and run an application in a loosely isolated environment called a container. The isolation and security lets you to 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 daemon

Docker daemon runs on the host operating system. It is responsible for running containers to manage docker services. Docker daemon communicates with other daemons. It offers various Docker objects such as images, containers, networking, and storage.

## **Docker architecture**

Docker uses a client-server architecture. The Docker client talks to the Docker daemon, which does the heavy lifting of building, running, and distributing your Docker containers. The Docker client and daemon can run on the same system, or you can connect a Docker client to a remote Docker daemon. The Docker client and daemon communicate using a REST API, over UNIX sockets or a network interface.

**Docker file:**

Text document which contains all the command that user run on the command line to assemble an image.

**Docker Image:**

Template to create docker container.

#### **Containers**

A container is a runnable instance of an image. You can create, start, stop, move, or delete a container using the Docker API or CLI. You can connect a container to one or more networks, attach storage to it, or even create a new image based on its current state.

.

