**Problem Statement**

Docker is an open platform for developers and sysadmins to build, ship, and run distributed applications. The engineer need to learn the below topics and experiment the same.

* Overview of Docker
* Installing the Docker Engine
* Creating our first Docker container
* Building Docker images
* Storing and retrieving Docker images from Docker Hub
* Building containers from images
* Using Docker for sandboxing and testing
* Deploying BroadLeaf Application with Docker

**Assessments**

**Level 0**

**1. Setup ‘NGINX’ server using docker.**

- NGINX is a popular lightweight web application that is used for developing server-side applications.

- Use the official nginx image from docker hub registry.

- Pull image and run the docker container on docker host.

- Open then 8080 port.

- Try accessing http://dockerhost\_ip:8080 and check installation.

**2. Setup simple hello world website using ‘NGINX’ server using docker.**

- NGINX is a popular lightweight web application that is used for developing server-side applications.

- Use the nginx server to host your simple ‘hello world‘ website

- Create simple html page. Say an ‘Index.html’ page.

- Pull image and run the docker container on docker host with correct commands.

- Open then 8080 port.

- Try accessing http://dockerhost\_ip:8080/index.html and check the welcome message.

**3. Setup ‘MongoDB’ using docker.**

- MongoDB is a famous document-oriented database that is used by many modern-day web applications.

- Use the official image from docker hub registry.

- Pull image and run the docker container on docker host.

- Open then required port while running container.

- Try connecting to mongodb using desktop clients to verify.

**Level 1**

**1. Create your own dockerfile to install Python.**

- Create your own dockerfile to install python

- Expose required ports.

- Verify installation.

- Publish your image to docker hub registry.

**2. Create your own dockerfile to setup Elasticsearch.**

- Create your own dockerfile to setup single node ES cluster.

- Expose required ports.

- Install ES plugins.

- Verify installation by accessing through web browser.

- Publish your image to docker hub registry.

**Level 2**

**1. Use Docker-Compose to setup multi container ELK stack.**

- Create your own docker compose file to setup Elasticsearch, logstash and Kibana (ELK) stack.

- Expose required ports as needed.

- Create the stack and test it.

**References: https://hub.docker.com/explore/**