Cloud Computing – Lab 1

Shanjay Kailayanathan

1. Done.

2. Done.

3. Done.

4/5. **What are docker image, container, and registry?**

* A docker image is a file that is used to execute code within a Docker container.
* A docker container is used to package the code and all of its libraries & dependencies so that an application can be easily shared and executed on various platforms.
* A docker registry is used to store and distribute Docker images.

6. Docker commands used –

* *docker version* - used to view docker version
* *docker images* – used to view all docker images in the directory
* *docker build -t* – builds a Docker file with name and tag in the “name:tag” format
* *docker run* – used to run built Docker files
* *docker run -d* – used to run Docker as a background process and prints container ID
* *docker ps* – used to list the containers that are actively running
* *docker ps -a* - used to list the containers that are actively and previously running

7. To stop and delete those two containers, you can use the following two commands –

* *docker stop <ContainerID>*
* *docker rm <ContainerID>*

8. Done.

9.

7/8. A multi-container docker application is one with multiple containers such as an app and a database.

9. The way containers are used to communicate with each other is through networking and creating bridges.

10. To stop a Docker application and delete its images you use docker rm -f

11. New Docker commands used –

* *mvn clean install* –
* *docker run –name*
* *docker run -d -p*
* *docker rm -f*
* *docker-compose up -d*
* *docker network*
* *docker network connect*
* *docker network create*
* *docker logs*
* *docker image pull*

12. Done.

13. Done.

10. Done

11. Done.

12. Done.

13. GCP shell commands –

* *gcloud config set project*
* *gcloud config set compute/zone*
* *gcloud container clusters create*
* *gcloud container clusters get-credentials gk-cluster*
* *kubectl create deployment*
* *kubectl expose deployment*
* *kubectl get pods*
* *kubectl get service*

14. Done.

15. Done.

16/17.

* A Kubernetes pod is a single instance of a running process in a cluster.
* A Kubernetes service is an abstraction for a deployed group of pods in a cluster.
* A Kubernetes node is a working machine either virtual or physical.
* A Kubernetes deployment is used to create or modify instances of the pods that holds applications within a container.

18. A replica is when you create a pod with multiple containers into a Kubernetes cluster.

19. Some types of Kubernetes services are –

* LoadBalancer which exposes the service using the cloud provider's load balancer.
* NodePort which exposes a service on static port of each node’s IP.
* ClusterIP which exposes services which are only accessible from within a cluster.

Video links: <https://drive.google.com/drive/folders/13R7ECDNoDz0qB_YLas8csSWqufIalUJw?usp=sharing>