**3. Kubernetes:**   
1. What are different types of services?

a. Cluster IP Service: this is used as a default service in a Kubernetes.it provides internal connectivity between different components of Kubernetes.

b. load balancer service: it creates unique IP address which is available by external networks. It then redirects incoming traffic and only IP address can get entry to the Kubernetes cluster.

c. Node port service: this is used to expose the application to end user through specific ports to the outside of the cluster and also allows the traffic from the outside to reach the application with the help of ports.

2. What is a pod?

In Kubernetes lowest level of the deployment is pod. This tells how to run the containers.

Here in Kubernetes, we will use pod instead of container.it might be single or multiple containers.

This tells what are the specification of container when we write yaml file.

3. Create a pod with the above created custom image when a pod dies k8s should automatically restart?

kind: ReplicationController

apiVersion: v1

metadata:

name: myreplica

spec:

replicas: 2

selector:

myname: assignment

template:

metadata:

name: testpod6

labels:

myname: assignment

spec:

containers:

- name: c00

image: ubuntu

**2. Docker:**   
1. What is docker and why do we need it?

Docker is the open source flat form, which process of creating abstraction layer that provisioned to create containers.

Using a docker can build container images, run the images to create the container and also push these container to Docker hub.

2. Write a docker file for a sample Java/python application.

FROM python:3.7

RUN pip install -r requirements.txt

WORKDIR /app

COPY . /app

ENV PYT\_ENV=production

CMD ["python", "./your-daemon-or-script.py"]

3. What is the docker lifecycle?

There are three important things:

1. Docker build = builds docker images from docker file.
2. Docker run = runs containers from docker images
3. Docker push = push the container image to public/private registries to share the docker image.
4. What is the difference between an image and a container?

Images: an image is a read only template with instruction for creating a Docker container. An image is based on another image, with some additional features.

Container: where a container is a standard unit of software that packages up code and all its dependencies so that applications run quickly and constantly from one environment to another.

5. How to check docker container logs? Provide the command for the same

docker log container1

where container1= container id

**1. Linux:**

4. How to check all the running processes from a server?

1. Open Terminal -Access the server through a terminal (SSH if it's a remote server).

2. Use the ps Command-This command displays information about active shows a detailed list of all running processes.

3. Use the top Command-This command provides a real-time view of the running servers.

5. Provide the command to delete all the files older than X days inside a specific directory.

To delete all files older than X days in a specific directory, we can use the FIND command in a Unix-based system. Replace X with the number of days and /path/to/directory with your target directory.

6. Create a shell script to identify the process ID a. script should as a user input for process ID b. If the process exists, the script should print the process ID and exit c. If the process doesn't exist script should print the process doesn't exist and asks for another input

1. The script starts an using while true; do ... done.

2. It prompts the user to enter a process ID (read -p "Please enter a process ID: " pid).

3. It checks if the process exists using ps -p $pid > /dev/null. If the process exists, it prints a confirmation message and exits the script (exit 0).

4. If the process doesn't exist, it prints a message and the loop continues, prompting the user for another input.

2. How to install a package on a Linux server when there is no internet connection?

If I have RPM file or yum repo in my local machine or any machine then by running the command we can install a package.

yum localinstall <path to rpm file>

3.  How to access specific folders of Server A from Server B and Server C?

Can simply create a security group and then add an inbound rule to allow all traffic from its own security group and then add these security in both instance to share data with each other but there is another better approach for this is to use FSx in aws, this helps to store and access the file and folders.

1. Provide steps to create a directory inside a directory where the parent directory does not exist.

Command = mkdir -p d1/d2

**4. CI/CD:**   
1. Set up a pipeline (Github actions/Gitlab runner/ Jenkins or any open source tool) to build, test, create a docker image, publish and deploy to k8s. Use the application present in this public repo <https://github.com/apiwizlabs/wizdesk>.

pipeline {

agent any

stages {

stage ("code cloning") {

steps {

echo "cloning the code"

git url: https://github.com/apiwizlabs/wizdesk.git , branch: “main”

}

}

stage ("build the code") {

steps {

echo "building the code"

sh “docker build -t public .”

}

}

stage ("Pushing the code to dockerhub") {

steps {

echo "pushing the code to doccker hub"

withCredentials{[usernamePassword]}

}

}

stage ("deploy the code") {

steps {

echo "deploying the code"

sh “docker run -d -p 8080:8080 apiwizlabs/public

}

}

}

}

2. Automate to spin up a network and virtual machines. Install the Nginx package and start the service(any cloud)

Docker file

vi filename

From node:14

WORKDIR /app

package-lock.json files

COPY package\*.json ./

RUN npm install

COPY . .

RUN npm run build

FROM nginx:alpine

COPY --from=0 /app/build /usr/share/nginx/html

EXPOSE 80

CMD ["nginx", "-g", "daemon off;"]