

## ASSIGNMENT-2

→ Write down the steps for the following:

1) Create EC2 instance

→ Step 1:- login and access to AWS service.

Step 2:- Choose AMI

Step 3:- Choose EC2 Instance Type.

Step 4:- Configure Instance.

Step 5:- Add storage.

Step 6:- Tag Instance.

Step 7:- Configure Security Groups.

Step 8:- Review Instances.

2) Connect to windows instance.

Step 1) Open the Amazon EC2 console at  
<http://console.aws.amazon.com/ec2>.

Step 2) In navigation pane, select instances.  
 Select the instance and then choose Connect.

Step 3) On the Connect to instance page,  
 choose RDP client tab, and Then  
 choose Get password.

Step 4) choose Browse and navigate to private key (.pem) file you create when you launched the instance. Select the file and choose open to copy the entire

Contents of the file to this window.

Step 5: Choose Decrypt password. The Console displays the default administrator password for the instance under password, replacing Copy password link shown previously. Save the password in a safe place. This password is required to connect to the instance.

Step 6: choose Download remote desktop file. Your browser prompts you to either open or save RDP shortcut file. When you finished downloading the file, choose cancel to return to instances page.

Step 7: You may get a warning that the publisher of the remote connection is unknown. choose Connect to Continue to connect to your instance.

Step 8: The administration account is chosen by default. Copy and paste the password that you saved previously.

Step 9: Due to the nature of self-signed certificate, you may get a warning that the security certificate could not be authenticated. Use following steps to verify identity of remote computer or simply choose Yes. (Windows)

### 3) Connect to linux instance.

Step 1:- In a terminal window, use the ssh command to connect to the instance. You specify the path and file name of private key (.pem), the user name for your instance, and public DNS name or IPv6 address for your instance.

- To connect using your instance's public DNS name, enter:

```
ssh -i /path/my-key-pair.pem my-instance-
user-name@my-instance-public-
dns-name.
```

- To connect using IPv6 address, enter:

```
ssh -i /path/my-key-pair.pem my-instance-
user-name@my-instance-IPv6-address.
```

Step 2:- Verify that the fingerprint in the security alert matches fingerprint that you previously obtained (optional). Get the instance fingerprint. If not matched someone might be attempting a "man-in-the-middle" attack. If they match, continue to next step.

Step 3 Enter Yes.

#### 4) Create S3 Bucket:

Step 1:- Sign in to the preview version of the Aws management console.

Step 2- Under Storage and Content Delivery, choose S3 to open Amazon S3 console.

Step 3:- From the Amazon S3 console dashboard, choose Create Bucket.

Step 4 On Create a Bucket, type a bucket name in Bucket Name. The bucket name you choose must be globally unique across all existing bucket names in Aws S3.

Step 5 On Region, choose Oregon.

Step 6 Choose Create.

When Amazon S3 successfully creates your bucket, the console displays your empty bucket in Bucket pane.

#### 5) Send an Email using SES

Step 1 Sign in to Aws management Console and open Aws SES Console at <https://console.aws.amazon.com/ses>.

Step 2 On navigation pane on left side of Amazon SES console, under Identity management, choose Email addresses to view the email addresses that you verified in verifying email addresses in AWS SES.

Step 3 On list of identities, check the box next to email address that you have verified.

Step 4 choose Send a Test Email.

Step 5 For send test email, choose Email Format. Two choices are :- Formatted & Raw.

Step 6 For send test email, fill out the rest of the fields. If you are still in AWS SES Sandbox, make sure that address in To field is a verified email address.

Step 7 Choose send Test Email.

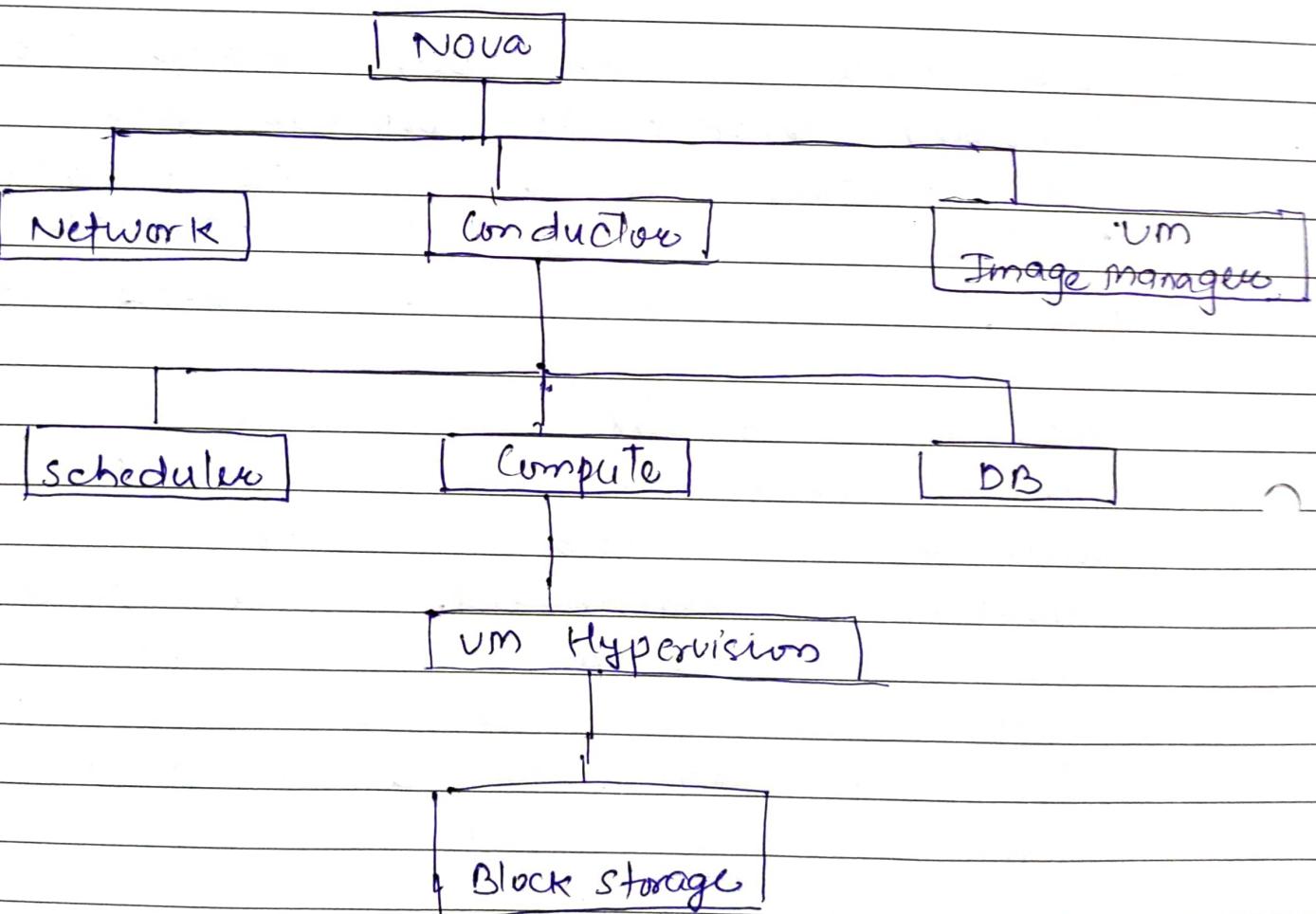
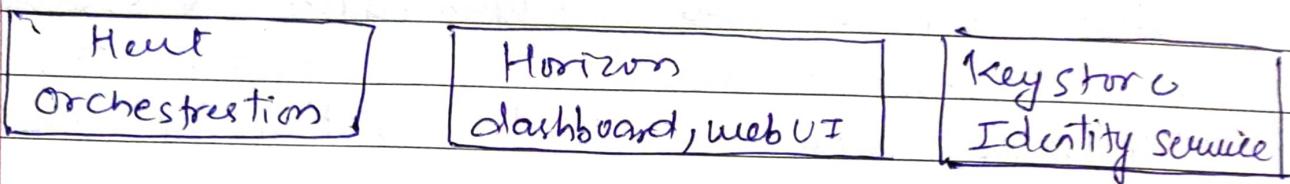
Step 8 :- Sign in to the email client of the address you sent to the email to. You will find the message that you sent.

## ASSIGNMENT - 3

- Give a detailed discussion for the followings:
- 1) open Source Iaas Software
  - Infrastructure as a Service is a Service Model where an organization outsources the equipment used to support storage, Hardwares, servers and networking components.
  - One stack is an open source cloud computing project to provide an Infrastructure as a service (Iaas). This integration is facilitated through public API's that each source offers.
  - Open stacks contain large pool of Compute, Storage and networking resources throughout a data center, all managed through a dashboard. This gives administrators control while empowering their users to provision resources through a web interface if delivers a massively scalable cloud os.
  - The technology consists of a service of connected projects that controls pool of processing, storage and networking resources throughout a data center.

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Open Stack  
 main service of Components

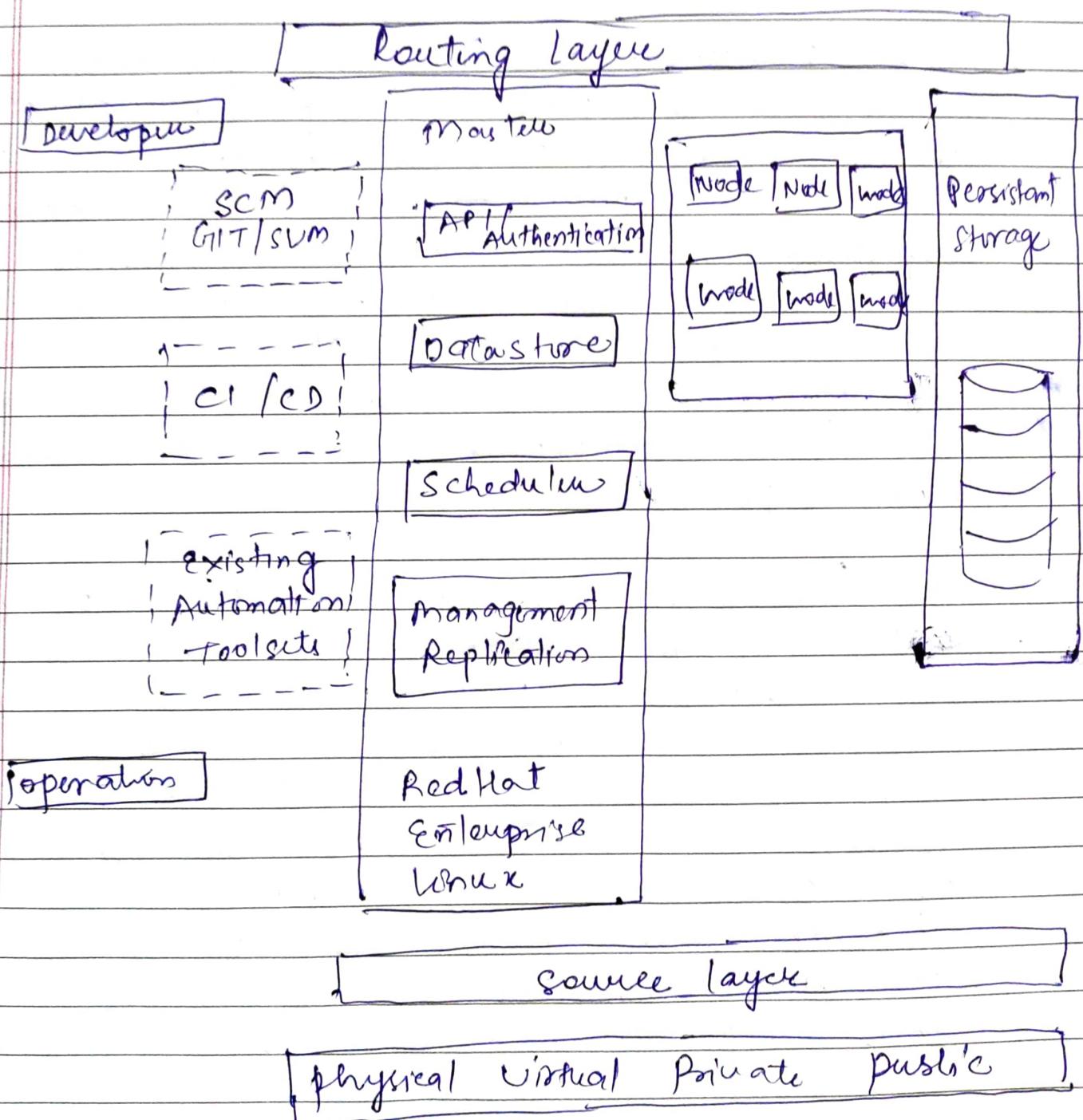


## 2) Open Source PaaS Software:

- Platform as a Service is a category of cloud computing services which offer a way to support the compute lifecycle of delivering web apps and services via the cloud.
- OKD (previously known as openshift origin) is a PaaS computing platform as a service product from Red Hat. It is an application platform where application developers and teams can build, test, deploy and run their application. OKD takes care of infrastructure, middleware and management so that developers can focus on their app.
- OKD enables you to create, deploy and manage applications within the cloud. It provides disk space, CPU resources, memory, network connectivity and an apache or JBoss server. Dependency on the type of application being deployed a template file system layout is provided. OKD also generates a limited DNS so your application is accessible online.

- It provides support for a wide variety of languages, runtimes and database including Java, ESC, Ruby, PHP, Python, perl, MongoDB, MySQL & PostgreSQL.

### OKD architecture



### 3. Open Source SaaS software

- SaaS is a distribution model where a third party is trusted with the responsibility of hosting applications and make them available for customers with the help
- Cloudify is an open source cloud orchestration framework. So it helps in the customization of the entire lifecycle of an application. Cloudify enables users to deploy the application in two ways:-
  - 1) By opting for CLI only.
  - 2) by opting for the Cloudify manager.
- Application Configuration are defined through blueprints that are developed on JAMM DSL configuration files. These blueprints have complete info. regarding the apps lifecycles - starting from installation to its monitoring.
- features: -1) local blueprints  
-2) IT governance & Security.  
3) Blueprinting modeling.

- 4) TOSCA orchestration.
- 5) Built-in node types.
- 4) Open Source cloud simulator Software.

→ Cloudsim :- Cloud sim is a new, highly generalized and extensible Java based simulation toolkit, and is actually regard as software framework.  
It supports several core functionalities like Queuing and processing of event, the creation of Cloudsim entities, communication among components & the management of the simulation clock.

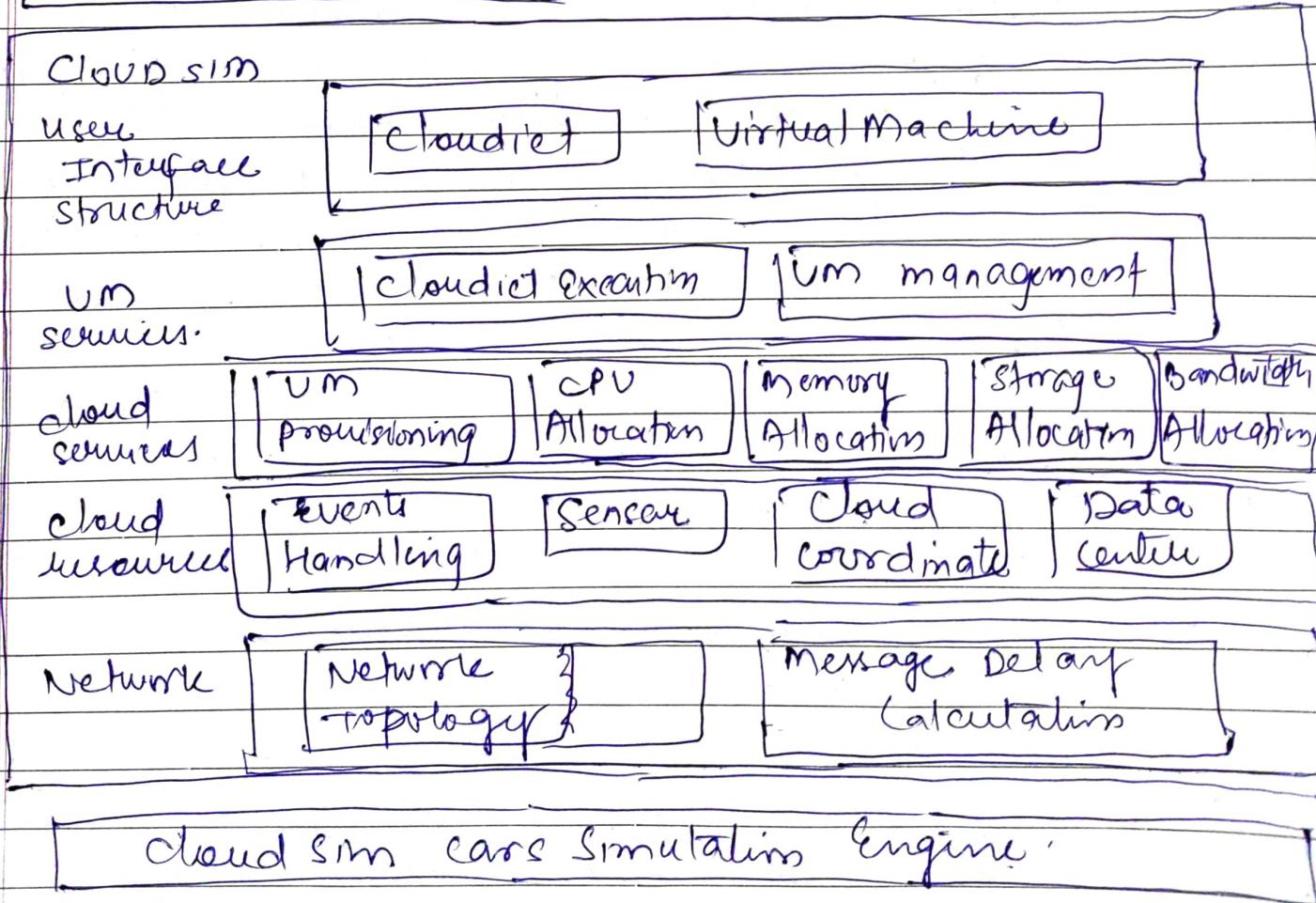
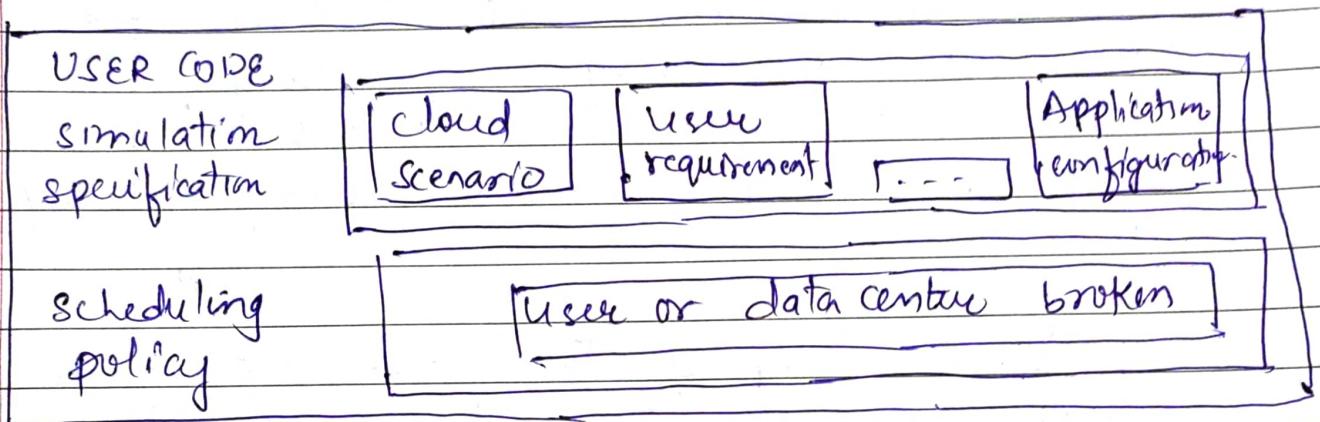
Cloudsim has been developed by the Clouds laboratory of the Computer Science and Software engineering department of the University of Melbourne.

This Toolkit enables seamless modeling, simulation and experimentation in Cloud Computing and application services.

- features
- ① Supports modeling and simulation of large scale cloud computing data centers.
  - ② Supports modeling and simulation of virtualize and server hosts, along

with customisable policies for provisioning host resources to virtual machines.

- (3) supports dynamic inclusion of simulation event, discontinuous.
- (4) Support the creation of various data centre network topologies, message passing applications.



## 5. Open Source Distributed Systems Software.

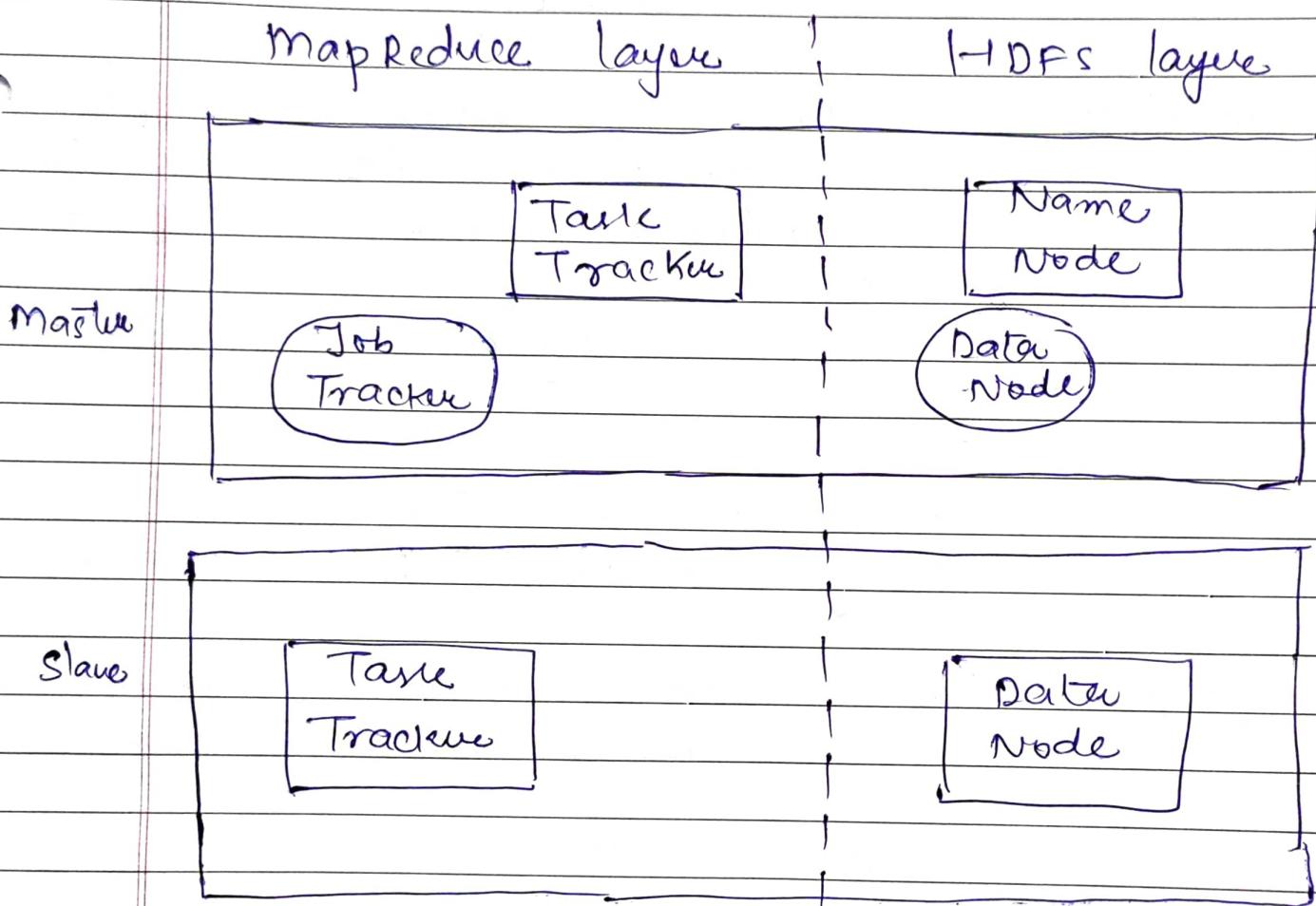
- The Apache Hadoop project develops open source software for reliable, scalable, distributed computing.
- The Apache Hadoop software library is a framework that allows for distributed processing of large data sets across clusters by computers using simple programming models.

It is designed to scale up from single servers to thousands of machines each offering local computation and storage. Rather than rely on hardware to deliver high-availability, the library itself is designed to detect and handle failures at the apps layer, so delivering highly available services on top of a cluster of computers each of which may be prone to failure.

- Hadoop Common :- The common utilities that support the other hadoop modules.
- Hadoop distributed file system :- HDFS is a distributed file system that provides

high throughput access to application data.

- \* Hadoop YARN :- A frame work for Job Scheduling and cluster resource management.



- \* Hadoop mapreduce :- A YARN based system for parallel processing.  
If large data sets.

- \* Hadoop Ozone :- An object store for Hadoop.