

ROLL NO : 1831055

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CLASS : MSc - Software Systems

SEMESTER : V Semester

SUBJECT CODE : 15 MSSE20

SUBJECT NAME : CLOUD COMPUTING.

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1. List the salient features of cloud computing.

- i) Resources Pooling - The cloud gives a large space to use and exploit the resources
- ii) Easy maintenance - It is easy to maintain
- iii) on-demand services - resources are allocated on the demand
- iv) Economical - pay what you use.

4) What is Service oriented Architecture?

SOA - Service oriented Architecture is a style of software design where services are provided to other components by application component, through the ~~network~~ communication protocol over the network.

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5) How do you create RESTful web service in Amazon S3 Interface?

1) Expose GET on the API's root resource to list of all the Amazon S3 buckets of a caller.

2) Expose GET on a folder resource to view a list of all of the Objects in an Amazon S3 bucket.

3) Expose PUT on a folder resource add a bucket to Amazon S3.

4) Expose GET on a folder/item resource to view or ~~view~~ download an object from the Amazon S3 bucket.

2) Compare Grid computing with cloud computing in terms of user management and Accessibility.

### Cloud Computing

1) It follows the client-server architecture.

2) Scalability is high.

3) It is service-oriented.

### Grid Computing

1) The Grid computing follows the distributed computing architecture.

2) Scalability is normal.

3) It is application-oriented.



2) Shortcomings of Virtualization.

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(3)

- 1) High cost on maintainability
- 2) Security risks.
- 3) Availability issue.

Cloud computing overcomes these things by providing a scalable environment so that on demand the resources are allocated, and when they are free, they can free up the resources that are allocated.

### PART-C

2) 1) Describe the components of Hadoop framework with a neat sketch.

As the years went by and data generation increased, higher volumes and more formats emerged. Hence multiple processors were needed to process data to save time. However, a single storage unit became the bottleneck due to the network overhead that was generated. This led to using a distributed storage unit for each processor, which made data access easier.

The components of Hadoop

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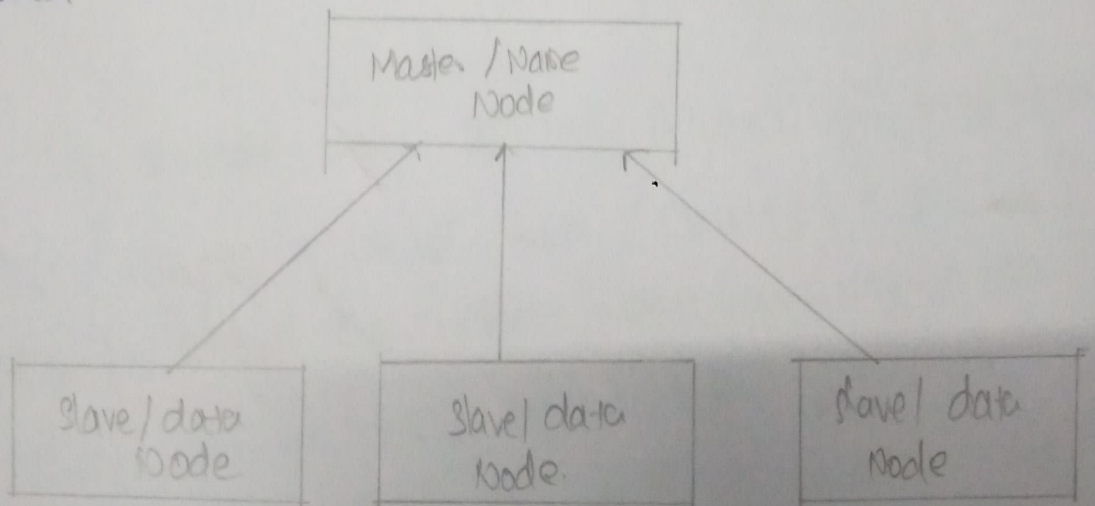
1) HDFS - Hadoop distributed file system.

Data is stored in a distributed manner in HDFS. There are two components of HDFS name node and data node. While there are only one name node, there can be multiple data nodes.

HDFS is specially designed for storing huge datasets in commodity hardware. Hadoop enables you to use commodity machines as your data nodes. However, the name node is always an enterprise server.

Master and Slave Nodes :-

Master and slave node forms the HDFS cluster. The name node is called the master and the data node called the slave node.



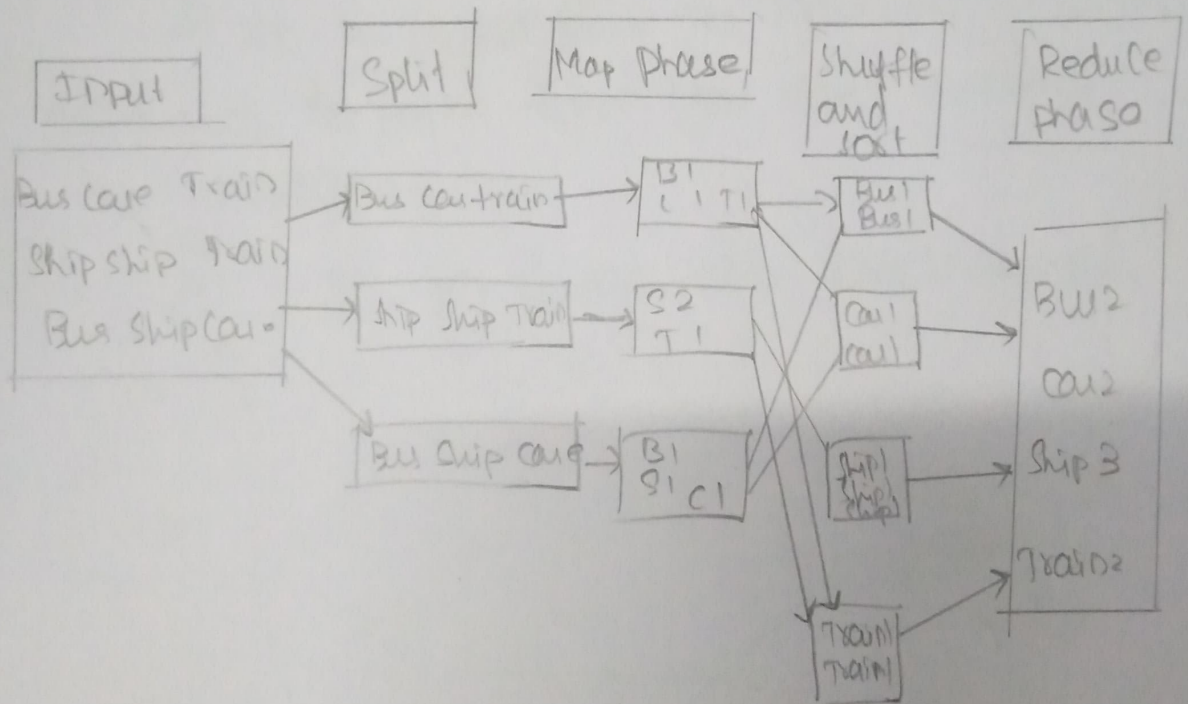


## 2) Hadoop Map Reduce

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Hadoop Mapreduce is the processing unit of Hadoop. In the Map reduce approach, the processing is done at the slave nodes and the final result is sent to the master node.

A data containing code is used to process the entire data. This coded data is usually very small in comparison to the data itself.



The inputs are splitted according to map phase. In the input counts are counted. In third step the data are arranged on their classes or similar data grouped together and in Reduce phase the data is reduced according to their counts.

## 3) Hadoop YARN.

Hadoop YARN stands for yet Another Resource Negotiator. It is the resource management unit of Hadoop and is available as a component of Hadoop version 2.

Hadoop YARN acts like a OS to the Hadoop. It is a file system that is built on the top of the HDFS.

2) It is responsible for managing cluster resources to make sure you don't overload one machine.

3) It performs job scheduling.

