Topic Offered: **Object Storage**

**Objectives:**

* To understand the computer storage architecture.
* To understand the concept computer data storage.
* To understand SAN with NAS
* To Understand object storage with block storage

**Topics to Cover:**

1. Computer data storage
2. Introduction to computer storage architecture
3. Network Attached Storage
4. Cloud Block Storage, Cloud Object Storage
5. Case Study: Cloud Object Storage

**Detailed Description of each Topic:**

1. Computer data storage
   1. Introduction about computer data storage
   2. Hierarchy of storage
   3. Block storage
   4. File Storage
2. Introduction of Computer Storage Architecture
   1. Introduction about storage architecture
   2. Direct Attached Storage
   3. Storage Area Network
3. Network Attached Storage
   1. NAS history
   2. NAS implementation
4. Cloud Storage
   1. Architectural overview of cloud storage
   2. Cloud based delivery (SaaS, PaaS, DaaS, IaaS)
   3. Cloud storage service (AWS)
5. Object Storage

a. Brief introduction of Object Storage

b. Component of object storage

Metadata, OSD

c. Implementation

Achieve storage, Object based file system

1. Cloud based object storage

**Programming Assignments:**

* Case study for open source object storage solutions eg. Minio, Ceph
* Case study for Storage Virtualization solution and configure the same on the system.
* Build data Archival Solution using AWS or any open source storage tool.
* Recovery tool using snapshot mechanism.
  + Create a ram disk of 10mb on a host. Create snapshot of it and store it on same machine. Provide mechanism to restore data from that snapshot file.

**- Vagrant**

**-** Using aws services like cloud-front, s3, ebs

- Build APIs to expose Lambda functions