JGi JAIN | SCHOOL OF COMPUTER SCIENCE AND IT

DEEMED-TO-BE UNIVERSITY

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAM: MASTER OF SCIENCE IN COMPUTER SCIENCE & INFORMATION TECHNOLOGY

[MSc-CS&IT]

Subject Name: Cloud Computing Web Services

Activity: 2

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Department of Computer Science & Information Technology

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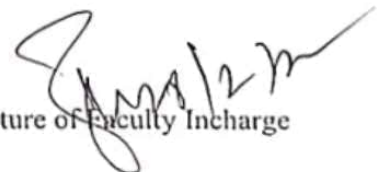[MSc-CS&IT]

Certificate

This is to certify that Mr **Timir Bhingradiya** satisfactorily completed the course of **Activity** 2 prescribed by the JAIN(Deemed-to-be-University) for the semester **IV** M.Sc-CS&IT degree course in the year 2023 - 2025   .

USN : 23MSRCI007

Date : 14/02/2025

Signature of Student   Head of the Department   Signature of Faculty Incharge

* case study on AWS :-

1. what is AWS ?

→ Amazon web service is comprehensive cloud computing platform provide by the Amzon. offering a wide range of service such as computing power, storage options and networking solutions enabling businesses and individuals to scale their application and services globally.

• AWS overview :-

- Compute : EC2, Lambda, Elastic Beanstalk
- Storage : S3, EBS, Glucier etc.
- Database : RDS, Dynamic DB, Redshift etc.
- Networking : VPC, cloud front, Route S3
- Machine learning AI :
  - Sagemaker, Rekognition, Polly etc..
- Developer Tools :
  - Code Build, Code Deploy, Code Pipeline..

2. key AWS services in detail :-
  ⓘ Amazon EC2 : EC2 provides scalable computing capacity.

user can create virtual machines to run application. These instancess can be tailored to different Performance requirments.

- **AWS Lambda :-**
  - Lambda is a serverless computing service that run code in respose to events. It element the meed to Provision and manage servers.

- **Amazon RDS :-**
  - RDS simplifies database management by handling routline tasks such as Provisioning Patching and backups for relational databases like mysql, Postgresql and sql server.

3. Real world case studies :-

  ① Netflix :
  - Netflix leverages AWS for its video streaming service utilizing EC2 for Computing S3 for storage and cloud front for count delivery.

  ② Airbnb :-
  - Airbnb uses AWS to manage its large scale infrastructure.

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③ Spotify :-

   - Spotify migrated is infrastructure to AWS benefiting from AWS's scalability ant storage solution.

④ Samsung :-

   - Samsung uses AWS for data analytics ant application hosting, especially in context of IoT divices ant Smart applications.

4. cost efficiency & Pricing models :

• Pricing models :

   - AWS uses by as you go model with mutiple Pricing options.

① on - demand :-

   - Pai for compute capacity by the hour or second with no long-term commitments.

② Reserved instances :-

   - Commit to using AWS services for 1 or 3 years to recieve a discount.

③ spot Instances :-

- Bid for unused capacity at potentially lower price.

④ Savings Plans :-

- flexible pricing Plans that allow for Savings on consistant usage.

- Cost management Tools :-

- Aws Provides tools like Aws cost explore and Aws Budgets to Track and manage cost helping oosganization optimize their use of cloud service.

5. security and Compliance :-

① security Feature :

- Aws implements robust security Protocols including encryption at rest and in transit identity management with IAm and multiFactor.

② Compliance Certifications :-

- Aws complies with numerous certi such as GDPR, PCI, DSS etc...

* **Key Features of Amzon EC2 :-**

① **On - Demand & scalable Computing Resources :-**
- EC2 allows user to launch virtual machines on-Demand with the ability to scla up or down based on realtime requirements. This Flexibility ensures that applications can meet demand without over-provisoning or under provisoning resources.

② **variety of instance Types :-**
- EC2 offers a wide variety of instance type tailored for different work loads.

1. **General Purpose :-** Balanced Compute memory and networking resources.

2. **Compute optimized :-**
- Focused on delivering high-Performance Compute resources.

3. **Accelerated Computing :-**
- For CPU-intensive application like machine learning & Data Analysis.

* Conclusion :-

- Amazon EC2 is a powerful and versatile service that provides businesses with the ability to scale computing resources in Realtime optimizing costs while meeting the performed need of their applications whether used for web hosting, Big data analytics or machine learning EC2 has proven to be valuable tool for a wide range of industries.

- However to fully realize the benefits of EC2 careful management of resources, cost monitoring and performance toning are essential.