IT457
Cloud Computing
Project document

The IT47 projects can focus on any of the following:

1. Data Analytics
    a. Analyze and visualize small and large data sets on the cloud using interactive computing as well as data manipulation and analysis libraries.
        i. Artificial Intelligence (AI) and Machine Learning (ML)

2. Cloud-based IoT Data Pipeline
    a. Collect and visualize sensor data
        i. Data can be collected or obtained from public data sets

3. Compute & Elasticity
    a. Design, implement, test, package, deploy and monitor cloud applications using Virtual Machines (VMs), Containers
    b. Serverless cloud computing services.

4. Cloud Storage
    a. Explore and experiment with different distributed cloud-storage abstractions and compare their features, capabilities and applicability.
        i. Orchestrate, deploy and optimize a unified application that integrates heterogeneous SQL and NoSQL database systems
    b. Implement and compare consistency models to recognize the tradeoff between consistency and performance in replicated and distributed cloud storage system

5. Observability and Monitoring
    a. Monitor and understand the performance of cloud applications.

Requirements:
Group project
Contribution from each member

Project deliverables:

1. Architecture diagram
2. Source code
3. AWS configuration files
4. Dashboard screenshots
5. Final report & demo video (4-5 mins)
    a. Per member contributions clearly listed
    b. AWS services, platforms, technologies used
        i. Justification: motivation, benefits and need for using

Sample project Topics

1. Cloud-based Chat Application
2. E-commerce Platform with Cloud-native Backend
3. Video Streaming App (like mini YouTube)
4. Smart Irrigation Dashboard
5. Multiplayer Game Backend
6. Attendance analytics
7. You can think of many more or use from resources link provided below.

Timeline:

Project topic selection – **Oct 24th :**

The google form should be filled with group members and the project topic – HARD DEADLINE, else group will not be considered for project grading.

S.No	Task	Description	Start Date	End Date
1	Project Initiation & Planning	Define goals, scope	25/10/25	31/10/25
2	Cloud Architecture Design	Design infrastructure, and cost planning (self learning)	01/11/25	07/11/25
3	Environment Setup & Configuration	Setup environments, networking, and others	08/11/25	10/11/25
4	Application Deployment & Testing	Deploy app, set up CI/CD, run tests	11/11/25	15/11/25
5	Resume(5)	Deploy app, set up CI/CD, run tests	30/11/25	04/11/25
6	Final Report			06/11/25

You should convert this to a Ghant Chart in your report.

Useful resources:

1. Reading material: https://github.com/TzuriLabs/awesome-cloud-computing

2. An exhaustive list of project topics with arch, code is all available here. You are free to use this material, however be ready to answer, justify and defend yourselves during the question sessions https://github.com/mzazon/awesome-cloud-projects?tab=readme-ov-file