CSE 546 — Project 2 Individual Report

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Implementation of Different Tasks:

- **Application design and work distribution:** Sat with the team to understand the project requirements, design the architecture of the application, and compartmentalize the work approximately equally.

- **Setting up IAM:** Created IAM roles for all team members to access AWS without root user access, as it is the best practice to follow. Created a user role for the face recognition lambda function with policies related to s3 and dynamoDB operations attached. Also added the policies for lambda function logging to that user role.

- **Setting up S3 DynamoDB:** Created two S3 buckets, one to store the user-uploaded video files, and another to store the CSV results. Created a DynamoDB table with the student name as the partition key. Loaded the provided students' data into the table, which will later be queried by the lambda function to retrieve student information.

- **Setting up the ECR:** Created a private ECR which will store versions of the docker images to deploy to the lambda function.

- **Setting up the Lambda:** Created a lambda function of arm64 architecture, and python runtime, with the container image in ECR. Added a trigger, by configuring the PUT operations on the input S3 bucket.

- **Testing and deployment:** Helped build, and deploy newer versions of the docker images to the ECR. Finally, helped during the testing and debugging of the working of the lambda function end to end.

- **Auxiliary Tasks:** Researched how to extract frames and perform face recognition using python libraries. Helped the team debug python issues and also gave inputs in writing clean code.

Major Learnings:

- Understood IAM, S3, and Lambda, in-depth.
- Use of AWS Console and CLI for working with DynamoDB.
- Use of AWS SDK for Python application development.
- Working efficiently both independently and as a team.