CSE 546 — Project 2 Individual Report

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Main Contributions:

- *Application design and work distribution*: Collaborated with the team to understand the project's requirements and then worked together to design the application's architecture.
- *Continuously polling the SQS queue for incoming event notifications from the S3 bucket*: Wrote a Python script that continuously polls the input SQS queue for incoming event notifications from the S3 bucket. The script uses the boto3 library to create an SQS client and set the SQS queue URL and S3 bucket name. The script uses the receive_message function to continuously poll the SQS queue for incoming messages.
- *Processing the event notifications and passing video details to the Lambda function*: Processed the event notifications received from the SQS queue to retrieve the video information and name. I then passed the required video details to the Lambda function and invoked it at the same time. This was achieved using the boto3 library to create an S3 client and JSON library to parse the incoming messages.
- *Printing outputs of CSV files in the OpenStack console*: Added functionality to the script to look for CSV files corresponding to the uploaded videos in the output S3 bucket. The script uses the boto3 library to create an S3 client and csv library to read and process the CSV files. Finally, I printed their respective outputs in the OpenStack console.
- *Setting up IAM, SQS, EC2*: Assisted in creating a user role for the S3 bucket to send event trigger notifications to the SQS queue. Created a JSON policy so that the S3 can assume this role. Created an SQS queue where the event notifications can be pushed whenever a new video is uploaded to the input S3 bucket. Attached Json policies that allow it to receive the mentioned notifications from the S3 bucket.
- *Testing and deployment*: Helped the team debug networking issues during the OpenStack cloud setup and the deployment of the Python script that monitors the s3 buckets and invokes the lambda function.

Major Learnings:

- Understood IAM, S3, and Lambda in-depth.
- Use of AWS Console and CLI.
- Use of AWS SDK for Python application development.
- Understood how to set up and install OpenStack on an EC2 instance.
- Got an in-depth understanding of the parallels between AWS and OpenStack.
- Learned how to send event notifications from S3 to SQS.
- Working efficiently both independently and as a team.