OPT Volunteering Progress Report

Project Title: Serverless application that uses the Amazon Polly service to convert text to speech

Week: 12/03/2024 – 12/16/2024

Report Date: 12/17/2024

INTRODUCTION

Project Overview:

This project focuses on building a serverless application using AWS services. The application enables users to send information about a blog post (which is converted into an MP3 file) and retrieve the post details, including a link to the audio file stored in an Amazon S3 bucket. The backend is managed entirely through AWS services, eliminating the need for provisioning or managing servers.

Work Progress:

Key Workflow:

Sending New Post Information:

- Users interact via a static webpage hosted on Amazon S3.
- Post information is sent through an API exposed by Amazon API Gateway.

- API Gateway triggers a New Post Lambda function, which:
  - Saves post details in a DynamoDB table.
  - Initiates an asynchronous workflow using Amazon SNS.

- A second Lambda function (Convert to Audio) processes the SNS messages to:
  - Use Amazon Polly for text-to-speech conversion into an MP3 file.
  - Store the MP3 file in an S3 bucket.
  - Update the DynamoDB table with the MP3 file's URL.

Retrieving Post Information:

- Users can request post details via the API exposed by Amazon API Gateway.

- The Get Post Lambda function retrieves post details (text and MP3 URL) from DynamoDB and returns them to the user.

Tasks Performed:

1. Learned About AWS DynamoDB:

- I attended video sessions to gain a deeper understanding of the AWS DynamoDB service and its capabilities.

2. Created a DynamoDB Table:

- Table Name: posts

- Partition Key: id (String)

- Table Settings: Used default configurations.

- Verified the table was successfully created.

3. **Defined Post Details for Storage: The table will store the following information:**

   - id: A unique identifier for each post.

   - status: Indicates if the post is in PROCESSING or UPDATED state (after audio conversion).

   - text: The post's text content.

   - voice: The Amazon Polly voice is used for generating the audio.

   - url: A link to the MP3 file stored in Amazon S3.

By completing this task, I have established the foundation for storing and retrieving post information.

Future Work:
The next steps in the project include:

- Integrating Lambda functions to handle application logic.
- Configuring additional AWS services to enable full application functionality.