OPT Volunteering Progress Report

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

Week: 12/17/2024 – 12/30/2024

Report Date: 12/31/2024

INTRODUCTION

Project Overview:

This section of the report involved creating an Amazon SNS topic (new_posts) to facilitate communication between two AWS Lambda functions. The topic enables asynchronous processing of text-to-audio conversion, ensuring efficient handling of varying post sizes.

Work Progress:

1. Created an Amazon S3 bucket to store application audio files.

    Configured the bucket with:
    - Unique name (audioposts-NUMBER).
    - ACLs enabled under Object Ownership.
    - Block Public Access settings adjusted (unchecked Block all public access and acknowledged the warning).

2. Created an Amazon SNS topic (new_posts) to integrate two AWS Lambda functions for post-to-audio conversion. This enables asynchronous processing, allowing users to receive the DynamoDB

item ID immediately while handling larger posts efficiently. Configured topic as Standard and saved the Topic ARN for later use.

First, it allows the application to use asynchronous calls so that the user who sends a new post to the application immediately receives the ID of the new DynamoDB item, so it knows what to ask for later without having to wait for the conversion to finish. With small posts, the process of converting to audio files can take milliseconds, but with bigger posts (100,000 words or more), converting the text can take longer. In other use cases, such as real-time streaming, size is not a problem because Amazon Polly starts to stream speech back as soon as the first bytes are available.
Second, the system uses a Lambda function to convert the posts.

By completing this task, the integration between the two AWS Lambda functions was successfully established using the Amazon SNS topic. This enables seamless communication, allowing the application to process text-to-audio conversion asynchronously while efficiently handling both small and large posts. The Topic ARN was saved for configuring Lambda functions in subsequent steps.

Future Work:
The next steps in the project include:
Creation and implementation of a new post Lambda function