Task Allocation List

Back End (Mike and Yuki)

Assignee: Member A, Member B

1. **Image Upload Functionality**

   o   Implement API to upload images to S3 bucket

   o   Configure triggers to invoke Lambda function upon image upload

2. **Automatic Tagging Functionality**

   o   Implement Lambda function using YOLO object detection to identify objects in images and generate tags

   o   Save generated tags and image S3 URLs to the database

3. **Thumbnail Generation Functionality**

   o   Implement Lambda function to create thumbnails of images and save them to S3

   o   Save thumbnail S3 URLs to the database

4. **Tag-based Image Search Functionality**

   o   Implement API to search images based on tags

   o   Return list of thumbnail image S3 URLs that match the search query

5. **Thumbnail URL Search Functionality**

   o   Implement API to retrieve full-size images based on the thumbnail S3 URL

6. **Image Tag Search Functionality**

   o   Implement API to upload an image and search for similar tagged images

7. **Manual Tag Management Functionality**

   o   Implement API to add or remove tags from images manually

   o   Support bulk tagging operations

8. **Image Deletion Functionality**

o   Implement API to delete images and their associated data based on thumbnail URL list

AWS Setting (Hongyi)

Assignees: Member C

1. **AWS Infrastructure Setup**

    o   Configure S3 buckets and manage permissions

    o   Deploy and configure Lambda functions

    o   Set up API Gateway and create endpoints

2. **Database Setup**

    o   Configure DynamoDB or RDS and create necessary tables

    o   Integrate database with Lambda functions

3. **User Authentication**

    o   Set up AWS Cognito and create user pools

    o   Configure user authentication and authorization

    o   Set up federated authentication (optional)

4. **Notification System**

    o   Set up AWS SNS for notifications

    o   Implement tag-based notification functionality

5. **Security Configuration**

    o   Configure IAM roles and policies

    o   Secure API endpoints

Front End and management (Marius)

Assignee: Member D

1. **User Interface Design**

   o Create sign-up page with user registration form (email, first name, last name, password)

   o Create login page with user login form (email, password)

2. **Home Page Design**

   o Design dashboard for post-login activities

   o Implement image upload button and query submission form

3. **Image Upload Page**

   o Implement image file selection and upload button

4. **Query Results Page**

   o Display list of thumbnail images based on query results

   o Enable clicking thumbnails to view full-size images

5. **Tag Management Page**

   o Implement form for managing image URLs and adding/removing tags

6. **Settings Page**

   o Design user account settings and notification settings UI