# Project Proposal: Age and Gender Prediction System

## Project Overview

This project aims to develop a robust system for predicting the age category and gender of individuals based on input images. The solution will leverage deep learning models and be deployed using a user-friendly web interface, making it accessible for various practical applications, including demographic analysis and personalized marketing.

## Team Structure and Task Distribution

Our team comprises 10 members, divided into pairs to handle different aspects of the project effectively. Below is the proposed task distribution:

### Team 1: Data Preparation

* Members: Ahmed Yehya(Gender Classification) & Ahmed Mahmoud
* Responsibilities:
* - Collect datasets containing diverse images for age and gender classification.
* - Preprocess and clean the data to ensure compatibility with the models.
* - Split the data into training, validation, and testing sets.

### Team 2: Age Classification Model

* Members: Mohamed Babikir & Mohamed Goda
* Responsibilities:
* - Implement and refine the age classification model in `Age\_model `.
* - Train the model with preprocessed data and fine-tune hyperparameters.
* - Evaluate the model performance and document the findings.

### Team 3: Gender Classification Model

* Members: : Omar Mohamed & Ahmed Hassaan
* Responsibilities:
* - Work on the gender classification model in `Gender\_model\_vgg16 `.
* - Optimize the architecture for better accuracy and efficiency.
* - Perform testing and validate results against the test set.

### Team 4: Integration and Deployment

* Members: Mohamed Ahmed
* Responsibilities:
* - Integrate the age and gender classification models into a unified framework.
* - Develop and refine the deployment script (`deployment.py`) using Streamlit.
* - Test the web application to ensure smooth functionality across different platforms.

### Team 5: Documentation and Presentation

* Members: Annas Walid & Mohamed Hassan
* Responsibilities:
* - Prepare comprehensive documentation, including project methodology, results, and challenges faced.
* - Create an engaging presentation for stakeholders, highlighting key achievements.

## Project Objectives

- Develop and train deep learning models for age and gender classification.  
- Deploy the models using a streamlined web application for end-user interaction.  
- Achieve a minimum accuracy of 70% for both age and gender predictions.

## Conclusion

This project will provide valuable insights into leveraging deep learning for practical image-based predictions. By distributing tasks efficiently among the team, we aim to deliver a high-quality solution within the proposed timeline.