Internship Assignment: DynImagic

Objective

Create a Mobile application that utilizes AI to separate colors from a group image and generate individual images with the same pattern. Implement a user-friendly UI to display available designs and colors, allowing users to generate specific color images on demand.

Requirements

1. **Image Processing with AI:**
    - Develop a function that takes two images as input: one with the pattern/design and another with a group of colors and patterns.
    - Use AI/image processing techniques to identify and separate different colors from the group image.
    - Generate separate images for each color, preserving the original pattern.
2. **User Interface (UI):**
    - Utilize a GUI library like Tkinter, PyQt, or any of your choice for the user interface.
    - Display a list of available designs along with the count of unique colors for each design.
    - When a user clicks on a design, dynamically show the associated colors and patterns.
    - Provide a button or interactive element to generate individual color images based on the user's selection.
3. **GitHub Repository:**
    - Set up a GitHub repository for the project.
    - Structure the repository with appropriate directories (e.g., code, documentation).
    - Include a README file with instructions on how to run the application, required dependencies, and any additional information for users and developers.
4. **Documentation:**
    - Document your code thoroughly using comments and docstrings.
    - Provide a brief explanation of the AI/image processing techniques used.
    - Clearly explain the structure of your UI and how it interacts with the image processing functions.

Submission

1. Push the complete codebase to the GitHub repository.
2. Include a README.md file with clear instructions on how to set up and run the application.

3. Provide a short document explaining the AI techniques used for color separation.

Evaluation Criteria

1. **Functionality (50%):**
    - Successful color separation and image generation.
    - User-friendly UI with design and color selection features.
2. **Code Quality (30%):**
    - Well-documented code.
    - Clear and modular structure.
3. **GitHub Repository (10%):**
    - Proper organization of files and directories.
    - A README file with comprehensive instructions.
4. **Documentation (10%):**
    - Concise documentation explaining the AI techniques used.
    - Clear instructions for users and developers.

Note

Feel free to use any libraries or frameworks you find suitable for image processing and UI development. The goal is to create a functional and well-documented application that meets the specified requirements.