

AI Color Analyzer - Project Report & README

Project Report

AI Color Analyzer - Project Report

Overview:

AI Color Analyzer is a web-based application that leverages artificial intelligence to extract and analyze dominant colors from an uploaded image. The tool assists designers, developers, and creatives in identifying and using consistent color palettes for UI/UX or digital art.

Technologies Used:

Frontend:

- HTML/CSS/JavaScript
- React.js
- Tailwind CSS
- Vite

Backend/AI:

- Flask / FastAPI (likely)
- Python
- Pillow / OpenCV
- K-means Clustering (Scikit-learn)
- Live Deployment on live.co.dev

Features:

- Upload an image via UI

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- View the uploaded image preview
- Analyze and extract dominant colors
- Tab-based display (Color Palette / AI Analysis)
- Clean and responsive dark UI

Challenges Faced:

1. File Handling in Browser
2. Color Extraction Accuracy
3. Frontend-Backend Sync
4. Deployment Issues
5. UI Consistency

Future Improvements:

- Provide HEX/RGB values
- Export palette as .ASE or .PNG
- Multiple image uploads
- Drag-and-drop upload

README

AI Color Analyzer

An AI-powered web app to extract and analyze dominant colors from any uploaded image. Useful for designers, developers, and digital artists to generate color palettes for their projects.

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Live Demo:

<https://mvoiobbu8lltoq5z.live.co.dev>

Features:

- Upload image via UI
- Preview uploaded image
- Analyze dominant colors
- View results in a responsive dark UI

Built With:

Frontend:

- React.js
- Tailwind CSS
- Vite

Backend:

- Python
- Flask / FastAPI
- Pillow / OpenCV
- Scikit-learn (K-means clustering)

Installation:

1. Clone the repository
2. Install dependencies: `npm install`
3. Run dev server: `npm run dev`

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How It Works:

1. Upload an image via UI.
2. Image sent to backend.
3. K-means clustering extracts dominant colors.
4. Palette shown in UI.

Challenges Faced:

- Accurate color detection
- UI alignment
- File handling
- Deployment setup

Future Scope:

- HEX/RGB output
- Export options
- Drag/drop upload
- Multi-image analysis

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