OCR Analytics Web Application

The **OCR Analytics Web Application** is a web-based tool that allows users to upload images and extract text from them using **Azure Cognitive Services**. The application is built using **Flask** for the backend, and it provides a simple, user-friendly interface where users can upload images, preview them, and see the extracted text in real time.

Key Features

- **Image Upload**: Users can upload images in formats like PNG or JPEG.
- **Text Extraction**: The uploaded images are processed using Azure's OCR (Optical Character Recognition) API, which extracts any printed text from the images.
- **Multi-language Support**: The application supports multiple languages, allowing for text extraction in various languages, including Hindi.
- **Responsive Web Interface**: Users can preview the image before extraction and view the extracted text directly on the interface.

Technologies Used

- **Flask**: Provides the backend framework for routing and server-side logic.
- **JavaScript**: Handles frontend interactions, such as image previews and form submissions.
- **HTML/CSS**: Powers the frontend structure and styling of the web interface.
- **Azure Cognitive Services**: Specifically, the **Computer Vision API** is used for OCR capabilities.

System Requirements

- **Python 3**: Required for running the backend code.
- **Azure Subscription**: Needed to access the OCR service via Azure Cognitive Services.

Application Flow

1. The user uploads an image on the web interface.
2. The uploaded image is previewed in the browser.
3. The user clicks a button to send the image to the backend, where it is processed using the **Azure OCR API**.
4. The extracted text is returned to the front end and displayed for the user.

Future Enhancements

- **Handwriting Recognition**: Add support for handwriting recognition, extending the application's OCR capabilities.
- **Error Handling**: Improve error handling for unsupported file formats or low-quality images.
- **Text Download**: Add a feature to allow users to download the extracted text in various formats (e.g., `.txt`, `.pdf`).

Conclusion

This web application offers a simple and effective way to extract printed text from images using Azure's powerful OCR capabilities. Its design is flexible, supporting multiple languages, and it provides a clear and intuitive interface for users to interact with.