# **IMAGE RECOGNITION USING IBM CLOUD VISUAL RECOGNITION**

**PHASE 3 : DEVELOPMENT PART-1**

**IMAGE RECOGNITION FOR EDUCATIONAL PLATFORM**

**Creating a simple web interface for uploading images and generating AI captions using Flask, Keras (for image captioning), and NumPy (for data manipulation) involves several steps. Below is a high-level outline of the process:**

**1. Set Up Your Development Environment:**

- Install Python and Flask on your system.

- Create a new Python virtual environment for your project.

**2. Install Required Libraries:**

- Install Flask (`pip install flask`).

- Install Keras and any necessary image processing libraries for your image captioning model (e.g., TensorFlow or PyTorch).

- Install NumPy (`pip install numpy`).

**3. Prepare Your Image Captioning Model:**

- Train or use a pre-trained image captioning model. Make sure it’s compatible with your chosen deep learning framework (e.g., TensorFlow/Keras or PyTorch).

**4. Create the Flask Web Application:**

*```python*

*From flask import Flask, request, render\_template*

*Import numpy as np*

*App = Flask(\_\_name)*

*# Define a route for the main page*

*@app.route(‘/’)*

*Def index():*

*Return render\_template(‘index.html’)*

*# Define a route for handling image uploads and generating captions*

*@app.route(‘/upload’, methods=[‘POST’])*

*Def upload\_image():*

*If ‘image’ not in request.files:*

*Return “No image uploaded.”*

*# Process the uploaded image using your image captioning model*

*Image = request.files[‘image’].read()*

*# Process the image with your image captioning model here*

*Caption = generate\_caption(image)*

*Return caption*

*Def generate\_caption(image):*

*# Implement your image captioning model here*

*# Use Keras or your chosen framework to generate captions*

*# Return the generated caption as a string*

*Return “AI-generated caption for the image.”*

*If \_\_name\_\_ == ‘\_\_main\_\_’:*

*App.run(debug=True)*

*```*

**5. Create HTML Templates:**

Create an HTML file named `index.html` in a “templates” folder (make sure to create this folder in your project directory):

*```html*

*<!DOCTYPE html>*

*<html>*

*<head>*

*<title>Image Captioning</title>*

*</head>*

*<body>*

*<h1>Upload an Image</h1>*

*<form action=”/upload” method=”post” enctype=”multipart/form-data”>*

*<input type=”file” name=”image” accept=”image/\*”>*

*<input type=”submit” value=”Generate Caption”>*

*</form>*

*<h2>AI-Generated Caption:</h2>*

*<p id=”caption”></p>*

*</body>*

*</html>*

*```*

**6. Run the Application:**

- Run the Flask application using `python your\_app.py`.

**7. Access the Web Interface:**

- Open a web browser and go to `http://127.0.0.1:5000/` to access the web interface.