User Manual for Tea Leaf Disease Detection System

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1. Introduction
This project focuses on the development of an AI-powered system to diagnose diseases in tea leaves using Convolutional Neural Networks (CNNs) and a user-friendly web interface. The application is built to help tea farmers and agronomists quickly and accurately identify diseases by analyzing uploaded images of tea leaves. The system utilizes a VGG16-based CNN model, trained on a comprehensive dataset, to provide real-time diagnostic results.

2. System Requirements
Before using this program, ensure that your system meets the following requirements:
- Operating System: Windows 10 or higher
- Python Version: 3.11.3 or later
- Disk Space: 500MB or more for data storage
- RAM: Minimum 4GB

3. Project Structure
The project is organized into the following folders:

- /static: Contains static files like images, CSS, and JavaScript.

- /templates: HTML templates for the web pages.

- /models: Pre-trained and fine-tuned AI models.

- /data: Datasets used for training and testing.

- /test: Images of tea leaves, can you to test predictions.

- /uploads: Images of tea leaves uploaded to the system to predict, will store here.

- /app.py: Main Flask application file.

4. Installation Guide
Step 1: Install Python
Make sure Python 3.11.3 or later is installed on your machine.
Step 2: Install Required Libraries
Step 3: Check Dependencies

Step 4: Prepare the Dataset and Model

Download the tea leaf disease dataset and the pre-trained model. Ensure the dataset is placed in the /data folder, and the trained model is saved in the /models folder.

5. Running the Program

Step 1: Navigate to the Project Folder

Step 2: Run the Program

To run the project, locate the main script file (e.g., `main.py`). Execute it using:

`python main.py`

6. How to Use the System

Step 1: Upload an Image

When prompted, select an image of a tea leaf from the **test folder**. The system will process the image and analyze it for any diseases.

Step 2: Review the Results

After analysis, the system will display the detected disease.

7. Contact Information

For additional support, you can reach out from here:

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This manual should guide you through setting up and using the Tea Leaf Disease Detection System effectively. If you encounter issues not covered in this document, feel free to reach out for support.