Project Design Phase – II

Data Flow Diagram & User Stories

Date	24 October 2023
Team ID	Team - 592472
Project Name	Potato Disease Classification
Maximum Marks	4 Marks

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

Data Flow:

Data collection:

In this stage, a variety of potato leaf photos are gathered from many sources, including field surveys, image repositories, and other places. After that, the gathered photos are kept in a raw data repository.

Data Pre-processing:

To get ready for model training, raw potato leaf photos are pre-processed. To increase dataset diversity, this may entail resizing photos, normalising pixel values, and using data augmentation techniques.

Model Training:

During this phase, a deep learning model is trained to identify different potato leaf diseases using the pre-processed data. For later use, the trained model is stored.

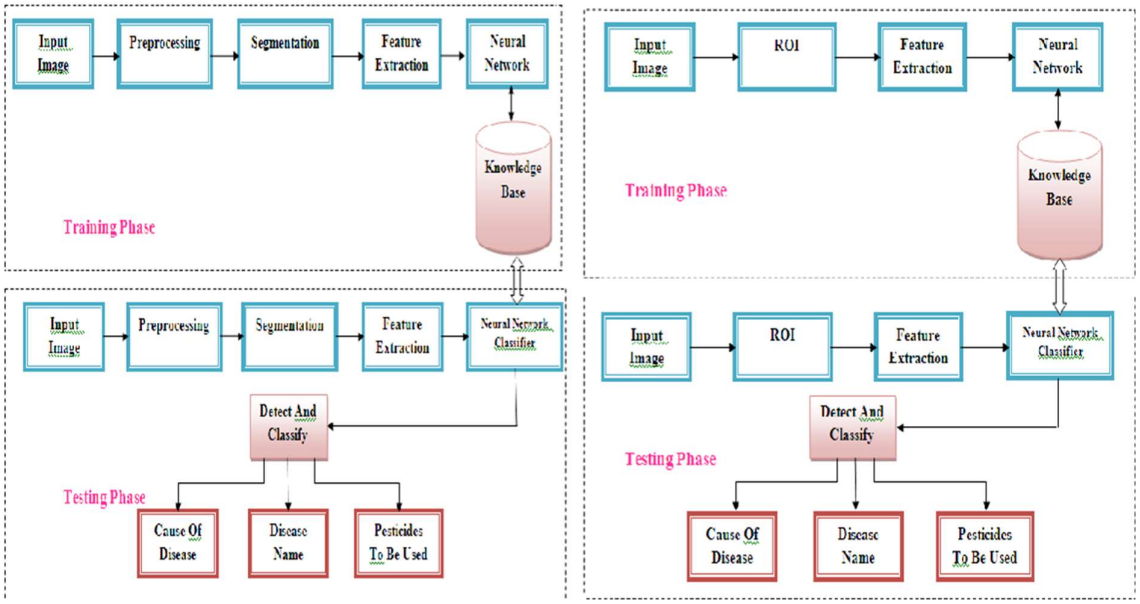
Model Evaluation:

To examine the trained model's accuracy, sensitivity, and specificity in classifying diseases, its performance is evaluated using a different dataset not utilized in training. Model Deployment: In this step, the trained model is made available for real-world illness classification applications on local or cloud-based devices.

User Interaction:

End users can submit potato leaf photos for disease identification and quickly receive results by interacting with the deployed model through a user-friendly application or API.

Data Flow Diagram:



Flow in the Model:

Data is obtained from the Data Repository and transformed into pre-processed data during the Data Pre-processing step.

The pre-processed data is passed on to the Model Training stage, where it is used to train the model. Classification can be performed using the learned model.

A unique dataset is used in the model evaluation procedure to evaluate the model's performance and correctness.

After it is complete, the model can be deployed from the Trained Model Repository and made available to users.

Through the User Interaction procedure, users engage with the deployed model by sending categorization requests for potato leaf photos

User Stories:

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
potato farmer	Farming	USN-1	I want a potato disease classification system that can quickly identify the specific diseases affecting my crop, so that I can implement timely and targeted treatments to prevent further damage and ensure a successful harvest.	access the disease classification system via a user-friendly interface, either through a web application or a mobile app.	High	Sprint-1
research scientist	Research On Plants	USN-2	I need a robust potato disease classification tool that can accurately differentiate between various types of diseases affecting potato crops, enabling me to conduct in-depth analyses and develop effective strategies for disease management and prevention.	potato disease classification system should be equipped with an extensive database that covers a wide range of potato diseases, including both common and rare occurrences, to provide comprehensive information for research purposes.	High	Sprint-1
agronomist		USN-3	I require a user-friendly potato disease classification application that can be easily accessed and utilized in the field, allowing me to provide real-time guidance and support to farmers in diagnosing and addressing disease issues, thus improving overall crop health and yield.	The potato disease classification system should provide timely and accurate information on various potato diseases, including their symptoms, causes, and appropriate management strategies, enabling agronomists to make informed decisions and provide effective guidance to farmers.	Medium	Sprint-2
government agricultural officer		USN-4	I am responsible for monitoring and controlling potato diseases at a regional level. I need an advanced potato disease classification system that can efficiently process large volumes of data, enabling me to make informed decisions and implement preventive measures to safeguard the agricultural industry and	It should have the capability to handle a large volume of data and provide real-time analysis, enabling government agricultural officers to make informed decisions and implement timely interventions for disease	Medium	Sprint-1

			ensure food security within the region.	control and prevention at a regional or national level.		
student studying plant pathology		USN-5	I am interested in learning about various potato diseases and their classifications. I would benefit from an interactive and educational potato disease classification platform that provides comprehensive information , helping me to understand the complexities of potato diseases and their impact on global agriculture.	The potato disease classification system should provide comprehensive and detailed information about various potato diseases, including their classifications, etiology, symptoms, and management strategies, enabling students to deepen their understanding of plant pathology.	High	Sprint-1