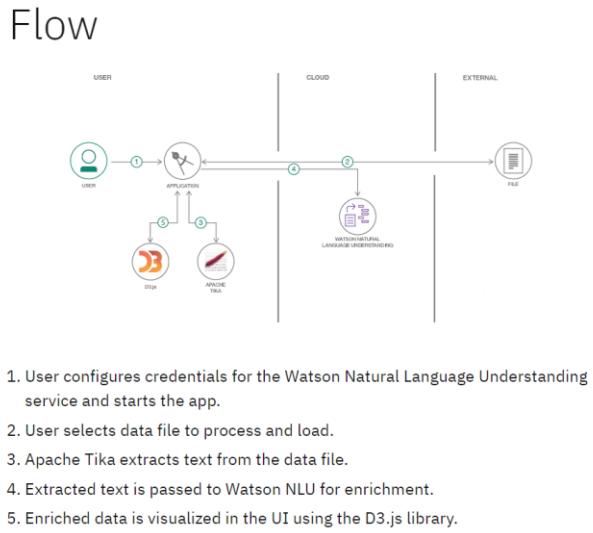
Project Design Phase-II
Data Flow Diagram & User Stories

Date	15 October 2022
Team ID	PNT2022TMID06143
Project Name	A Novel Method for Handwritten Digit Recognition System
Maximum Marks	4 Marks

Data Flow Diagrams:

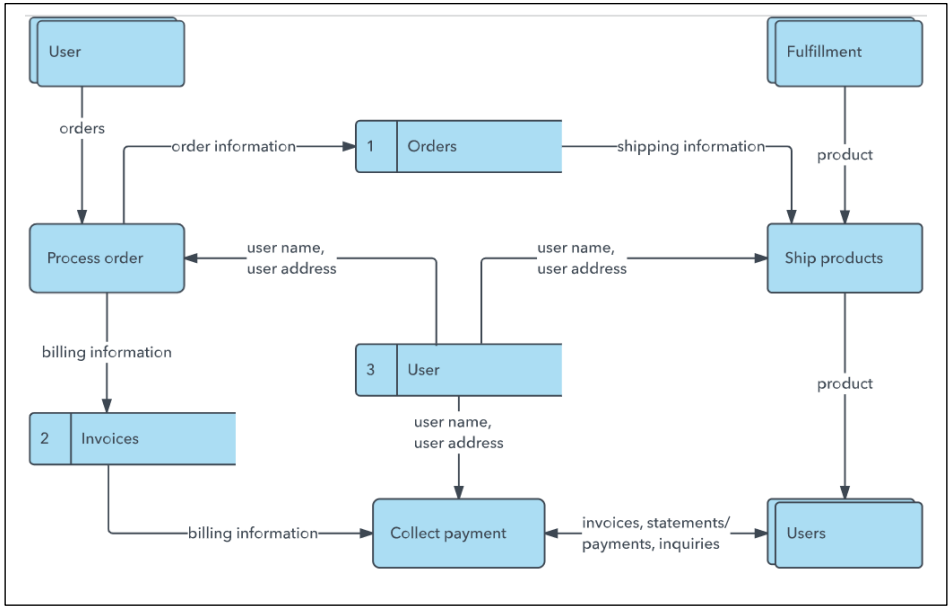
A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

Example: (Simplified)

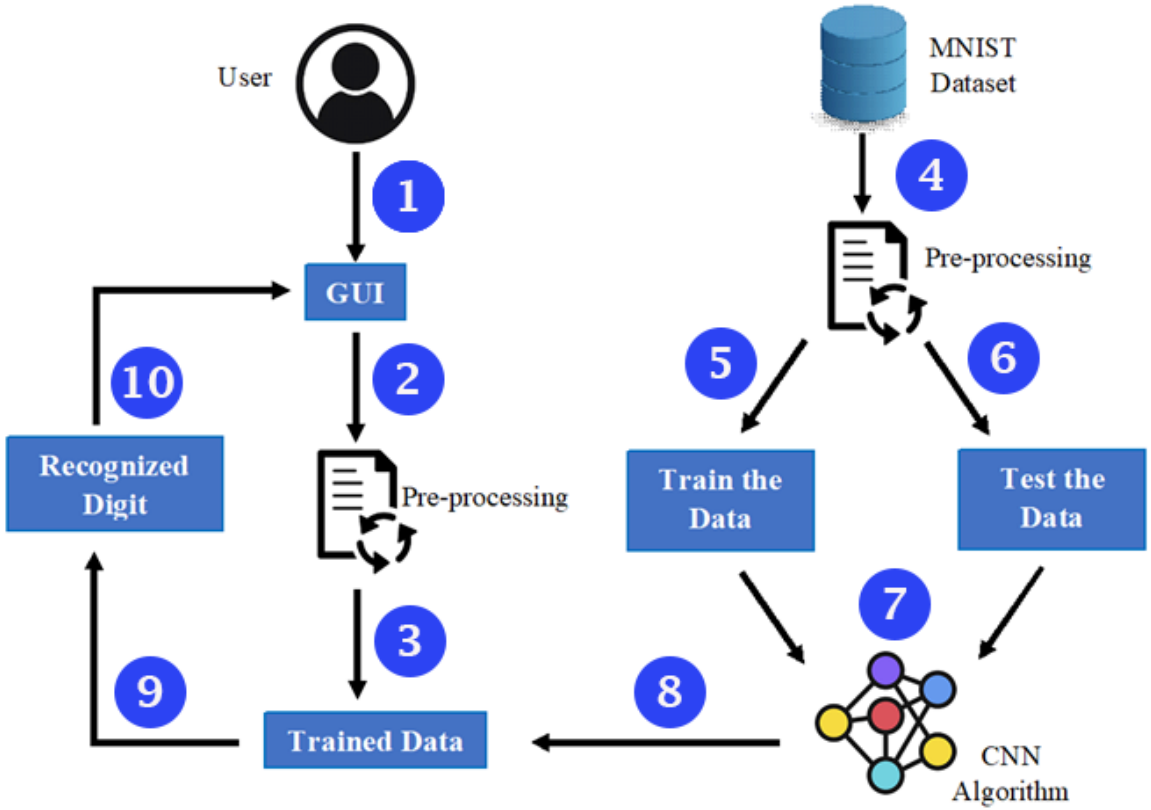


1. User configures credentials for the Watson Natural Language Understanding service and starts the app.
2. User selects data file to process and load.
3. Apache Tika extracts text from the data file.
4. Extracted text is passed to Watson NLU for enrichment.
5. Enriched data is visualized in the UI using the D3.js library.

Example: DFD Level 0 (Industry Standard)

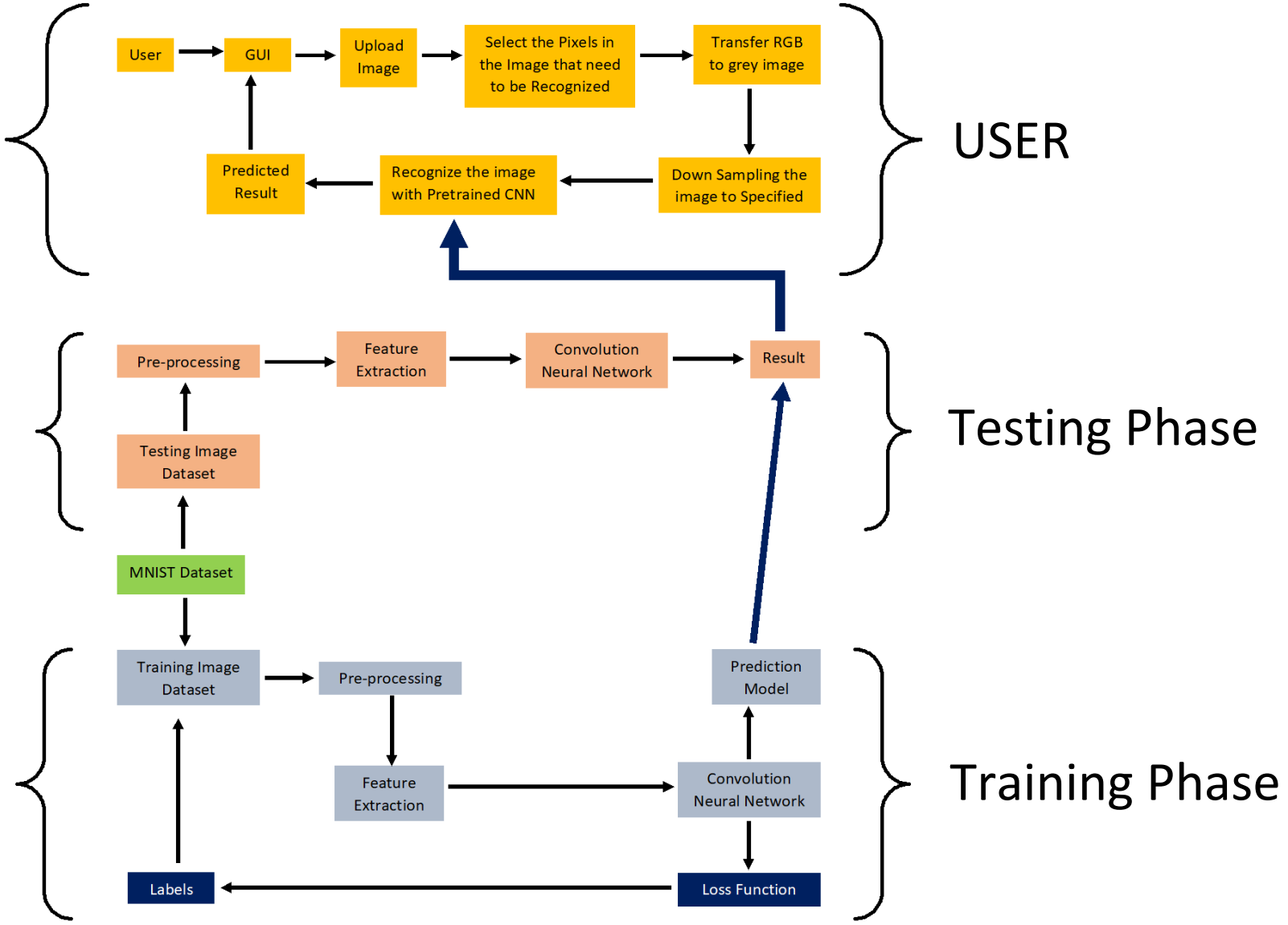


Data Flow Diagram (Simplified)



1. Get image from user.
2. Pre-processing the given image by specifying the pixel to be recognized and convert it to black and white image.
3. Pre-processing image is compared with trained data.
4. MNIST dataset sent to pre-processing.
5. Pre-processed data classified to training data.
6. Pre-processed data classified to testing data.
7. Both Training and Testing data are sent to CNN Algorithm.
8. Trained data is obtained from the CNN Model.
9. Image from user is recognized using trained data.
10. Recognized data is sent to the user.

Data Flow Diagram (DFD)



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
Customer (Cashier in Bank Sector)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	Medium	Sprint-2
	Uploading Image	USN-2	As a user, I can upload the images.	Uploading images (.jpg, .png, etc.,)	High	Sprint-3
	Selecting the part to be recognized	USN-3	User will select the part that need to be recognized.	By Scrolling of mouse	Low	Sprint-3
	Image Processing	USN-4	The background is eliminated from captured image and converted into binary image.	Accurate prediction is done only on the binary image.	Medium	Sprint-3
	Prediction	USN-5	The binary image is predicted as Numerical Digits (1,2,3)., by using CNN model.	Accurate prediction is done using CNN model	High	Sprint-1
	Perform Action	USN-6	Performing action by training the MNIST Dataset.		High	Sprint-1
	Viewing Result	USN-7	Viewing the Recognized digital data of digits.	The resultant Digit is displayed in the web UI.	High	Sprint-4