Project Design Phase-I
Solution Architecture

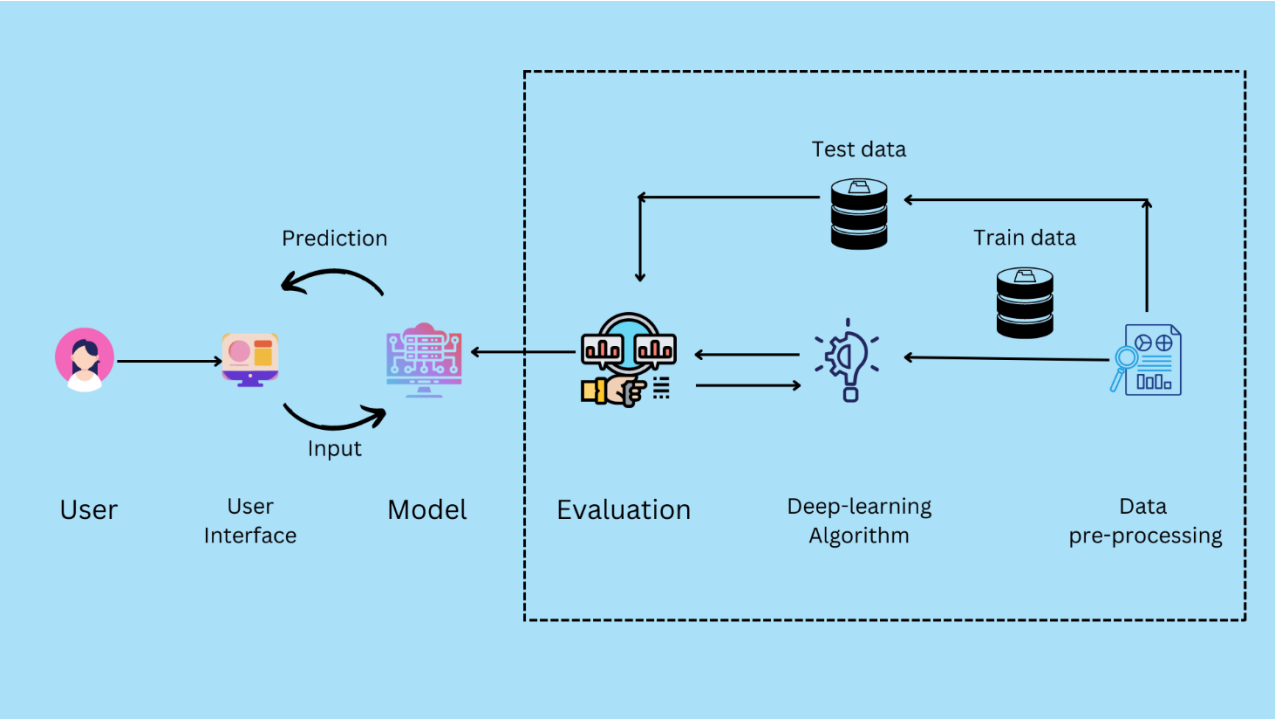
Date	19 September 2022
Team ID	PNT2022TMID18129
Project Name	Project - A Novel Method for Handwritten Digit Recognition System
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
- Define features, development phases, and solution requirements.
- Provide specifications according to which the solution is defined, managed, and delivered.

Solution Architecture Diagram:



Procedure:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

1. Install the latest TensorFlow library.
2. Prepare the dataset for the model.
3. In order to classify the handwritten digits, develop a single layer perceptron.
4. Plot the change in accuracy per epoch.
5. Evaluate the model based on the test data.
6. Add hidden layers to make it a multilayer perceptron.
7. Add few more additional hidden layers and check for the accuracy.
8. Manipulate the batch size and epochs and check for the accuracy.

The MNIST dataset, which contains approximately 70000 handwritten digits, is widely used in this recognition process. Artificial neural network is used in order to train the model. And an application is created, so that user can interact and use the app. The model analyses the input given by user and returns the predicted output to the user.