Project Title: A Novel Method for Handwritten Digit Recognition System **Project Design Phase-I - Soluon Fit Template** **Team ID:PNT2022TMID20889**

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) CS

Person in industry who is recognizing the handwritten digits.
Customers are postal and bank office employees

6. CUSTOMER CONSTRAINTS CC

Customer has the constraints like time, accuracy , unique style of handwriting,
unclear images will not give correct result.

5. AVAILABLE SOLUTIONS AS

Designed to recognize only digits, Available solution takes lot of time in identifying the image. Time and accuracy is low in available solutions.

Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS J&P

The model needs to recognize different styles of handwriting present.
The problem happens when model not able to recognize image and doesn't display the accurate digits.

9. PROBLEM ROOT CAUSE RC

The problem root cause is that there's a wide range of handwriting. So, providing multiple examples of how every character might look is difficult.
Inaccurate predictions of the character is a major problem.

7. BEHAVIOUR BE

Customers verify whether the digits are accurate or not which is given in the image.

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS TR

The idea is to come up with a design to use a handwritten digit recognizer.

4. EMOTIONS: BEFORE / AFTER EM

It is a quite irritating and frustrating while manually converting the handwrittendigits
• By using our system, user can save the time and reduce the error occur on recognition.

10. YOUR SOLUTION SL

A novel method for handwritten digit recognition system helps in recognizing the handwritten digits.By Using the MINIST Dataset to recognize handwritten digits and convolutional neural network model(CNN) is created using pytorch library to solve the problem of handwritten digit recognition.

8. CHANNELS of BEHAVIOUR CH

8.1 ONLINE

In online they can upload the handwritten picture to produce output.

8.2 OFFLINE
Extract offline channels from different Handwriting styles.

Extract online & offline CH of BE