Project Title: Novel Method for Handwritten Digit Recognition System **Team ID:** PNT2022TMID06143

Project Design Phase-I - Solution Fit

Define CS, fit into CC

1. CUSTOMER SEGMENT(S) — CS

Who is your customer?

The Customers who deal with handwritten digits like Banking sectors, schools, colleges, railways, firms, etc.

6. CUSTOMER CONSTRAINTS — CC

What constraints prevent your customers from taking action or limit their choices of solutions?

They believe that the alternatives will result in errors and faults and will be inconvenient.

5. AVAILABLE SOLUTIONS — AS

Which solutions are available to the customers when they face the problem

There are no widely used software's to detect handwriting; instead, they check with other people to affirm what number it is.

Explore AS, differentiate

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

2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.

Handwritten digits can be difficult to understand and interpret at times. It may cause errors when dealing with rough handwriting.

9. PROBLEM ROOT CAUSE — RC

What is the real reason that this problem exists? What is the back story behind the need to do this job?

We face numerous challenges in handwritten number recognition. because of different people's jotting styles and the lack of Optic character recognition This investigation offers an in-depth comparison of various machine literacy and deep literacy

7. BEHAVIOUR — BE

What does your customer do to address the problem and get the job done?

Finding the best software for detecting accurate digits in a more efficient manner

Focus on J&P, tap into BE, understand

Identify strong TR & EM

3. TRIGGERS — TR

What triggers customers to act?

To wait for manual confirmation of digits.

4. EMOTIONS: BEFORE / AFTER — EM

How do customers feel when they face a problem or a job and afterwards?

Feels frustrated and sad when numbers are not entered.

10. YOUR SOLUTION — SL

If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality.
If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.

A solution to this problem is the Handwritten digit recognition system, which uses a picture of a digit and recognizes the digit present in the image. Convolutional Neural Network model built with PyTorch and applied to the
MNIST dataset to recognizes handwritten digits.

8. CHANNELS OF BEHAVIOUR — CH

8.1 ONLINE
What kind of actions do customers take online? Extract online channels from #7

8.2 OFFLINE
What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development

Using software that is available on the internet. Obtaining assistance from those nearby in order to recognize the digits written by their customers.

Identify strong TR & EM