**Project Title :** A Novel Method for Handwritten Digit Recognition System

**Team ID :** PNT2022TMID1654

Project Design Phase -1

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| **1. CUSTOMER SEGMENT(S)**<br>One who wants to extract digits from handwritten text images | **5. AVAILABLE SOLUTIONS**<br>Traditional systems of handwriting recognition have relied on handcrafted feature and prior knowledge. Checking with other people to affirm what number it is. | **8. CHANNELS OF BEHAVIOUR**<br>Using softwares already available on the internet and getting help from those nearby to recognise digits written by their customer. |
| **2. JOBS-TO-BE-DONE/ PROBLEMS**<br>Handwritten digits can be difficult to understand and interpret at times. It may cause errors when dealing with rough handwriting. | **6. CUSTOMER CONSTRAINTS**<br>Unclear image will not give accurate results. The alternatives might result in errors and faults will be inconvinient | **9. PROBLEM ROOT CAUSE**<br>Each and every person has a different handwriting; i.e: different jotting styles. Makes it tricky for programmers to provide enough examples of how each character might look. This investigation offers an in-depth comparison of various machine literacy and deep |
| **3. TRIGGERS**<br>To obtain the numbers accurately and quickly.<br>**4. EMOTIONS: BEFORE/ AFTER**<br>Feels frustrated and sad when numbers are not entered | **7. BEHAVIOUR**<br>Customers should try with clear image and neat handwriting to get higher accuracy in digits. Designing the best software to detect digits accurately in an efficient manner. | **10. YOUR SOLUTION**<br>The solution would be the development of a handwritten digit recognition system which uses Convolutional Neural Network model built with PyTorch and applied to the MNIST dataset. After the training and testing process, the accuracy rate reaches 99%. |