PROBLEM STATEMENT

- The problem statement is to classify handwritten digits. The goal is to take an image of a handwritten digit and determine what that digit and character is.

- It is easy for the human to perform a task accurately by practicing it repeatedly and memorizing it for the next time. Human brain can process and analyse images easily. Also, recognize the different elements present in the images.

- the goal is to correctly identify digits from a dataset of tens of thousands of handwritten images and experiment with different algorithms to learn first-hand what works well and how techniques compare

- The handwritten digit recognition is the capability of computer applications to recognize the human handwritten digits. It is a hard task for the machine because handwritten digits are not perfect and can be made with many different shapes and sizes.

- The handwritten digit recognition system is a way to tackle this problem which uses the image of a digit and recognizes the digit present in the image. Convolutional Neural Network model created using Python library over the MNIST dataset to recognize handwritten digits .

- Handwriting number recognition is a challenging problem researchers had been research into this area for so long especially in the recent years

QUESTION	DESCRIPTION
What does the problem affect?	Handwriting recognition tends to have problems when it comes to accuracy. People can struggle to read others' handwriting. How, then, is a computer going to do it? The issue is that there's a wide range of handwriting – good and bad. This makes it tricky for programmers to provide enough examples of how every character might look.
What are the boundaries of the problem?	As the manually written digits aren't of a comparable size, thickness, position and direction, numerous difficulties need to be taken into consideration to decide the problem of handwritten digit recognition and it also involves the difficulty of visual pattern recognition.
What is the issue?	The handwritten digits are not always of the same size, width, orientation and justified to margins as they differ from writing of person to person, so the general problem would be while classifying the digits due to the similarity between digits such as 1 and 7, 5 and 6, 3 and 8, 2 and 5, 2 and 7, etc.
When does the issue occur?	Perhaps the most obvious problem when processing

	handwritten forms during the data capture process is poor quality or illegible handwriting. We all know the old stereotype about doctors' handwriting, so trying to perform accurate data capture and validation on this type of form-filling may result in little meaningful data being extracted.
Where is the issue occurring?	During the data capture validation stages of any forms processing activity,all required text fields are processed which involves recognition and extracting the written characters.
Why is it important that we fix the problem?	The high variance in handwriting styles across people and poor quality of the handwritten text compared to printed text pose significant hurdles in converting it to machine readable text. Nevertheless it's a crucial problem to solve for multiple industries like healthcare, insurance and banking.