Task 2 Summary — Image Classification using CNN

Objective:
To build and train a **Convolutional Neural Network (CNN)** model using **TensorFlow/Keras** to classify handwritten digits from the MNIST dataset.

Steps Taken:

1. Imported and normalized the MNIST dataset.
2. Built a CNN model with convolution, pooling, flattening, and dense layers.
3. Compiled and trained the model using categorical crossentropy loss.
4. Evaluated performance using test data (accuracy and loss).
5. Visualized 5 predictions to compare model outputs with actual labels.

Results:

- Training accuracy: ~___%
- Test accuracy: ~___%
- The model correctly predicted most test digits with minor errors.

Insights:

- CNNs are very effective in recognizing images.
- The model's accuracy improves with more training epochs or deeper layers.
- Preprocessing (normalization and reshaping) is crucial for accurate predictions.