CodeAlpha Internship

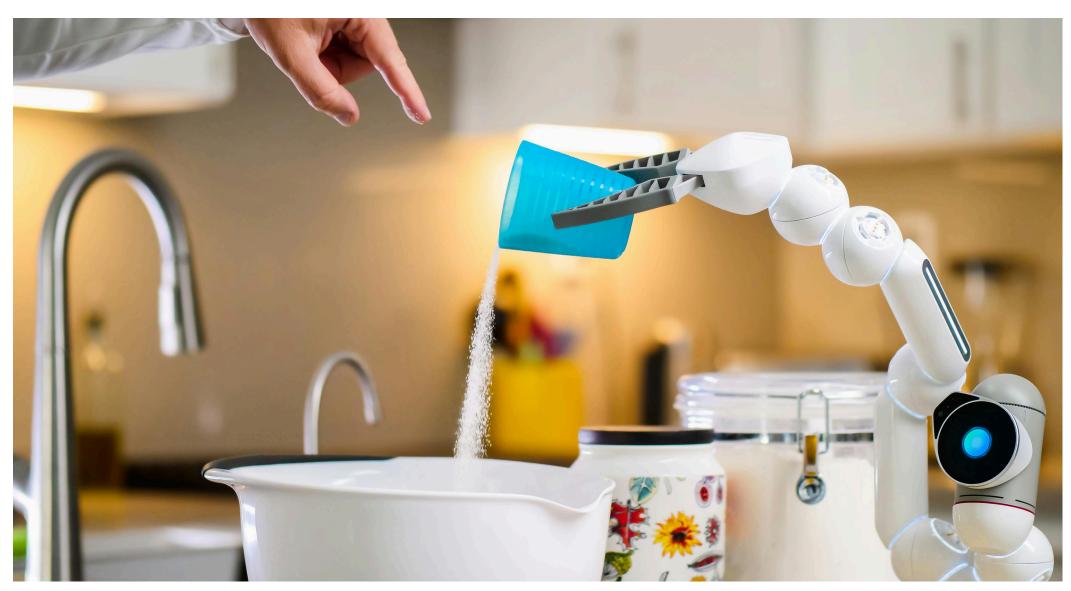| Task Title	**HAND WRITTEN CHARACTER RECOGNITION**
Dataset	USED TENSORFLOW BUILTIN DATASETS

A handwritten character recognition model is designed to identify and classify characters from handwritten text, such as digits, letters, or symbols.

Objective:

The goal is to develop a machine learning model that can accurately recognize and classify handwritten characters (letters, digits, or symbols) from images. This model should be able to identify and categorize characters into predefined classes, enabling applications like digitization of handwritten documents, postal code recognition, or automated form processing.

Challenges:

1. **Variability in Handwriting:** Handwritten characters can vary significantly between individuals due to different handwriting styles.
2. **Noise and Distortions:** The images might contain noise, distortions, or artifacts that can affect the accuracy of recognition.
3. **Similar Looking Characters:** Some characters or digits may look very similar (e.g., 'O' and '0', '1' and 'I'), making classification challenging.
4. **Data Imbalance:** Some classes might have fewer examples than others, leading to potential biases in the model.

Data Collection	Machine Learning Algorithm	Evaluate the model
☐ A comprehensive dataset of labeled images of handwritten characters. The dataset should cover a wide range of handwriting styles and include both uppercase and lowercase letters (if applicable), digits, and any relevant symbols. The dataset is retrieved from tensorflow library.	☐ A machine learning model, based on Convolutional Neural Networks (CNNs), capable of extracting relevant features from the images and classifying them into the correct categories. CNNs are commonly used due to their ability to capture spatial hierarchies in images.	☐ Test the model using the testing dataset and evaluate its performance by calculating key evaluation metrics, including accuracy, precision other relevant measures.