**AIML PROJECT**

**TITLE: Predicting the Next Word in a Sentence Using RNNs**

SECTION **– 01**

**Team Members (Team No - 15):**

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**Introduction:**

This project aims to develop a machine learning model capable of predicting the next word in a sentence. This task is fundamental in natural language processing (NLP) and has applications in various fields, including text generation, machine translation, and autocomplete systems.

**Objective:**

The primary objective is to create a recurrent neural network (RNN) that can learn from sequences of words and predict the most likely next word in a given sentence. The project focuses on understanding the basics of sequence prediction and applying RNNs to a simple text corpus.

**Dataset:**

For this project, a simple text corpus is used. The dataset consists of a small collection of sentences or a single paragraph. The text is pre-processed by tokenizing the words, converting them into sequences of integers, and then creating input-output pairs for training the model. For instance, if the sentence is "Hello world this is a simple example," the model is trained to predict the word "world" given "Hello" as input, "this" given "Hello world," and so on.

**Algorithm:**

The algorithm used in this project is based on Recurrent Neural Networks (RNNs), specifically utilizing the Simple RNN layer. RNNs are well-suited for sequence prediction tasks because they can maintain a hidden state that captures information from previous time steps, making them effective for handling sequential data.