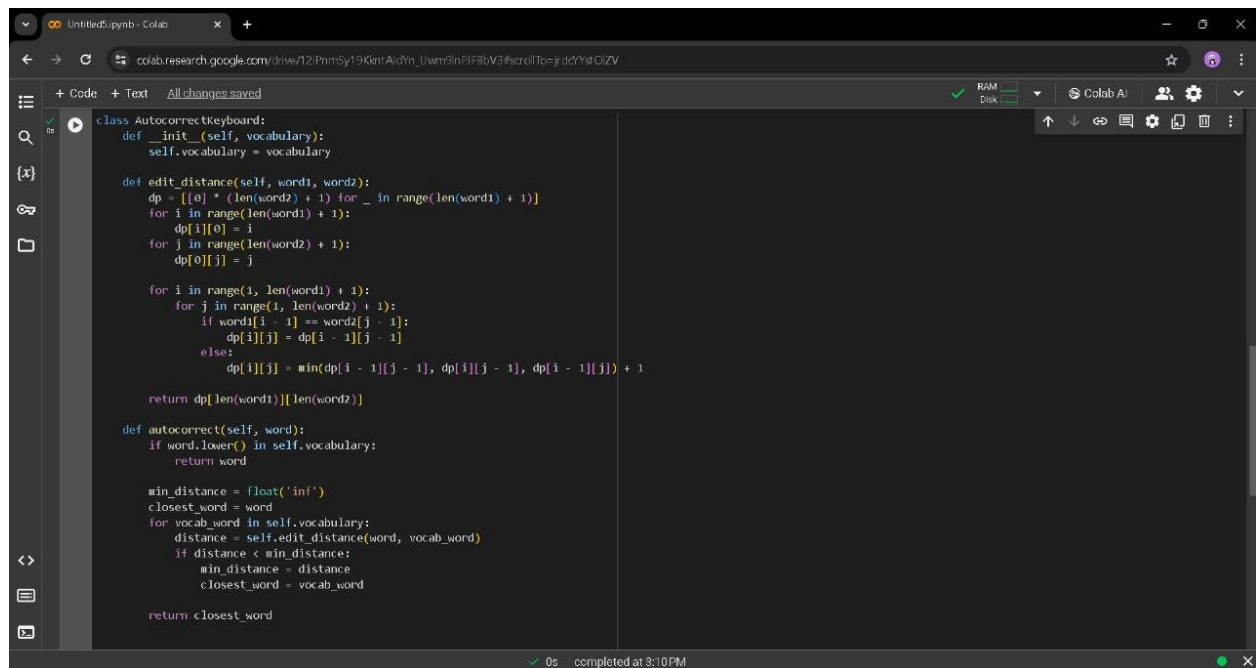


AI/ML BEGINNER LEVEL TASK

AUTOCORRECT KEYBOARD SYSTEM

Googlecolablink:

https://colab.research.google.com/drive/12iPnmSy19KkntAldYn_Uwm9lnPJFBbV3



```
class AutocorrectKeyboard:
    def __init__(self, vocabulary):
        self.vocabulary = vocabulary

    def edit_distance(self, word1, word2):
        dp = [[0] * (len(word2) + 1) for _ in range(len(word1) + 1)]
        for i in range(len(word1) + 1):
            dp[i][0] = i
        for j in range(len(word2) + 1):
            dp[0][j] = j

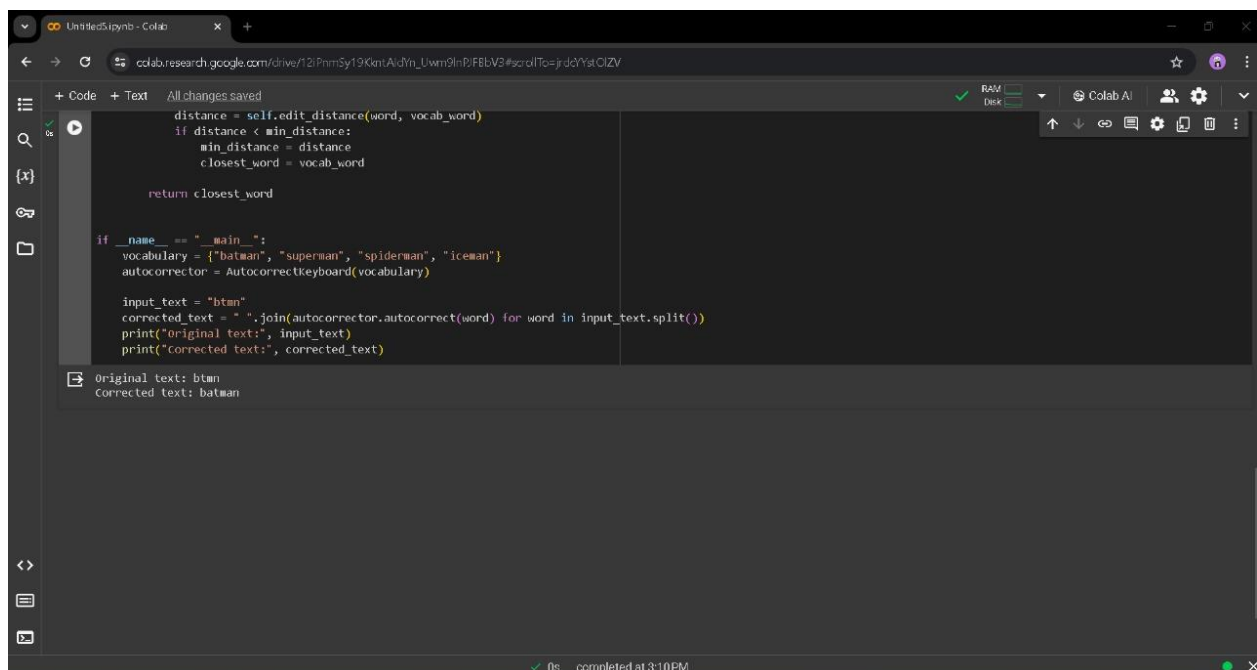
        for i in range(1, len(word1) + 1):
            for j in range(1, len(word2) + 1):
                if word1[i - 1] == word2[j - 1]:
                    dp[i][j] = dp[i - 1][j - 1]
                else:
                    dp[i][j] = min(dp[i - 1][j - 1], dp[i][j - 1], dp[i - 1][j]) + 1

        return dp[len(word1)][len(word2)]

    def autocorrect(self, word):
        if word.lower() in self.vocabulary:
            return word

        min_distance = float('inf')
        closest_word = word
        for vocab_word in self.vocabulary:
            distance = self.edit_distance(word, vocab_word)
            if distance < min_distance:
                min_distance = distance
                closest_word = vocab_word

        return closest_word
```



```
distance = self.edit_distance(word, vocab_word)
if distance < min_distance:
    min_distance = distance
    closest_word = vocab_word

return closest_word

if __name__ == "__main__":
    vocabulary = {"batman", "superman", "spiderman", "icecream"}
    autocorrector = AutocorrectKeyboard(vocabulary)

    input_text = "btan"
    corrected_text = " ".join(autocorrector.autocorrect(word) for word in input_text.split())
    print("original text:", input_text)
    print("corrected text:", corrected_text)
```

Original text: btan
Corrected text: batman