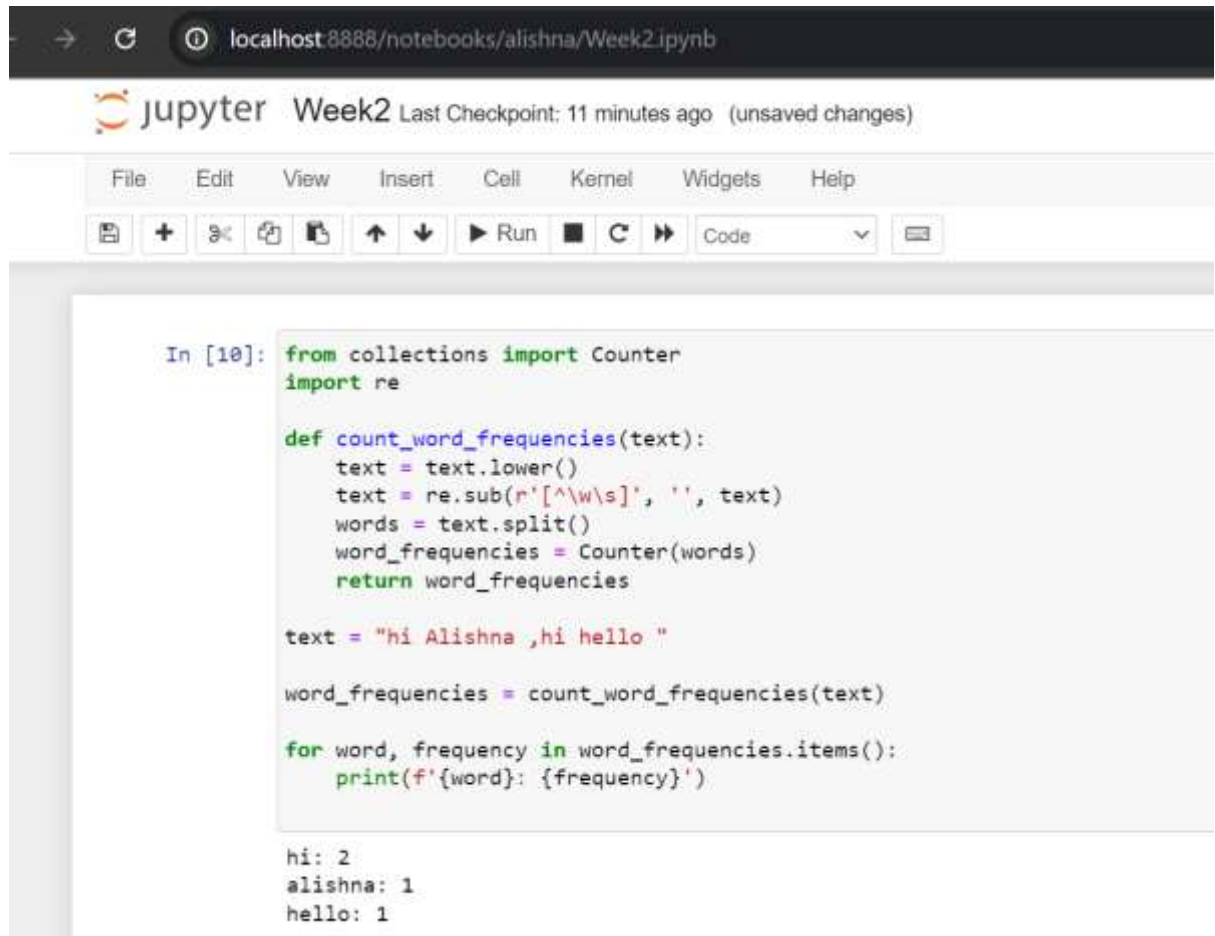


# Assignment 2:

-Alishna Mukhya A

1. Write a program to count word frequencies in a given text

Program:



The screenshot shows a Jupyter Notebook interface in a web browser. The address bar shows 'localhost:8888/notebooks/alishna/Week2.ipynb'. The notebook title is 'Week2' with a status 'Last Checkpoint: 11 minutes ago (unsaved changes)'. The interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for file operations, running code, and other functions. The main area displays a code cell with the following Python code:

```
In [10]: from collections import Counter
import re

def count_word_frequencies(text):
    text = text.lower()
    text = re.sub(r'^\w\s', '', text)
    words = text.split()
    word_frequencies = Counter(words)
    return word_frequencies

text = "hi Alishna ,hi hello "

word_frequencies = count_word_frequencies(text)

for word, frequency in word_frequencies.items():
    print(f'{word}: {frequency}')
```

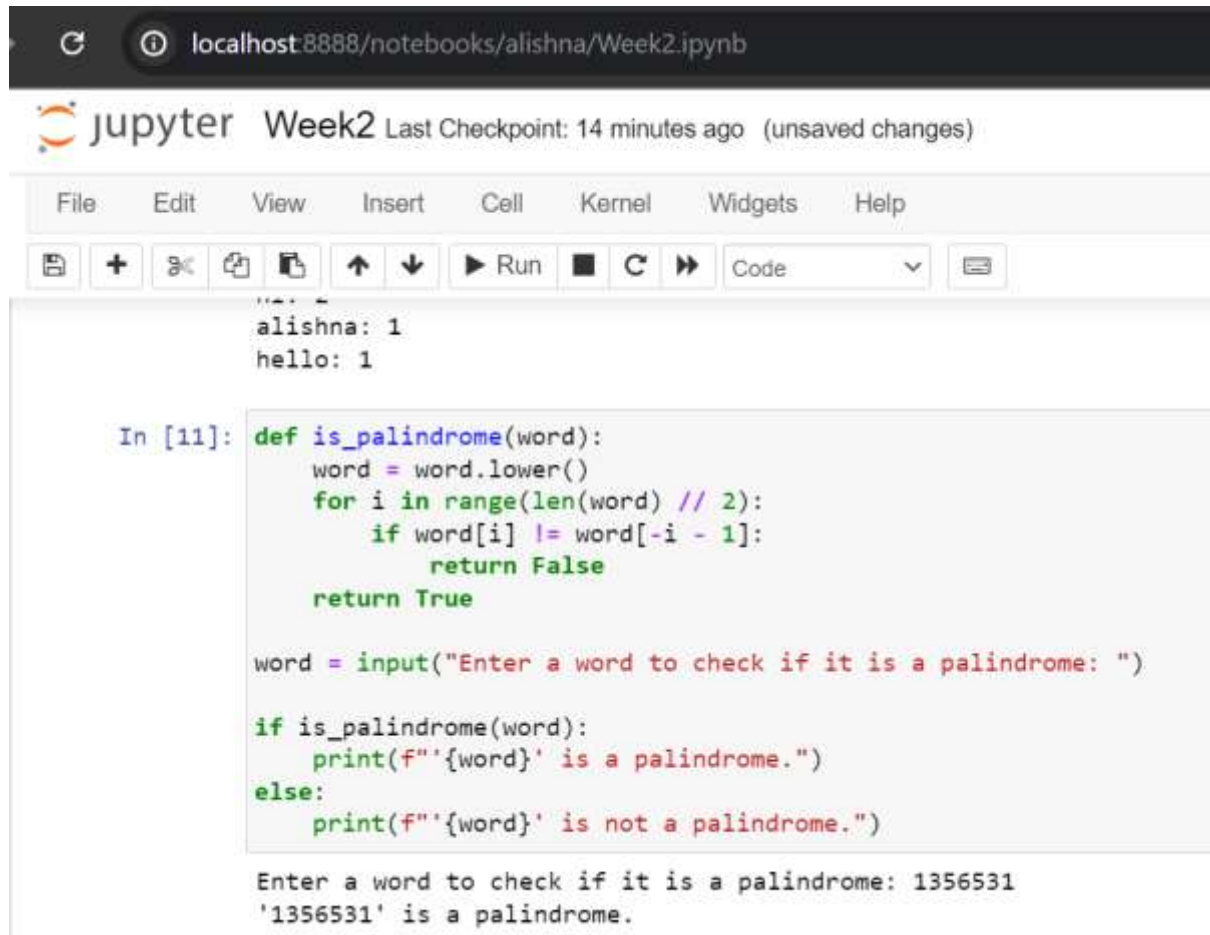
The output of the code is displayed below the code cell:

```
hi: 2
alishna: 1
hello: 1
```

Explanation: First, it cleans up the text by making everything lowercase and getting rid of any punctuation marks. Then, it splits the text into individual words. After that, it starts counting: for each word, it keeps track of how many times it shows up. Finally, it presents the results by listing each word along with its count.

2. Write a program that checks if a given word is a palindrome.

Program:



The screenshot shows a Jupyter Notebook titled "Week2" with a last checkpoint 14 minutes ago. The interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for saving, adding cells, undo, redo, and running code. The code cell contains the following Python code:

```
"""
alishna: 1
hello: 1

In [11]: def is_palindrome(word):
          word = word.lower()
          for i in range(len(word) // 2):
              if word[i] != word[-i - 1]:
                  return False
          return True

          word = input("Enter a word to check if it is a palindrome: ")

          if is_palindrome(word):
              print(f'{word} is a palindrome.')
          else:
              print(f'{word} is not a palindrome.')

          Enter a word to check if it is a palindrome: 1356531
          '1356531' is a palindrome.
```

Explanation: The loop iterates through the first half of the string, comparing each character with its corresponding character from the end. If all pairs match, the word is a palindrome; otherwise, it's not.

3. Create a list of numbers, then write a program that prints the square of each number in the list.

Program:

```
In [13]: numbers = [1, 2, 3, 4, 5]
         squares = [number ** 2 for number in numbers]
         for square in squares:
             print(square)

1
4
9
16
25
```

Explanation This program makes a list of numbers. Then, it goes through each number in the list, calculates its square, and shows the result