

Q1.

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

Description:

The below code reads a string input from the user. It then imports the Counter function from the collections module, which is used to count the occurrences of each character in the given string. The code then uses the Counter function to count the number of occurrences of each word in the string. Finally, it prints the count of each word in the string in a dictionary format.

Code:

```
#Reading String from user
```

```
string=input()
```

```
#Importing Counter function from collections module
```

```
from collections import Counter
```

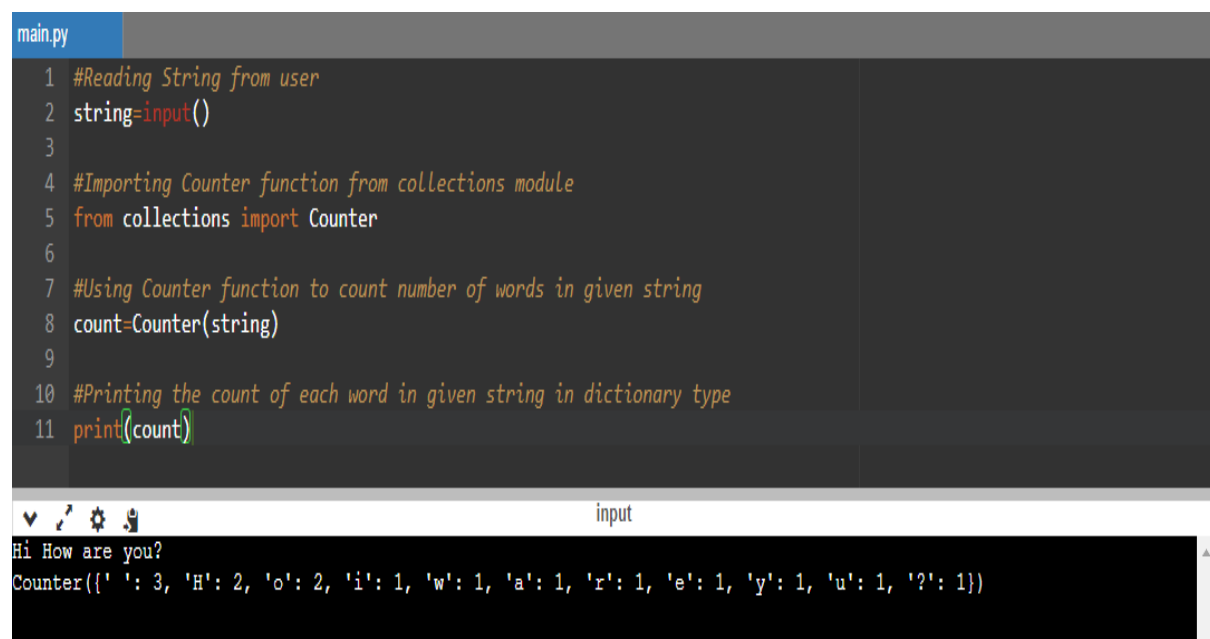
```
#Using Counter function to count number of words in given string
```

```
count=Counter(string)
```

```
#Printing the count of each word in given string in dictionary type
```

```
print(count)
```

Output:



The screenshot shows a Python IDE with a file named 'main.py'. The code in the editor is as follows:

```
1 #Reading String from user
2 string=input()
3
4 #Importing Counter function from collections module
5 from collections import Counter
6
7 #Using Counter function to count number of words in given string
8 count=Counter(string)
9
10 #Printing the count of each word in given string in dictionary type
11 print(count)
```

Below the code editor, there is a terminal window. It shows the input 'Hi How are you?' and the output of the Counter function: 'Counter({' ': 3, 'H': 2, 'o': 2, 'i': 1, 'w': 1, 'a': 1, 'r': 1, 'e': 1, 'y': 1, 'u': 1, '?': 1})'.

Q2.

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

Description:

The below code snippet takes input from the user as a string. It then checks whether the given string is a palindrome or not by comparing the string with its reverse (obtained using slicing `string[::-1]`). If the string is the same when read in reverse, it's considered a palindrome and a corresponding message is printed. Otherwise, it's stated that the string is not a palindrome.

Code:

```
#Reading String from user
```

```
string=input()
```

```
#checking whether given string is palindorme or not
```

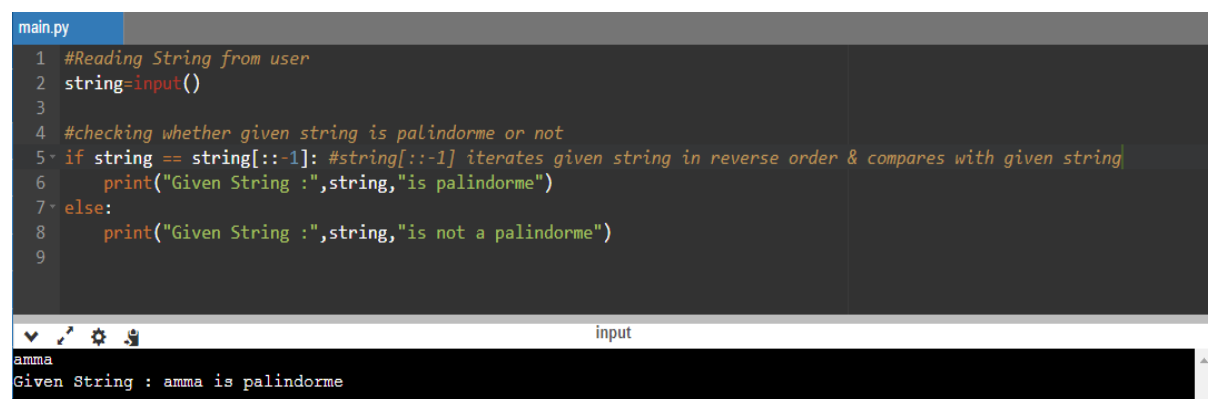
```
if string == string[::-1]: #string[::-1] iterates given string in reverse order & compares with given string
```

```
    print("Given String :",string,"is palindorme")
```

```
else:
```

```
    print("Given String :",string,"is not a palindorme")
```

Output:

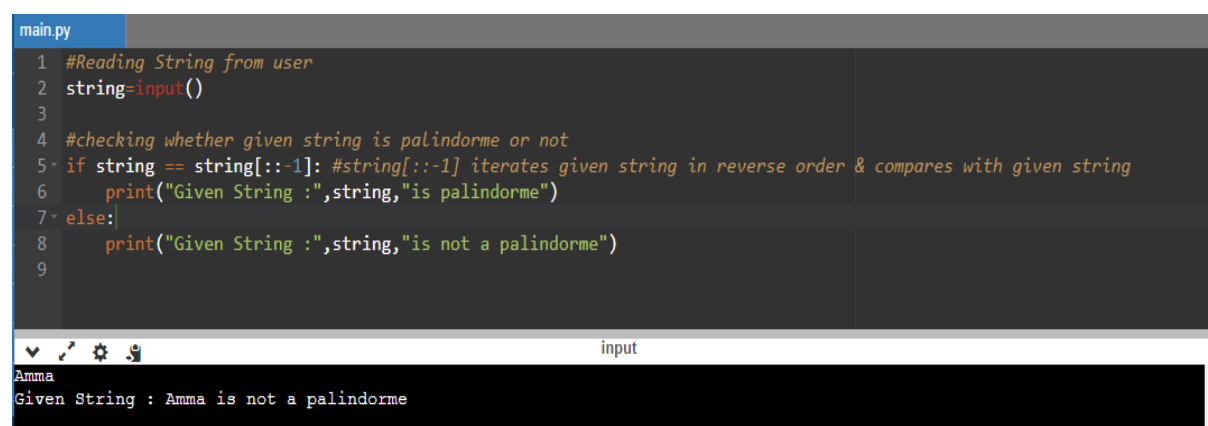


```
main.py
1 #Reading String from user
2 string=input()
3
4 #checking whether given string is palindorme or not
5 if string == string[::-1]: #string[::-1] iterates given string in reverse order & compares with given string
6     print("Given String :",string,"is palindorme")
7 else:
8     print("Given String :",string,"is not a palindorme")
9
```

input

amma

Given String : amma is palindorme



```
main.py
1 #Reading String from user
2 string=input()
3
4 #checking whether given string is palindorme or not
5 if string == string[::-1]: #string[::-1] iterates given string in reverse order & compares with given string
6     print("Given String :",string,"is palindorme")
7 else:
8     print("Given String :",string,"is not a palindorme")
9
```

input

Amma

Given String : Amma is not a palindorme

Q3.

List Manipulation:

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

Description:

The below program creates a list of numbers `[1, 2, 3, 4, 5]` and then calculates and prints the square of each number in the list using a `for` loop. It iterates through each number in the list (`num`), calculates its square using the exponentiation operator `\*\*`, and prints the result in the format "number squared is result".

Code:

```
# Create a list of numbers
```


```
numbers = [1, 2, 3, 4, 5]
```

```
# Print the square of each number in the list
```

```
for num in numbers:
```

```
    print(num, "squared is", num ** 2)
```

Output:



The screenshot shows a code editor with a file named 'main.py'. The code is as follows:

```
1 # Create a list of numbers
2 numbers = [1, 2, 3, 4, 5]
3
4 # Print the square of each number in the list
5 for num in numbers:
6     print(num, "squared is", num ** 2)
7
```

Below the code editor, the output is displayed in a terminal window. The output consists of five lines, each showing a number from the list followed by its square and the text 'squared is'.

```
1 squared is 1
2 squared is 4
3 squared is 9
4 squared is 16
5 squared is 25
```