Worksheet_set_1_python

December 27, 2023

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#Write a python program to find the factorial of a number.
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def factorial(n):
    if n == 0 or n == 1:
        return 1
    else:
        return n * factorial(n - 1)


number = int(input("Enter a number: "))

if number < 0:
    print("Invalid number to find factorial")
else:
    result = factorial(number)
    print(f"The factorial of {number} is {result}")
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Enter a number: 4
The factorial of 4 is 24
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#Write a python program to find whether a number is prime or composite.
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[43]:
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def is_prime(num):
    if num <= 1:
        return False
    for i in range(2, int(num**0.5) + 1):
        if num % i == 0:
            return False
    return True

number = int(input("Enter a number: "))


if is_prime(number):
    print(f"{number} is a prime number.")
else:
```

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    print(f"{number} is a composite number.")
```

```
Enter a number: 41
41 is a prime number.
```

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[44]:
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#Write a python program to check whether a given string is palindrome or not.
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[59]:
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def is_palindrome(string):
    clean_string = ''.join(string.split()).lower()
    return clean_string == clean_string[::-1]


user_input = input("Enter a string: ")


if is_palindrome(user_input):
    print(f"{user_input} is a palindrome.")
else:
    print(f"{user_input} is not a palindrome.")
```

```
Enter a string: Gits is I saw was I si stig
Gits is I saw was I si stig is a palindrome.
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#Write a Python program to get the third side of right-angled triangle from two␣
 ↪given sides.
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[60]:
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def find_third_side(side1,side2):
    third_side = (side1**2 + side2**2)**0.5
    return third_side

side1 = float(input("Enter the length of the first side: "))
side2 = float(input("Enter the length of the second side: "))

result = find_third_side(side1, side2)
print(f"The length of the third side is: {result}")
```

```
Enter the length of the first side: 21
Enter the length of the second side: 23
The length of the third side is: 31.144823004794873
```

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#Write a python program to print the frequency of each of the characters␣
 ↪present in a given string.
```

[68]:
```python
def character_frequency(input_string):
    frequency = {}

    for char in input_string:
        if char in frequency:
            frequency[char] += 1
        else:
            frequency[char] = 1

    for char, count in frequency.items():
        print(f"Character: {char}, Frequency: {count}")


user_input = input("Enter a string: ")
character_frequency(user_input)
```

```
Enter a string: I am studying Data Science
Character: I, Frequency: 1
Character:  , Frequency: 4
Character: a, Frequency: 3
Character: m, Frequency: 1
Character: s, Frequency: 1
Character: t, Frequency: 2
Character: u, Frequency: 1
Character: d, Frequency: 1
Character: y, Frequency: 1
Character: i, Frequency: 2
Character: n, Frequency: 2
Character: g, Frequency: 1
Character: D, Frequency: 1
Character: S, Frequency: 1
Character: c, Frequency: 2
Character: e, Frequency: 2
```

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