

Project1

To find the Factorial of a Number

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In [ ]: # Python program to find the factorial of a number .
num = 7

factorial = 1

# check if the number is negative, positive or zero
if num < 0:
    print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
    print("The factorial of 0 is 1")
else:
    for i in range(1,num + 1):
        factorial = factorial*i
    print("The factorial of",num,"is",factorial)
```

find whether a number is prime or composite

```
In [2]: num = int(input("Enter any number : "))
if num > 1:
    for i in range(2, num):
        if (num % i) == 0:
            print(num, "is NOT a prime number")
            break
    else:
        print(num, "is a PRIME number")
elif num == 0 or 1:
    print(num, "is a neither prime NOR composite number")
else:
    print(num, "is NOT a prime number it is a COMPOSITE number")
```

Enter any number : 3
3 is a PRIME number

check whether a given string is palindrome or not.

```
In [3]: import re
def reverse_string(string):
    rstring = string[::-1]
    return rstring

def is_palindrome(s):
    rstring = reverse_string(s)
    return True if (rstring == s) else False

s = "madam"

flag = is_palindrome(s)
if flag == 1:
    print(s, 'is a palindrome')
else:
    print(s, 'is not a palindrome')
```

madam is a palindrome

get the third side of right-angled triangle from two given sides.

```
In [5]: def pythagoras(opposite_side,adjacent_side,hypotenuse):
    if opposite_side == str("x"):
        return ("Opposite = " + str(((hypotenuse**2) - (adjacent_side**2))**0.5))
    elif adjacent_side == str("x"):
        return ("Adjacent = " + str(((hypotenuse**2) - (opposite_side**2))**0.5))
    elif hypotenuse == str("x"):
        return ("Hypotenuse = " + str(((opposite_side**2) + (adjacent_side**2))**0.5))

print(pythagoras(3,4,'x'))
print(pythagoras(3,'x',5))
print(pythagoras('x',4,5))
print(pythagoras(3,4,5))
```

Hypotenuse = 5.0
Adjacent = 4.0
Opposite = 3.0
None

print the frequency of each of the characters present in a given string

```
In [6]: input_string = "Data Science"
frequencies = {}

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

print ("Per char frequency in '{}' is :\n {}".format(input_string, str(frequencies)))
```

Per char frequency in 'Data Science' is :
{ 'D': 1, 'a': 2, 't': 1, ' ': 1, 'S': 1, 'c': 2, 'i': 1, 'e': 2, 'n': 1}

In []: