

## generating random number

```
In [25]: ► import random  
print(random.randint(0,10))
```

8

## check if the number is odd or even

```
In [27]: ► num = int(input("enter the number: "))  
if (num % 2) == 0:  
    print("{0} is even".format(num))  
else:  
    print("{0} is odd".format(num))
```

enter the number: 6  
6 is even

## check if a number is prime

```
In [46]: ► num = int(input("enter the number: "))  
if num == 1:  
    print(num, " is not a prime number!")  
elif num > 1:  
    for i in range(2, num):  
        if (num % i) == 0:  
            print(num, " is not a prime number")  
            print(i, "times", num//i, "is" , num)  
            break  
        else:  
            print(num, "is a prime number")  
else:  
    print(num, "is not a prime number at all!")
```

enter the number: 97  
97 is a prime number

## check prime number within an interval

```
In [45]: lower = int(input("enter the lower number: "))
upper = int(input("enter the upper number: "))
print("prime number between ",lower,"and",upper,"are: ")
for num in range(lower,upper + 1):
    if num > 1:
        for i in range(2, num):
            if (num % i) == 0:
                break
        else:
            print(num)
```

```
enter the lower number: 1
enter the upper number: 100
prime number between 1 and 100 are:
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97
```

## finding the factorial of a number

```
In [2]: num = int(input("enter the number: "))
factorial = 1
if num < 0:
    print("sorry, negative number does not have factorials!")
elif num == 0:
    print("factorial of zero is 1 ")
else:
    for i in range(1,num + 1):
        factorial = factorial * i
    print("the factorial of ",num,"is",factorial)
```

```
enter the number: 5
the factorial of 5 is 120
```

## creating multiplication for a number

```
In [4]: num = int(input("enter the number: "))
for i in range(1,11):
    print(num, '*', i, '=', num*i )
```

```
enter the number: 4
4 * 1 = 4
4 * 2 = 8
4 * 3 = 12
4 * 4 = 16
4 * 5 = 20
4 * 6 = 24
4 * 7 = 28
4 * 8 = 32
4 * 9 = 36
4 * 10 = 40
```

## generating fibonacci sequence

```
In [7]: ▶ nterm = int(input("how many term: "))
n1,n2 = 0,1
count = 0
if nterm <= 0:
    print("plz enter a positive number!")
elif nterm == 1:
    print("fibonacci sequence upto",nterm,':' )
    print(n1)
else:
    print("fibonacci sequence : ")
    while count < nterm:
        print(n1)
        nth = n1 + n2
        n1 = n2
        n2 = nth
        count += 1

how many term: 2
fibonacci sequence :
0
1
```

## find the safe-box pin

```
In [11]: ▶ def pins_total(pins_digits):
    sum_digits = 0
    for k in pins_digits:
        sum_digits += pins_digits[k]
    return sum_digits

def pin_is_ok(pins_digits):
    if pins_digits['fifth'] + pins_digits['third'] == 14 and \
        pins_digits['first'] == pins_digits['second'] * 2 - 1 and \
        pins_digits['fourth'] == pins_digits['second'] + 1 and \
        pins_digits['second'] + pins_digits['third'] == 10:
        if pins_total(pins_digits) == 30:
            return True

for pins in range(0,100000):
    this_pin = str(pins).zfill(5)

    pins_digits = {}
    pins_digits['first'] = int(this_pin[0])
    pins_digits['second'] = int(this_pin[1])
    pins_digits['third'] = int(this_pin[2])
    pins_digits['fourth'] = int(this_pin[3])
    pins_digits['fifth'] = int(this_pin[4])

    if pin_is_ok(pins_digits):
        print(pins)
```

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## simple calculator

```
In [17]: ▶ def add(x,y):
    return x + y

def subtraction(x,y):
    return x - y

def multiply(x,y):
    return x * y

def divide(x,y):
    return x/y
print("select the operations: ")
print("1: add ")
print("2: subtraction ")
print("3: multiply ")
print("4: divide ")
while True:
    choice = input("enter choice(1/2/3/4)")
    if choice in ('1','2','3','4'):
        num1 = float(input("enter the first number: "))
        num2 = float(input("enter the second number: "))
        if choice == '1':
            print(num1,"+",num2,"=",add(num1,num2))
        elif choice == '2':
            print(num1,"-",num2,"=",subtraction(num1,num2))
        elif choice == '3':
            print(num1,"*",num2,"=",multiply(num1,num2))
        elif choice == '4':
            print(num1,"/",num2,"=",divide(num1,num2))

        next_calculation = input("let's do next calculations? (yes/no)")
        if next_calculation.lower() == "no":
            break
    else:
        print("invalid input!")
```

```
select the operations:
1: add
2: subtraction
3: multiply
4: divide
enter choice(1/2/3/4)5
invalid input!
enter choice(1/2/3/4)1
enter the first number: 1
enter the second number: 1
1.0 + 1.0 = 2.0
let's do next calculations? (yes/no)no
```

## make a simple guess number programm

```
In [1]: ▶ import random
top_of_range = input("enter the top number: ")
if top_of_range.isdigit():
    top_of_range = int(top_of_range)
    if top_of_range <= 0:
        print("please enter a number greater then zero next time!")
        quit()
    else:
        print("plz type number next time!")
        quit()
```

```
enter the top number: -3
plz type number next time!
```

```
In [ ]: ▶
```