```
x=10
print(x)
y=3.14
print(y)
name="john"
pri

print('hello world')
print('mythri')
print('computer science engineering')

hello world
mythri
computer science engineering

print('i am your student')

i am your student

x=10
print(x)
y=3.14
print(y,name)
name="john"
print(name)
print(name + 'is a teacher')
print(x,y,name)

10
3.14 john
john
johnis a teacher
10 3.14 john

name=input('enter your name')
a=input('enter a number')
print(name)

enter your namekanasu
enter a number7
kanasu

a=input("enter your number")
b=input("enter your number")
c=(a+b)
print(c)

enter your number17
enter your number7
177
```

area of circle

```
a=int(input("enter the number"))
b=int(input("enter the number"))
print(a+b)
print(a-b)
print(a*b)
print(a/b)
print(a%b)
print(a**b)
```

```
enter the number12
enter the number13
25
-1
156
0.9230769230769231
12
106993205379072
```

```
r=float(input("enter the radius"))
area=3.14*r*r
print(area)
```

```
enter the radius1
3.14
```

temperatur converter

```
celsius=float(input("enter temperature in celsius"))
fahrenheit=(celsius*9/5)+32
print("temperature in fahrenheit:",fahrenheit)
```

```
enter temperature in celsius143
temperature in fahrenheit: 289.4
```

```
p=float(input("principal amount"))
r=float(input("rate of interest"))
t=float(input("time"))
si=(p*r*t)/100
print(si)
```

```
principal amount10
rate of interest100
time12
120.0
```

area and perimeter of rectangle

```
l=float(input("enter the length'"))
b=float(input("enter the breadth"))
area=l*b
perimerter=2*(l+b)
print("the area of rectangle is :", area)
print("the perimerter of rectangle is :", perimerter)
```

```
enter the length'23
enter the breadth28
the area of rectangle is : 644.0
the perimerter of rectangle is : 102.0
```

convert minutes to hours and minutes

```
a=int(input("enter minutes"))
hour=int(a)/60
print(hour)
minutes=a%60
c= a/b
print(c)
```

```
enter minutes125
2.0833333333333335
4.464285714285714
```

IF statements

```
age = 18
if age >= 18:
  print("your are eligible to vote.")
```

```
your are eligible to vote.
```

if-else statements

```
num = int(input("enter a number"))
if num%2 == 0:
  print("the number is even")
else:
  print("the number is odd")
```

```
enter a number567
the number is odd
```

if-elif-else statements

```
marks = int(input("enter your marks"))
if marks >= 90:
  print(" grade : A")
elif marks>=75:
    print("grade : B")
elif marks >=50:
    print("grdea : C")
elif marks < 50: # Added a condition to make the code syntactically
correct
    pass # Or any other desired action
    print("grdea : F")
```

```
enter your marks70
grdea : C
```

Loops

```
for i in range(5):
  print("interation:", i)
```

```
interation: 0
interation: 1
interation: 2
interation: 3
interation: 4
```

```
for i in range(5,10):
   print("iteration:" ,i)
```

```
iteration: 5
iteration: 6
iteration: 7
iteration: 8
iteration: 9
```

while loops

```
count = 0
while count < 5:
  print("count:", count)
  count += 1
```

```
count: 0
count: 1
count: 2
count: 3
count: 4
```

control fiow tools

```
for i in range(10):
  if i == 5:
    break
  print (i)
```

```
0
1
2
3
4
```

```
for i in  range(10):
  if i == 5:
   continue
  print(i)
```

```
0
1
2
3
4
6
7
8
9
```

pass

```
for i in range(10):
  pass
  print(i)
```

```
0
1
2
3
4
5
6
7
8
9
```

hands-on practice

```
number = int(input("enter a number"))
if number%2== 0:
  print("the number is even")
else:
    print("the number is odd")
```

```
enter a number23
the number is odd
```

sum of number in a given range

```
start=int(input("enter the start of a range"))
end=int(input("enter the end of range:"))
sum=0
for i in range(start, end+1):
  sum +=i
  print("the sum is:", sum)
```

```
enter the start of a range5
enter the end of range:10
the sum is: 5
the sum is: 11
the sum is: 18
the sum is: 26
the sum is: 35
the sum is: 45
```

factorial number

```
num=int(input("enter a number:"))
factorial=1
for i in range(1,num+1):
  factorial*=i
  print("the factorial is:", factorial)

enter a number:5
the factorial is: 1
the factorial is: 2
the factorial is: 6
the factorial is: 24
the factorial is: 120
```

fibonacci sequence

```
n=int(input("enter the number of terms:"))
a,b=0,1
for i in range(n):
  print(a,end=" ")
  a,b=b,a + b

enter the number of terms:6
0 1 1 2 3 5
```

simple calulator using if- else

```
num1=float(input("enter the first number:"))
num2=float(input("enter the second number:"))
operation=input("enter the operation(+,-,*,/,%,//,**):")
if operation == '+':
  print("result",num1+num2)
elif operation=="-":
    print("result",num1-num2)
elif operation=="*":
      print("result:",num1*num2)
elif operation == '/':
  print("result:",num1/num2)
elif operation == '%':
    print("result:",num1%num2)
elif operation == '//':
    print("result:",num1//num2)
elif operation == '**':
    print("result:",num1**num2)
else:
    print("invalid operation")

enter the first number:23
enter the second number:88
```

```
enter the operation(+,-,*,/,%,//,**):%
result: 23.0
```

check leap year

```
year=int(input("enter the year:"))
if(year%4==0 and year%100!=0) or (year%400==0):
  print(" leap year")
else:
    print("nat a leap year")
```

```
enter the year:2024
 leap year
```

```
num1=float(input("enter the fisrt number:"))
num2=float(input("enter the second number:"))
num3=float(input("enter third number"))
if num1>=num2 and num1>=num3:
  print(" the largest number is:",num1)
elif num2>=num3:
  print("the largest number is:",num2)
else:
    print("the largest number is:",num3)
```

```
enter the fisrt number:686
enter the second number:88888
enter third number09
the largest number is: 88888.0
```

+ve or -ve number

```
a=int(input("enter a number:"))
if a>=0:
  print("the number is positive")
elif a<0:
    print("the number is negative")
else:
    pass
    print("the number is zero")
```

```
enter a number:55
the number is positive
```

sum of all even number in a range

```

start=int(input("enter start of range:"))
end=int(input("enter end of range:"))
even_sum=0
```

```
for num in range(start,end+1):
  if num%2==0:
     even_sum+=num
print("sum of even number:",even_sum)


enter start of range:4
enter end of range:6
sum of even number: 10
```

Control flow and loop conditional statements

```
age = 18
if age >= 18:
  print("your are eligible to vote.")
```

```
your are eligible to vote.
```

If- else statements

```
num = int(input("enter a number: "))
if num%2 == 0:
  print("the number is even")
else:
    print("the number is odd")
```

```
enter a number: 567
the number is odd
```

```
marks = int(input("enter your marks:"))
if marks >= 90:
  print("grade: A")
elif marks >=75:
  print("grade: B")
elif marks >= 50:
    print("grade: C")
else:
  print("grade: D")
```

```
enter your marks:60
grade: C
```

```
for i in range(5):
  print("iteration:" , i)
```

```
iteration: 0
iteration: 1
iteration: 2
iteration: 3
iteration: 4
```

```
for i in range(5,60, 10):
  print("iteration:" , i)
```

```
iteration: 5
iteration: 15
iteration: 25
iteration: 35
iteration: 45
iteration: 55
```

while loops

```
count = 0
while count < 5:
  print("count:", count)
  count += 1
```

```
count: 0
count: 1
count: 2
count: 3
count: 4
```

control flow tools

```
for i in range(10):
  if i ==5:
    break
  print(i)
```

```
0
1
2
3
4
```

```
for i in range(10):
  if i ==5:
    continue
  print(i)
```

```
0
1
2
3
4
6
7
8
9
```

```
for i in range(10):
  pass
  print(i)
```

```
0
1
2
3
4
```

```
5
6
7
8
9
```

Hands-on practice

```
number=int(input("enter a number:"))
if number%2==0:
  print("the number is even")
else:
  print("the number is odd")
```

```
enter a number:22
the number is even
```

sum of numbers in a given range

```
start = int(input("enter the start of the range: "))
end = int(input("enter the end of the range : "))
sum = 0
for i in range(start, end + 1):
  sum += i
  print("the sum is:", sum)
```

```
enter the start of the range: 5
enter the end of the range : 10
the sum is: 5
the sum is: 11
the sum is: 18
the sum is: 26
the sum is: 35
the sum is: 45
```

factorial number

```
number=int(input("enter a number:"))
factorial=1
for i in range(1, number+1):
  factorial*=i
  print("the factorial is:", factorial)
```

```
enter a number:5
the factorial is: 1
the factorial is: 2
the factorial is: 6
the factorial is: 24
the factorial is: 120
```

Fibonacci sequence

```
n = int(input("enter the number of terms: "))
a, b =0, 1
for i in range(n):
  print(a, end=" ")
a,b = b, a + b

enter the number of terms: 5
0 0 0 0 0
```

simple calculator using if-else

```
num1=float(input("enter first number:"))
num2=float(input("enter second number:"))
operation=input("enter operation(+,-,*,/,//,%):")
if operation=='+':
  print("result:",num1+num2)
elif operation=='-':
  print("result:",num1-num2)
elif operation=='*':
  print("result:",num1*num2)
elif operation=='/':
  print("result:",num1/num2)
elif operation=='//':
  print("result:",num1//num2)
elif operation=='**':
  print("result:",num1**num2)
elif operation=='%':
  print("result:",num1%num2)
else:
  print("invalid operator")

enter first number:23
enter second number:88
enter operation(+,-,*,/,//,%):%
result: 23.0
```

check leap year

```


year=int(input("enter a year:"))
if(year%4==0 and year%100!=0) or(year%400==0):
  print("leap year")
else:
  print("not a leap year")

enter a year:2024
leap year
```

largest of three number

```
num1=float(input("enter the first number:"))
num2=float(input("enterthe second number:"))
num3=float(input("enter the third number"))
if num1>=num2 and num1>=num3:
  print("largest number is:",num1)
elif num2>=num3:
  print("largest number is:",num2)
else:
  print("largest number is:",num3)
```

```
enter the first number:686
enterthe second number:88888
enter the third number99
largest number is: 88888.0
```

```
a=int(input("enter a number:"))
if a>0:
  print("positive number")
elif a<0:
  print("negative number")
else:
  print("zero")
```

```
enter a number:5
positive number
```

sum of all even number in a range

```
start=int(input("enter the start of range:"))
end=int(input("enter the end of range:"))
even_sum=0
for num in range(start,end+1):
  if num%2==0:
    even_sum+=num
    print("the sum of even numbers:",even_sum)
```

```
enter the start of range:30
enter the end of range:50
the sum of even numbers: 30
the sum of even numbers: 62
the sum of even numbers: 96
the sum of even numbers: 132
the sum of even numbers: 170
the sum of even numbers: 210
the sum of even numbers: 252
the sum of even numbers: 296
the sum of even numbers: 342
```

```
the sum of even numbers: 390
the sum of even numbers: 440
```

count the numbers of vowels in a string

```
string=input("enter a string:")
vowels="aeiou"
count=0
for char in string:
  if char.lower() in vowels:
    count+=1
    print("number of vowels:" ,count)

enter a string:rakshitha
number of vowels: 1
number of vowels: 2
number of vowels: 3
```

sum of natural numbers

```
n = int(input("Enter a number: "))
sum = 0
for i in range(1, n + 1):
    sum += i
print(f"Sum is {sum}")

Enter a number: 12
Sum is 78
```

reverse a string

```
text = input("Enter a string: ")
reversed_text = ""
for char in text:
    reversed_text = char + reversed_text
print(f"Reversed string: {reversed_text}")

Enter a string: rakshitha
Reversed string: ahtihskar
```

GCD of two number

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
while b:
    a, b = b, a % b
print(f"GCD is {a}")
```

```
Enter first number: 12
Enter second number: 18
GCD is 6
```

print a pyramid number

```
rows = int(input("Enter number of rows: "))
for i in range(1, rows + 1):
    print(" " * (rows - i) + "*" * (2 * i - 1))
```

```
Enter number of rows: 3
  *
 ***
*****
```

if a number is a perfect number

```
num = int(input("Enter a number: "))
sum_divisors = 0
for i in range(1, num):
    if num % i == 0:
        sum_divisors += i
if sum_divisors == num:
    print(f"{num} is a perfect number")
else:
    print(f"{num} is not a perfect number")
```

```
Enter a number: 1
1 is not a perfect number
```

print the even numbers from 1 to N

```
n=int(input("enter a number:"))
for i in range(2,n+1,2):
  print(i,end= " ")
```

```
enter a number:3
2
```

the sum of digit of a number

```
num = int(input("Enter a number: "))
sum_digits = 0
while num > 0:
    sum_digits += num % 10
    num //= 10
print(f"Sum of digits is {sum_digits}")
```

```
Enter a number: 12
Sum of digits is 3
```

multiplication table number

```
num = int(input("Enter a number: "))
for i in range(1, 11):
    print(f"{num} x {i} = {num * i}")
```

```
Enter a number: 14
14 x 1 = 14
14 x 2 = 28
14 x 3 = 42
14 x 4 = 56
14 x 5 = 70
14 x 6 = 84
14 x 7 = 98
14 x 8 = 112
14 x 9 = 126
14 x 10 = 140
```

the LCM of two numbers

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
lcm = max(a, b)
while lcm % a != 0 or lcm % b != 0:
    lcm += 1
print(f"LCM is {lcm}")
```

print a number triangle

```
n = int(input("enter a number of rows: "))
num = 1
for i in range(1, n+1):
      for j in range(1, i + 1):
            print(num, end=" ")
            num += 1
            print()
```

```
enter a number of rows: 5
1
2
3
4
5
6
7
8
```

```
9
10
11
12
13
14
15
```

multiplication table from 1 to N

```
n = int(input("Enter a number: "))
for i in range(1, n + 1):
    print(f"Multiplication table of {i}:")
    for j in range(1, 11):
        print(f"{i} x {j} = {i * j}")
    print()
```

```
Enter a number: 2
Multiplication table of 1:
1 x 1 = 1
1 x 2 = 2
1 x 3 = 3
1 x 4 = 4
1 x 5 = 5
1 x 6 = 6
1 x 7 = 7
1 x 8 = 8
1 x 9 = 9
1 x 10 = 10

Multiplication table of 2:
2 x 1 = 2
2 x 2 = 4
2 x 3 = 6
2 x 4 = 8
2 x 5 = 10
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
2 x 10 = 20
```

Generate a list of squares of numbers from 1 to N

```
n = int(input("Enter a number: "))
squares = [i**2 for i in range(1, n + 1)]
print(squares)
```

```
Enter a number: 4
[1, 4, 9, 16]
```

```
def greet(name):
  print("hello," + name + "!")
greet("alice")
```

```
hello,alice!
```

#positional arguments

```
def add(a, b):
  return a + b
print(add(5, 3))
```

```
8
```

keyword arguments

```
def greet(name, message):
  print(message + "," + name + "!")
greet(name="alice", message="hello")
```

```
hello,alice!
```

defalut arguments

```
def greet(name, message="hello"):
  print(message + "," + name + "!")
greet("alice")
```

```
hello,alice!
```

variable length argument

1. positional arguments

```
def sum_arguments(*numbers):
  return sum(numbers)
print(sum_arguments(1 , 2 , 3 , 4))
```

```
10
```

keyword argument

```
def rajesh(**numbers):
  for key, value in numbers.items():
    print(f"{key}: {value}")
rajesh(name="rajesh" ,age=30 , city="new york")
```

```
name: rajesh
age: 30
city: new york
```

return statement

```
def square(num):
  return num * num
result=square(5)
print(result)

25
```

modules

```
import math
print(math.sqrt(16))

4.0
```

Import specific functions

```
from math import pi, sin
print(pi)
print(sin(math.radians(90)))

3.141592653589793
1.0

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("the number is prime. ")
else:
  print("the number is not prime. ")

enter a number : 2
the number is prime.
```

create a function to generate fibonacci sequence

```
def fibonacci(n):
  sequence = []
```

```
  a,b = 0,1
  for _ in range(n):
     sequence.append(a)
     a, b = b, a + b
     return sequence
terms = int(input("enter the number of terms:"))
result = fibonacci(terms)
print("fibonacci sequence:",result)



enter the number of terms:23
fibonacci sequence: [0]
```

use the 'mat' module to solve a problem

```
import math
angle=float(input("enter an angle in degrees:"))
radian=math.radians(angle)
print("since of angle:", math.sin(radian))
print("cosine of angle:",math.cos(radian))

enter an angle in degrees:90
since of angle: 1.0
cosine of angle: 6.123233995736766e-17
```

Factorial using Recursion

```
def factorial(n):
  if n == 0:
    return 1
  else:
    return n * factorial(n - 1)
num = int(input("enter a number : "))
print("factorial:", factorial(num))

enter a number : 3
factorial: 6
```

Reverse a string using a function

```
def reverse_string(s):
  return s[::-1]
text = input("enter a string:")
print("reversed string:", reverse_string(text))

enter a string:34
reversed string: 43
```

Find GCD of two numbers using a function

```
def gcd(a, b):
  while b:
    a, b = b, a % b
  return a
num1 = int(input("enter first number:"))
num2 = int(input("enter second number:"))
print("GCD:", gcd(num1,num2))

enter first number:123
enter second number:248
GCD: 1
```

DATA STRUCTURES

creating list with same data type

```
a = [1,2,3,4,5,6,7,8,9,10]
print(a)
```

```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

creating list with different data type

```
b=[1,3.5,2,"hello"]
print(b)
```

```
[1, 3.5, 2, 'hello']
```

LIST OPERATIONS

Accesing items

```
print(a[0])
print(b[1])
print(a[3])
```

```
1
3.5
4
```

Modifying items

```
a[0]=10
print(a)
```

```
[10, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

Adding items

```
a=[1,2,3,4,5]
a.append(10)
print(a)
```

```
[1, 2, 3, 4, 5, 10]
```

```
a=[1,2,3,4,5,6,7]
a.insert(3,10)
print(a)
```

```
[1, 2, 3, 10, 4, 5, 6, 7]
```

Removing items

```
c=[1,2,3,4,5,6,7,8,9]
c.remove(6)
print(c)
```

```
[1, 2, 3, 4, 5, 7, 8, 9]
```

```
r=[1,2,3,4,6,7,9,10]
r.pop(5)
print(r)
```

```
[1, 2, 3, 4, 6, 9, 10]
```

Other operations

```
a=[1,3,5,6,8,9]
print(len(a))
```

```
6
```

```
a=[3,5,4,6,2,7,9,8]
a.sort()
print(a)
a.reverse()
print(a)
```

```
[2, 3, 4, 5, 6, 7, 8, 9]
[9, 8, 7, 6, 5, 4, 3, 2]
```

Tuple

Creating a tuple

```
a=(1,2,3,4,6,5,7)
print(a)
```

```
(1, 2, 3, 4, 6, 5, 7)
```

Accesing items in a tuple

```
a[6]
```

```
7
```

Dictionaries

Creating a dictionaries

```
n={"name":"rakshi","age":18,"gender":"female"}
print(n)
```

```
{'name': 'rakshi', 'age': 18, 'gender': 'female'}

n["name"]="kitty"
n

{'name': 'kitty', 'age': 18, 'gender': 'female'}
```

Accessing and modifying items

accessing:

```
student={"name":"rakshi","age":18,"gender":"female"}
student

{'name': 'rakshi', 'age': 18, 'gender': 'female'}
```

modifying:

```
student["age"]=19
student

{'name': 'rakshi', 'age': 19, 'gender': 'female'}
```

Adding:

```
student["grade"]="A"
student

{'name': 'rakshi', 'age': 19, 'gender': 'female', 'grade': 'A'}
```

Removing:

```
del student["gender"]
student

{'name': 'rakshi', 'age': 19, 'grade': 'A'}
```

Iterating through a dictionary

```
print(student.keys())
print(student.values())
print(student.items())

dict_keys(['name', 'age', 'grade'])
dict_values(['rakshi', 19, 'A'])
dict_items([('name', 'rakshi'), ('age', 19), ('grade', 'A')])
```

SETS

```
numbers={1,2,3,4,5,6,7,8,9,10}
numbers
```

```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

set operations

adding items

```
numbers.add(16)
numbers
```

```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 16}
```

removing items

```
numbers.remove(9)
numbers
```

```
{1, 2, 3, 4, 5, 6, 7, 8, 10, 16}
```

SET OPERATIONS

```
a={1,2,3,4,5,11,24,56}
b={3,4,5,6,7,11,24,12}
print(a.union(b))
print(a.intersection(b))
print(a.difference(b))
```

```
{1, 2, 3, 4, 5, 6, 7, 11, 12, 24, 56}
{3, 4, 5, 11, 24}
{56, 1, 2}
```

Merge two lists

```
list1=[1,2,3,]
list2=[4,5,6]
merged_list=list1+list2
print("merged list:",merged_list)
```

```
merged list: [1, 2, 3, 4, 5, 6]
```

Maximum and minimum in a list

```
numbers=[10,20,30,40,50,60,70]
print("maximum:",max(numbers))
print("minimum:",min(numbers))
```

```
maximum: 70
minimum: 10
```

Count frequency of elements in a list

```
numbers=[1,2,2,3,3,3,4,4,4,4]
frequency={}
for num in numbers:
  if num in frequency:
    frequency[num]+=1
  else:
    frequency[num]=1
    print(" element frequency:", frequency)
```

```
 element frequency: {1: 1}
 element frequency: {1: 1, 2: 1}
 element frequency: {1: 1, 2: 2, 3: 1}
 element frequency: {1: 1, 2: 2, 3: 3, 4: 1}
```

sort a list of tuples by the second elements

```
tuples=[(1,'apple'),(2,'banana'),(3,'cherry')]
sorted_tuples=sorted(tuples,key=lambda X:X[1])
print("sorted tuples:", sorted_tuples)
```

```
sorted tuples: [(1, 'apple'), (2, 'banana'), (3, 'cherry')]
```

PALINDROME NUMBERS

```
number=int(input("enter a number:"))
reverse_number=0
temp=number
while temp>0:
  digit=temp%10
  reverse_number=reverse_number*10+digit
  temp=temp//10
if number==reverse_number:
  print(f"{number} palindrome")
else:
  print(f"{number} not palindrome")
```

```
enter a number:353
353 palindrome
```

PALINDROME 2

```
number=input("enter a number:")
if number==number[::-1]:
  print("palindrome")
```

```
else:
  print("not palindrome")

enter a number:rakshi
not palindrome
```

FILE HANDLING AND ERROR HANDLING IN PYTHON

File operations

1. Opening a file

```
file = open("/content/Rakshi.txt","r")
```

Reading a file

```
file = open("/content/Rakshi.txt","r")
content = file.read()
print(content)
file.close()
```

```
rakshitha
cse
1st year
```

writing to a file

```
file = open("/content/Rakshi.txt","w")
file.write("Hello, world!\n")
file.close()
```

Appending to a file

```
file = open("/content/Rakshi.txt","a")
file.write("this is an append line.\n")
file.close()
```

Using 'with' statement

```
with open("/content/Rakshi.txt","r") as file:
  content = file.read()
  print(content)
```

```
Hello, world!
this is an append line.
```

File handling modes

```
with open("/dog.jpeg","rb")as file:
  data=file.read()
```

ERROR HANDLING

```
try:
  num = int(input("enter a number:"))
  print(10/num)
except zerodivisionerror:
  print("you cannot divide by zero.")
except ValueError:
  print("invalid input! please enter a number.")
```

```
enter a number:12
0.8333333333333334
```

Finally Block

```
try:
  file = open("/content/Rakshi.txt", "r")
except fikenotfounderror:
  print("file not found.")
finally:
  print("execution complete.")
```

```
execution complete.
```

Raising exception

```
def check_age(age):
  if age<18:
    raise ValueError("age must be 18 or older.")
    return True

try:
  check_age(16)
except ValueError as e:
  print(e)
```

```
age must be 18 or older.
```

Creating a custom Exception

```
def check_positive(number):
  if number<=0:
    raise NegativeNumberError("Negative number entered.")

try:
  num = int(input("Enter a positive number:"))
  check_positive(num)
  print("You entered a positive number.")
except NegativeNumberError as e:
  print(e)
```

```
Enter a positive number:12
You entered a positive number.
```

Count Lines in a File

```
def count_lines(file_path):
    with open(file_path, 'r') as file:
        lines = file.readlines()
        return len(lines)
```

Count words in a file

```
def count_words(file_path):
    with open(file_path, 'r') as file:
        # Read the content of the file
        content = file.read()

        # Split the content into words and count them
        words = content.split()  # Split by any whitespace
        return len(words)
```

copy file contents

```
def copy_file_contents(source_file, destination_file):
    try:
        # Open the source file in read mode
        with open(source_file, 'r') as source:
            # Read the content of the source file
            content = source.read()

        # Open the destination file in write mode
        with open(destination_file, 'w') as destination:
            # Write the content to the destination file
            destination.write(content)

        print(f"Contents of {source_file} successfully copied to
{destination_file}")

    except FileNotFoundError:
        print(f"Error: The file {source_file} was not found.")
    except Exception as e:
        print(f"An error occurred: {e}")
```

Random num generator

```
import random
random_number = random.randint(1, 6)
print("The random number is:", random_number)
```

```
The random number is: 2
```

check if file exists

```
import os

def check_file_exists(file_path):
    if os.path.exists(file_path):
        print(f"The file '{file_path}' exists.")
    else:
        print(f"The file '{file_path}' does not exist.")
```

Write a list to a file

```
def write_numbers_to_file(file_path, number_list):
    try:
        # Open the file in write mode ('w')
        with open(file_path, 'w') as file:
            # Write each number from the list to the file, each on a
new line
            for number in number_list:
                file.write(f"{number}\n")  # Add a newline after each
number
        print(f"Numbers successfully written to {file_path}")
    except Exception as e:
        print(f"An error occurred: {e}")
```