raise keyword
"raise" keyword used for generating error or exception explicitly
Generating error or exception is nothing creating error or exception object and giving to python virtual machine.

Example:
```
def multiply(a,b):
    if a==0 or b==0:
        raise ValueError()
    else:
        return a*b

def main():
    try:
        n1=int(input("enter first number"))
        n2=int(input("enter second number"))
        n3=multiply(n1,n2)
        print(f'result is {n3}')
    except ValueError:
        print("cannot multiply number with zero")
main()
```

Output:
```
enter first number5
enter second number2
result is 10
>>>
============ RESTART: C:/Users/user/Desktop/python6pm/py171.py
===========
enter first number5
enter second number0
cannot multiply number with zero
>>>
```

Custom exception or user defined exception or error
Every exception or error in python class/datatype
Create an object of error is class/datatype is generating exception or error.

Syntax of creating user defined exception class or type:

```
class  <exception-class-name>(Exception):
        pass
```

every exception class/error class must inherit properties and behavior from Exception class.

Example:

```
class MultiplyError(Exception):
   pass

def multiply(a,b):
   if a==0 or b==0:
      raise MultiplyError()
   else:
      return a*b

def main():
   try:
      n1=int(input("enter the value of n1"))
      n2=int(input("enter the value of n2"))
      n3=multiply(n1,n2)
      print(n3)
   except ValueError:
      print("invalid type or type must be integer")
   except MultiplyError:
      print("cannot multiply number with 0")
main()
```

Output:

```
enter the value of n15
enter the value of n20
cannot multiply number with 0
>>>
============ RESTART: C:/Users/user/Desktop/python6pm/py172.py
===========
enter the value of n15
enter the value of n2abc
invalid type or type must be integer
>>>
```

Example:

```
account_dict={1:50000,2:45000,3:50000,4:25000,5:90000}
class InsuffBalError(Exception):
    pass
def withdraw(accno,tamt):
    balance=account_dict[accno]
    if balance<tamt:
        raise InsuffBalError()
    else:
        balance=balance-tamt
        account_dict[accno]=balance
        return balance

def main():
    try:
        accno=int(input("enter accountno"))
        tamt=float(input("enter amount to withdraw"))
        bal=withdraw(accno,tamt)
        print(f'Available balance {bal}')
    except KeyError:
        print("invalid account no")
    except InsuffBalError:
        print("balance not available")
    except ValueError:
        print("account no must be integer and amount must be float")
main()
```

Output:

```
enter accountno1
enter amount to withdraw20000
Available balance 30000.0
>>>
========== RESTART: C:/Users/user/Desktop/python6pm/py173.py
==========
enter accountno2
enter amount to withdraw90000
balance not available
>>>
========== RESTART: C:/Users/user/Desktop/python6pm/py173.py
==========
```

enter accountno101
enter amount to withdraw45000
invalid account no
>>>

Files

What is file?

File is a named memory location in disk
File is collection of data or information
Files are used to save data permanently or persists data or save data

Types of files

1. Text fie
2. Binary file

Text file is a collection of characters. In text file data is stored in the form of text or characters. It allows only strings
Binary file is collection of bytes.
Eg: images, audio, video,

Basic steps to work with files

1. Open file
2. Read/Write
3. Close file

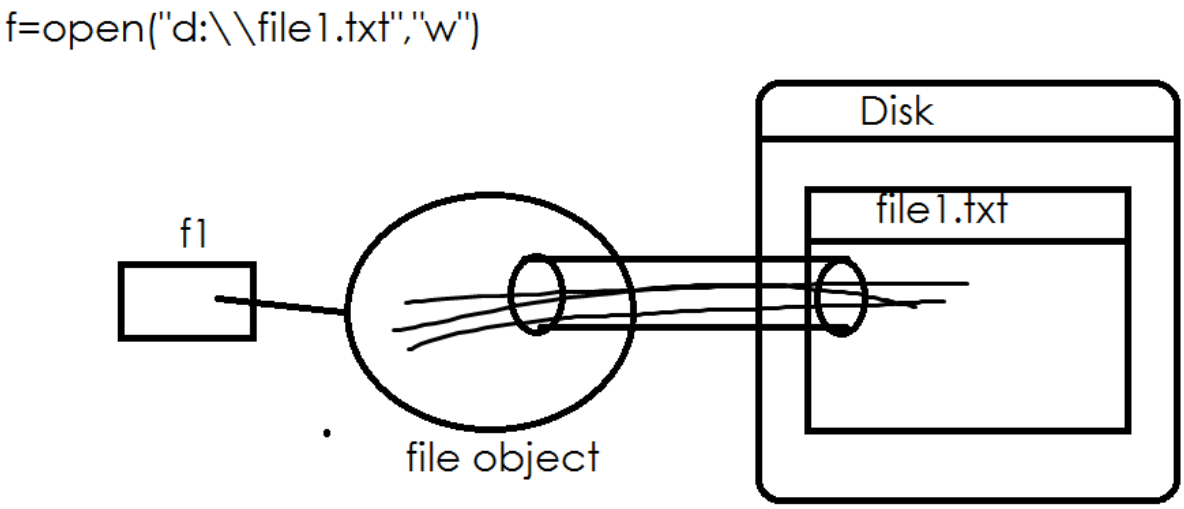
open(*file*, *mode='r')*

Open *file* and return a corresponding file object. If the file cannot be opened, an OSError is raised.

Character	Meaning
'r'	open for reading (default)
'w'	open for writing, truncating the file first
'x'	open for exclusive creation, failing if the file already exists
'a'	open for writing, appending to the end of the file if it exists
'b'	binary mode
't'	text mode (default)

'+'	open for updating (reading and writing)

The default mode is 'r' (open for reading text, synonym of 'rt'). Modes 'w+' and 'w+b' open and truncate the file. Modes 'r+' and 'r+b' open the file with no truncation



How to write text within file?

Python provides the following functions to write text inside file

1. write()
2. writelines()
3. print()