module = 4

(1) What is File function in python? What is keywords to create and write file.

- Files are named locations on disk to store related information.
- They are used to permanently store data in a non-volatile memory.
- Since RAM is volatile, we use files for future use of the data by permanently storing them.
- When we want to read from or write to a file, we need to open it first.
- When we are done, it needs to be closed so that the resources that are tied with the file are freed.
- keyword :- f = open("test.txt",'c') f = open("test.txt",'w')

(2) Write a Python program to read an entire text file.

In [1]:
```
f = open("krishna.txt",'r')
print(f.read())
```

```
name : krishna
name : taksh
name : dhruv
```

(3) Write a Python program to append text to a file and display the text.

In [14]:
```
f = open("k1.txt",'a')
f.write("hello world")
f.close()
f = open("k1.txt", "r")
print(f.read())
```

```
hello world
```

(4) Write a Python program to read first n lines of a file.

In [40]:
```
f = open("k2.txt", "r")
lines = f. readlines()
last_lines = lines[:1]
print(last_lines)
f.close()
```

```
['hello krishna\n']
```

(5) Write a Python program to read last n lines of a file.

In [39]:
```
f = open("k2.txt", "r")
lines = f. readlines()
last_lines = lines[-2:]
print(last_lines)
f.close()
```

```
['hello dhruv\n', 'hello taksh']
```

(6) Write a Python program to read a file line by line and store it into a list.

In [38]:
```
f = open("k3.txt", "r")
print(f.readlines())
f.close()
```

```
['how are you.\n', 'you are fine.\n']
```

(7) Write a Python program to read a file line by line store it into a variable.

In [41]:
```
f = open("k3.txt", "r")
a = f.readlines()
print(a)
f.close()
```

```
['how are you.\n', 'you are fine.\n']
```

(8) Write a python program to find the longest words.

In [51]:
```
f = open("k4.txt", "r")
words = f.read().split()
ml = len(max(words,key=len))
print(ml)
print(words)
```

```
7
['dhruv', 'krishna', 'taksh']
```

(9) Write a Python program to count the number of lines in a text file.

In [53]:
```
file = open("k3.txt","r")
Counter = 0
Content = file.read()
CoList = Content.split("\n")
for i in CoList:
    if i:
        Counter += 1
print("This is the number of lines in the file:")
print(Counter)
```

```
This is the number of lines in the file:
2
```

(10) Write a Python program to count the frequency of words in a file.

In [54]:
```
n = input("Enter number : ")
f = open("k5.txt","r")
str1 = f.read()
words = str1.split()
count = 0
for i in words:
        if i == n:
            count += 1
print(count)
```

```
Enter number : krishna
2
```

(11) Write a Python program to write a list to a file.

In [4]:
```
f=open("k5.txt","a")
d=["A","B","C","D"]
f.write(str(d))
f1=open("k5.txt","r")
print(f1.read())
```

```
krishna
krishna
djhruv['A', 'B', 'C', 'D']
```

(12) Write a Python program to copy the contents of a file to another file.

In [61]:
```
f=open("k4.txt","r")
d=f.read()
f1=open('k6.txt','a')
for i in d:
    f1.write(i)
f2=open("k6.txt","r")
print(f2.read())
```

```
dhruv krishna taksh
```

(13) Explain Exception handling? What is an Error in Python?

- An exception can be defined as an unusual condition in a program resulting in the interruption in the flow of the program.
- Whenever an exception occurs, the program stops the execution, and thus the further code is not executed.
- Therefore, an exception is the run-time errors that are unable to handle to Python script.
- Errors are the problems in a program due to which the program will stop the execution.
- On the other hand, exceptions are raised when some internal events occur which changes the normal flow of the program.
- Two types of Error occurs in python :-

```
Syntax errors.
Logical errors.
```

(14) How many except statements can a try-except block have? Name Some built-in exception classes:

- A list of common exceptions that can be thrown from a normal python program is given below.
- 1. ZeroDivisionError: Occurs when a number is divided by zero.
- 2. NameError: It occurs when a name is not found. It may be local or global.
- 3. IndentationError: If incorrect indentation is given.
- 4. IOError: It occurs when Input Output operation fails.
- 5. EOFError: It occurs when the end of the file is reached, and yet operations are being performed.
- ArgumentException
- FormatException
- KeyNotFoundException
- NotSupportedException

(15) When will the else part of try-except-else be executed?

- the else part of try-except-else be always executed.

(16) Can one block of except statements handle multiple exception?

- yes, one block of except statements handle multiple exception.

(17) When is the finally block executed?

- finally block is always executed after leaving the try statement.
- In case if some exception was not handled by except block, it is re-raised after execution of finally block.
- finally block is used to deallocate the system resources.

(18) What happens when „1"== 1 is executed?

- we get a false.

(19) How Do You Handle Exceptions With Try/Except/Finally In Python? Explain with coding snippets.

In [62]:
```
# * In Python, exceptions can be handled using a try statement.
# * The critical operation which can raise an exception is placed inside the
# * The code that handles the exceptions is written in the except clause.
# * We can thus choose what operations to perform once we have caught the exc
# * code=
try:
    a=5
    b='0'
    print(a/b)
except:
    print('Some error occurred.')
print("Out of try except blocks.")
```

```
Some error occurred.
Out of try except blocks.
```

(20) Write python program that user to enter only odd numbers, else will raise an exception.

In [5]:
```
try:
    a=int(input('Your Number? '))
    if a%2 !=0:
        print("the no. is odd ")
    else:
        raise
except:
    print("no valid number! plz enter valid number..")
```

```
Your Number? 12
no valid number! plz enter valid number..
```

(21) What are oops concepts? Is multiple inheritance supported in java.

- Object-oriented programming has four basic concepts: encapsulation, abstraction, inheritance and polymorphism.
- While these concepts may seem complex, understanding the general framework of how they work will help you understand the basics of an OOP computer program.
- Multiple Inheritance is a feature of an object-oriented concept, where a class can inherit properties of more than one parent class.
- The problem occurs when there exist methods with the same signature in both the superclasses and subclass.

(22) How to Define a Class in Python? What Is Self? Give An Example Of A Python Class.

- A class in Python can be defined using the class keyword.
- As per the syntax above, a class is defined using the class keyword followed by the class name and : operator after the class name, which allows you to continue in the next indented line to define class members.
- The self parameter is a reference to the current instance of the class, and is used to access variables that belongs to the class.

- class MyClass:
- x = 5

(23) Write a Python class named Rectangle constructed by a length and width and a method which will compute the area of a rectangle

In [67]:
```
class Rectangle():
    def __init__(self, l, w):
        self.length = l
        self.width  = w

    def rectangle_area(self):
        return self.length*self.width
a = Rectangle(12, 10)
print(a.rectangle_area())
```

```
120
```

(24) Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle

In [68]:
```
class Circle():
    def __init__(self, r):
        self.radius = r

    def area(self):
        return self.radius**2*3.14

    def perimeter(self):
        return 2*self.radius*3.14

a = Circle(8)
print(a.area())
print(a.perimeter())
```

```
200.96
50.24
```

(25) Explain Inheritance in Python with an example? What is init? Or What Is A Constructor In Python?

- Inheritance:-
- Inheritance relationship defines the classes that inherit from other classes as derived, subclass, or sub-type classes.
- Base class remains to be the source from which a subclass inherits.
- For example, you have a Base class of “Animal,” and a “Lion” is a Derived class. The inheritance will be Lion is an Animal.
- Init():-
- The *init* method is the Python equivalent of the C++ constructor in an object-oriented approach.

- The *init* function is called every time an object is created from a class.
- The *init* method lets the class initialize the object's attributes and serves no other purpose.
- It is only used within classes.
- Constructor:-
- Constructors are generally used for instantiating an object.
- The task of constructors is to initialize(assign values) to the data members of the class when an object of the class is created.
- In Python the *init*() method is called the constructor and is always called when an object is created.

(26) What is Instantiation in terms of OOP terminology?

- Instantiate and instantiation in computer science refer to the creation of an object in an object-oriented programming (OOP) language.
- Referencing a class declaration, an instantiated object is named and created, in memory or on disk.

(27) What is used to check whether an object o is an instance of class A?

- Using isinstance() function, we can test whether an object/variable is an instance of the specified type or class such as int or list.
- In the case of inheritance, we can checks if the specified class is the parent class of an object.
- For example, isinstance(x, int) to check if x is an instance of a class int .

(28) What relationship is appropriate for Course and Faculty?

- containership

(29) What relationship is appropriate for Student and Person?

- inheritance