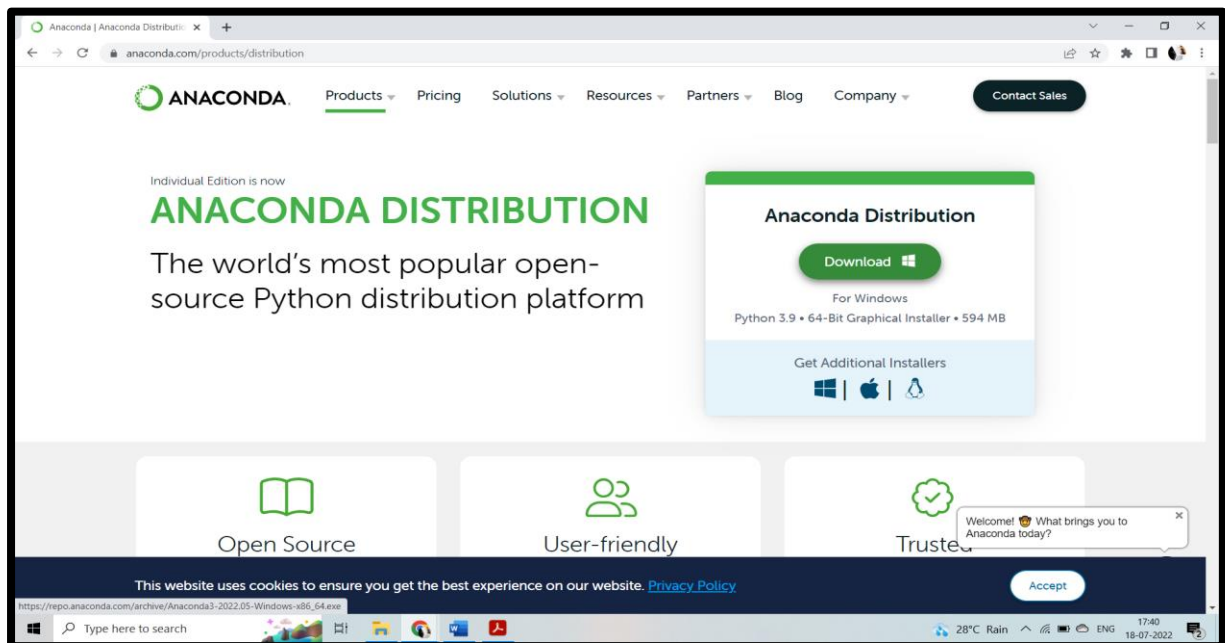


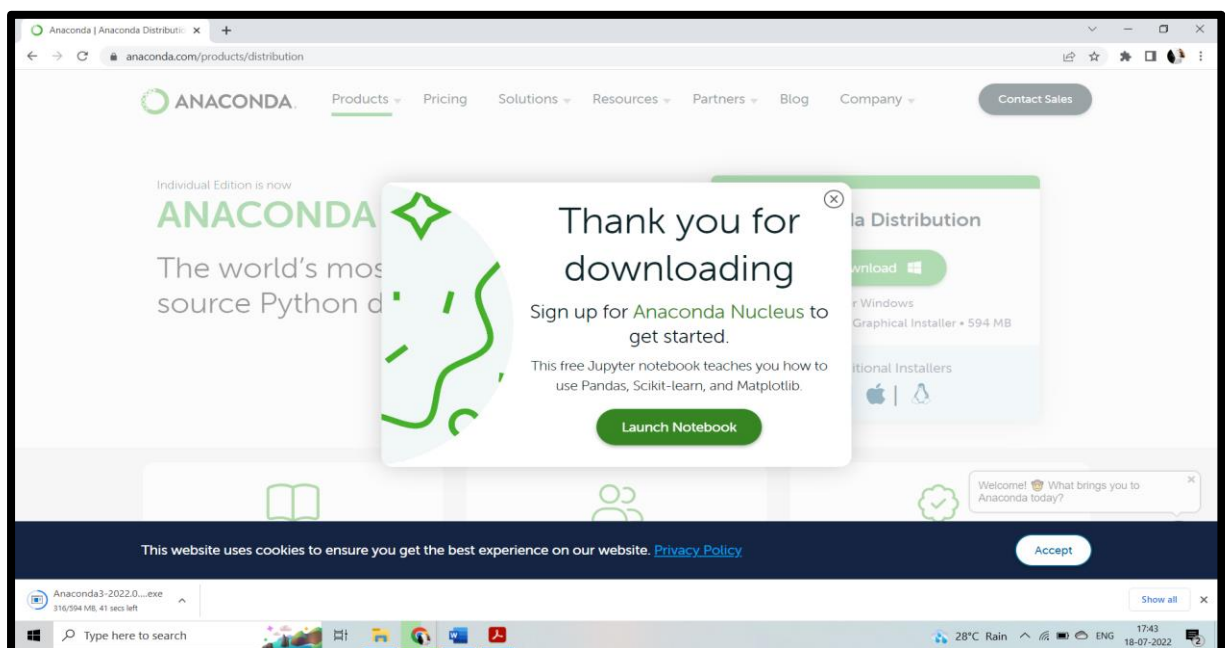
## Practical: - 1

**Aim: - Install and learn python idle in interactive and batch mode.**

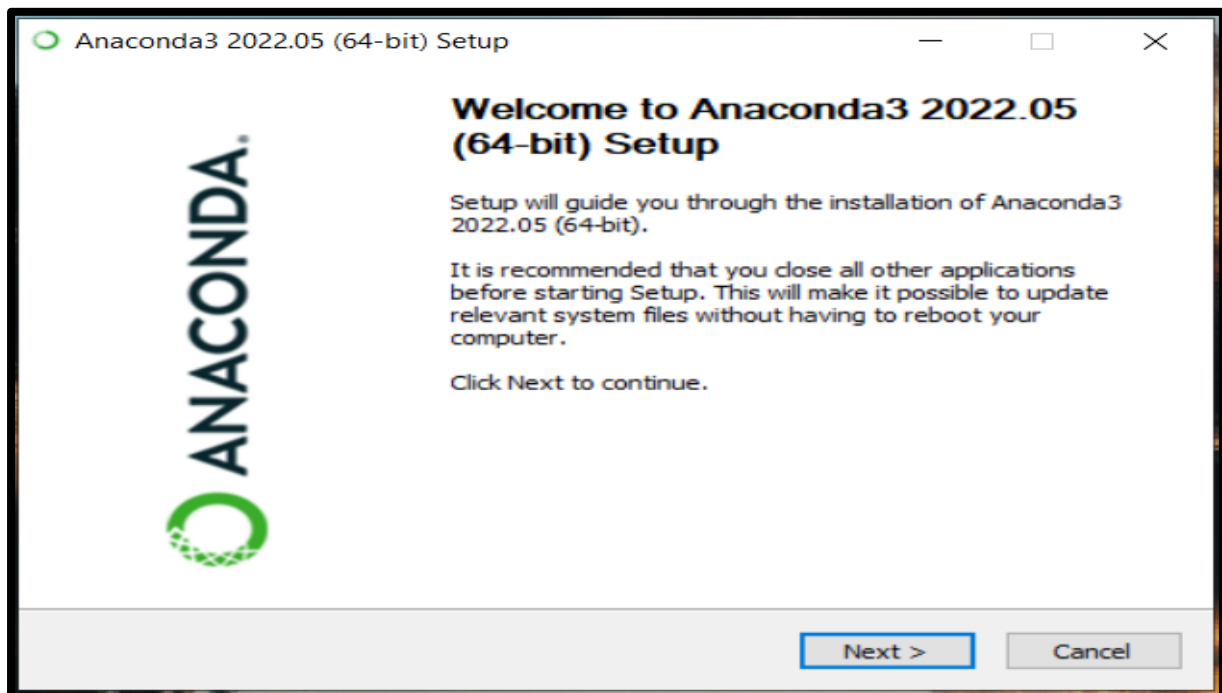
**Step 1: -** Click here to Download [ANACONDA DISTRIBUTION](https://anaconda.com/products/distribution) on Windows.



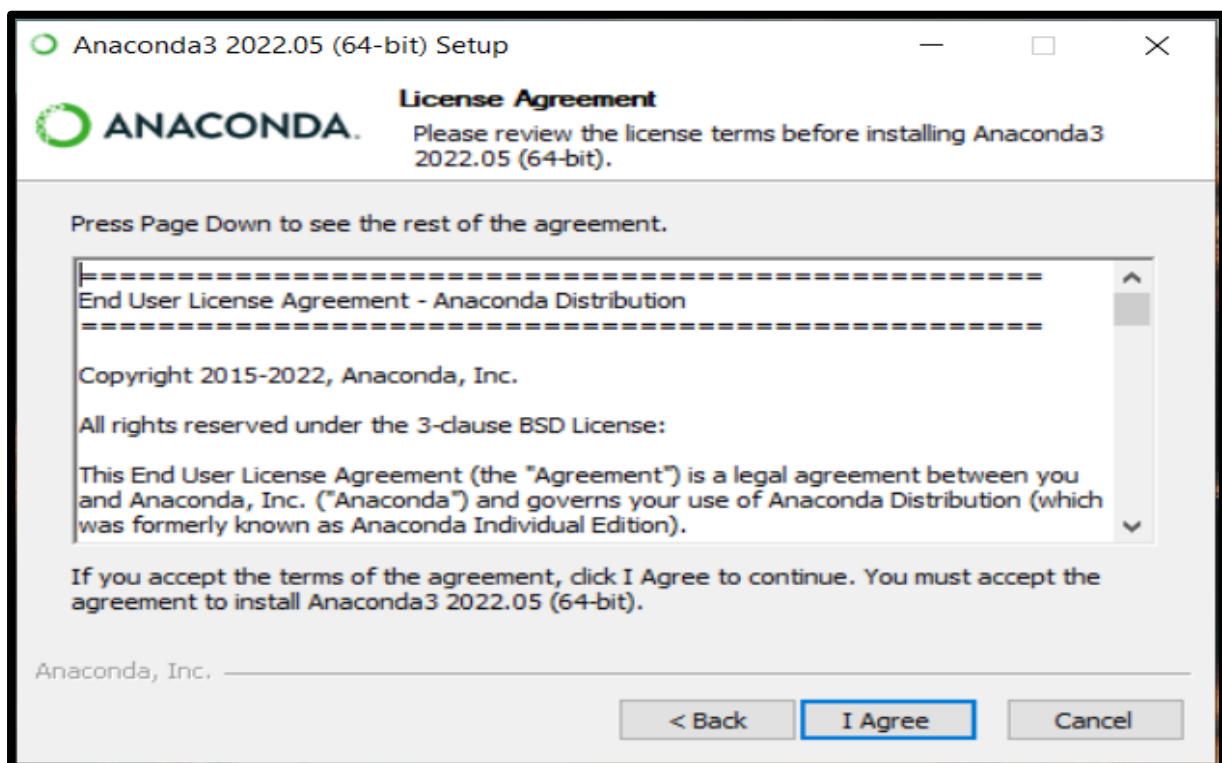
**Step 2: -** Click on download button and create a folder for anaconda.



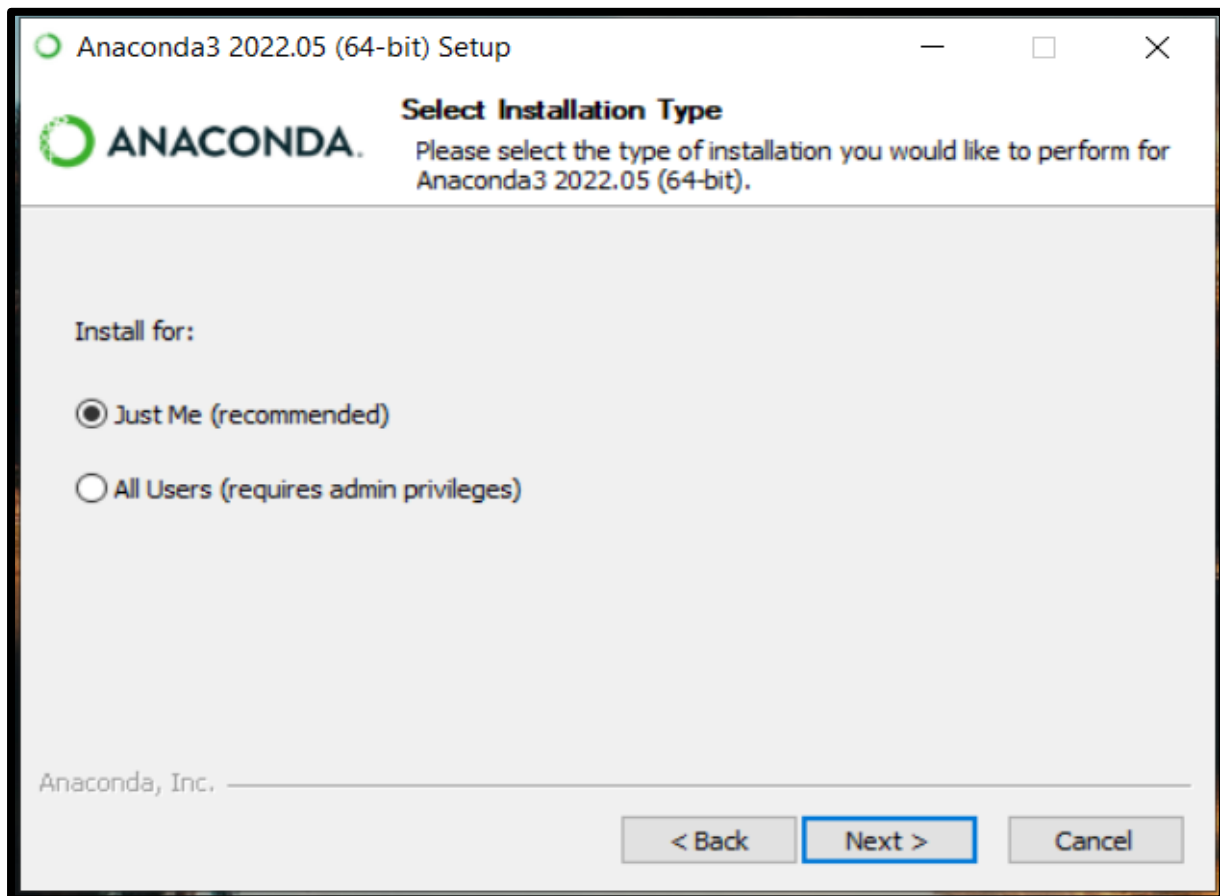
**Step 3:** - Click on next.



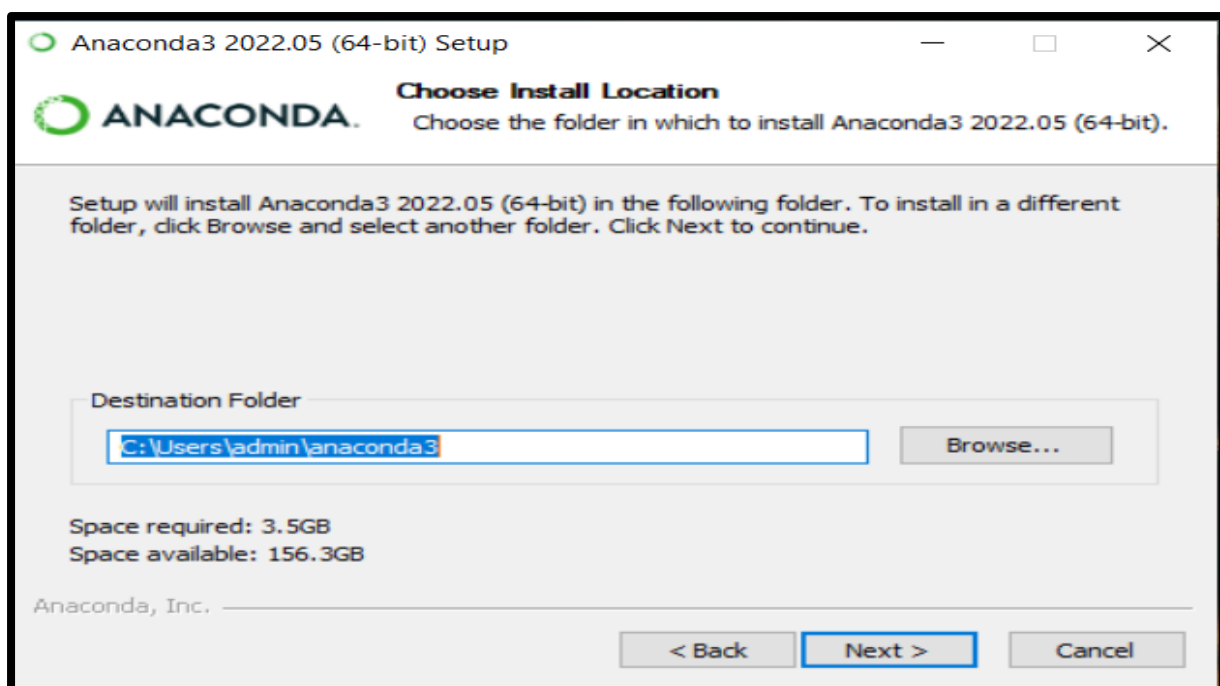
**Step 4:** - Click on next and agree the license agreement.



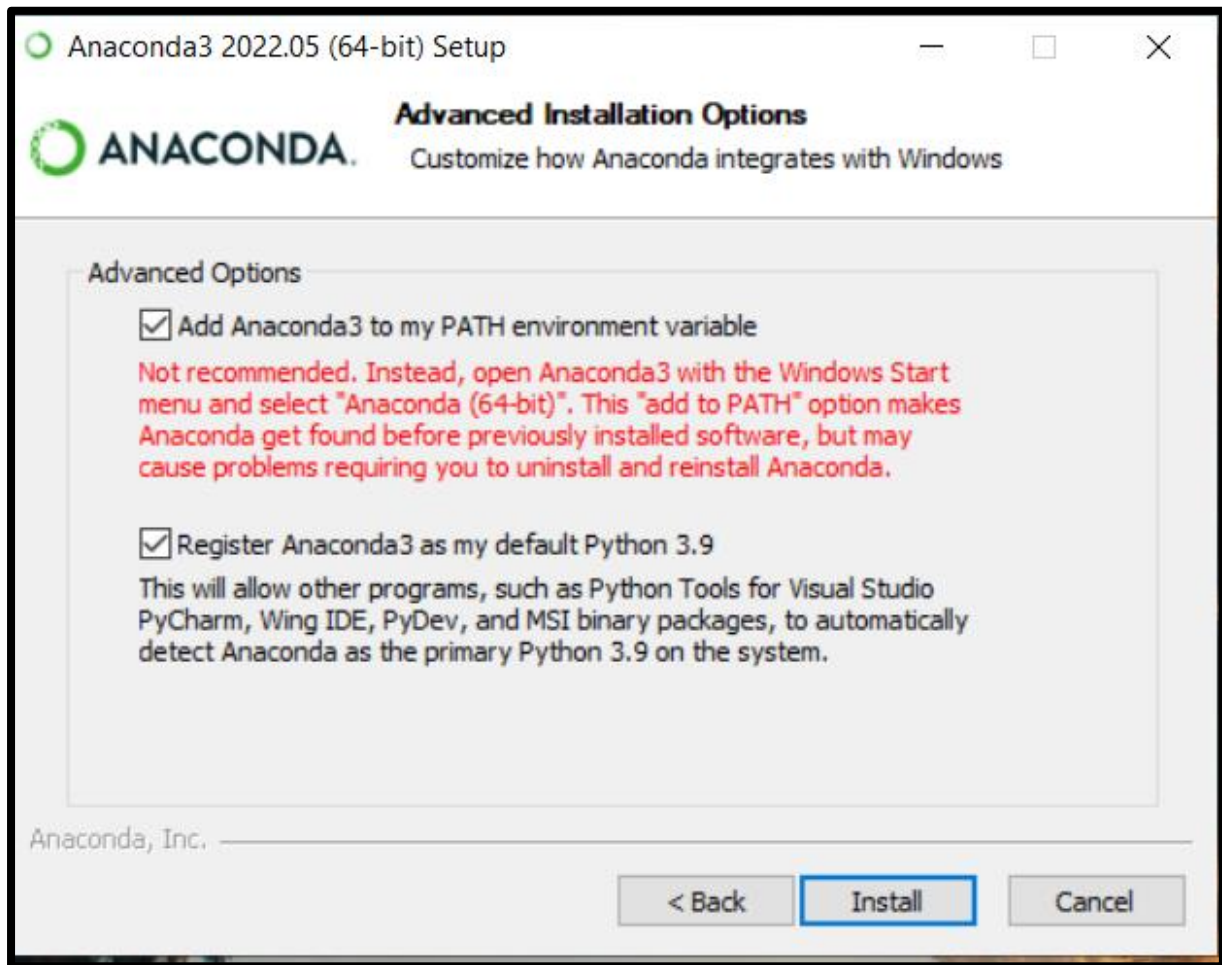
**Step 5: -** By default It shows JUST ME (recommended) the click on next



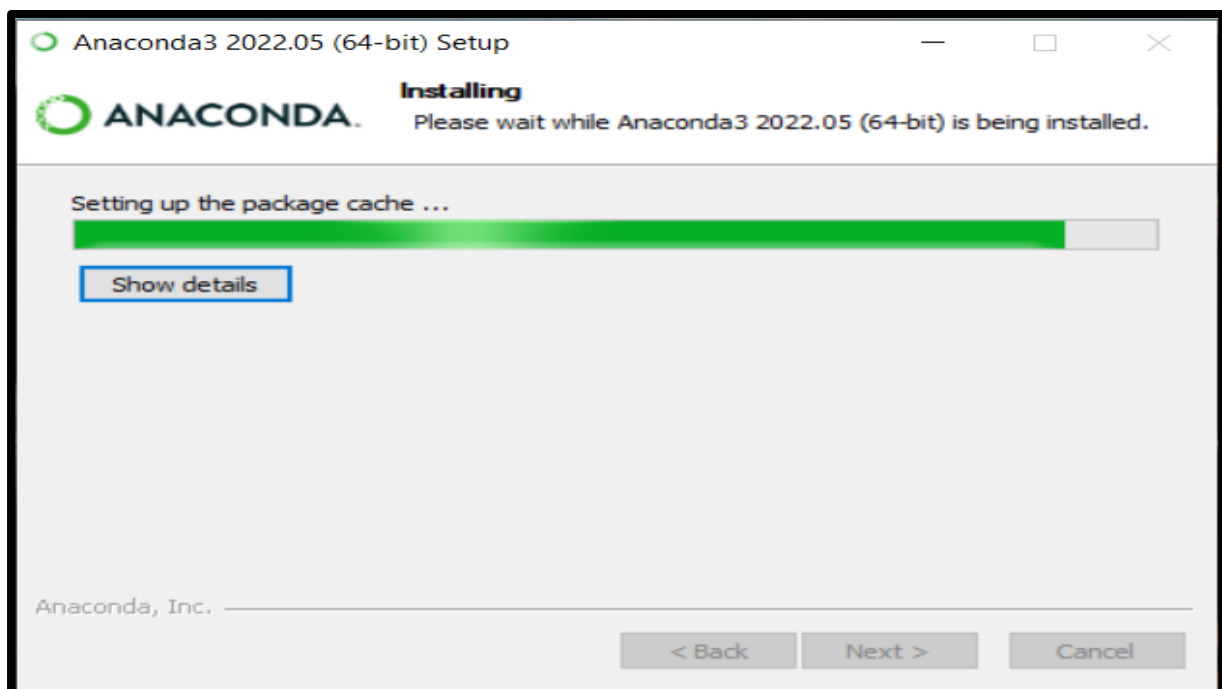
**Step 6: -** Click on next



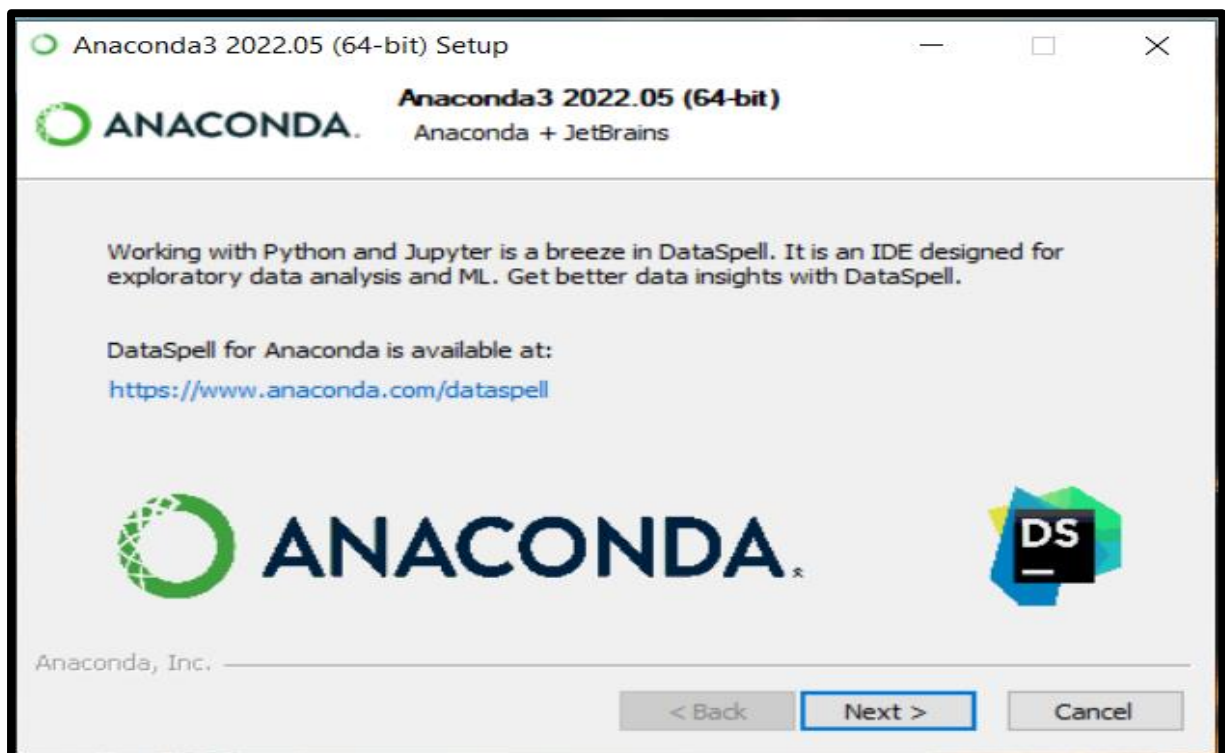
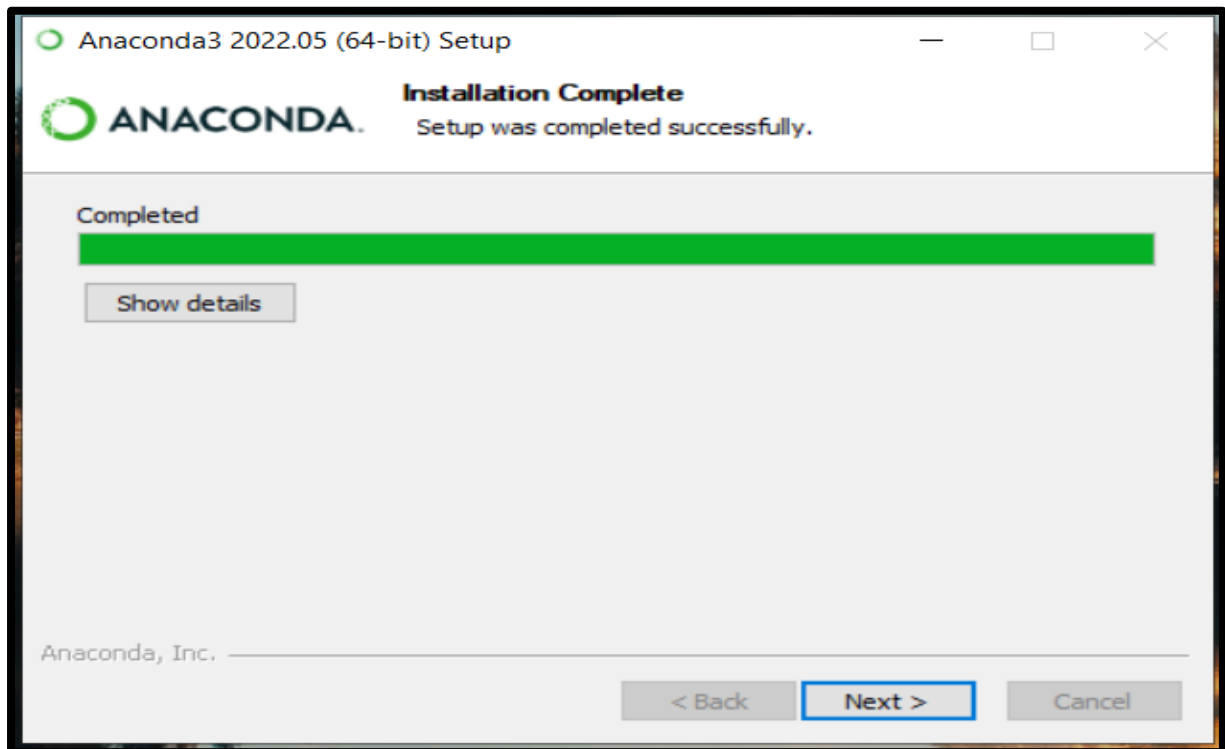
**Step 7: -** Enable two options here and then click on install

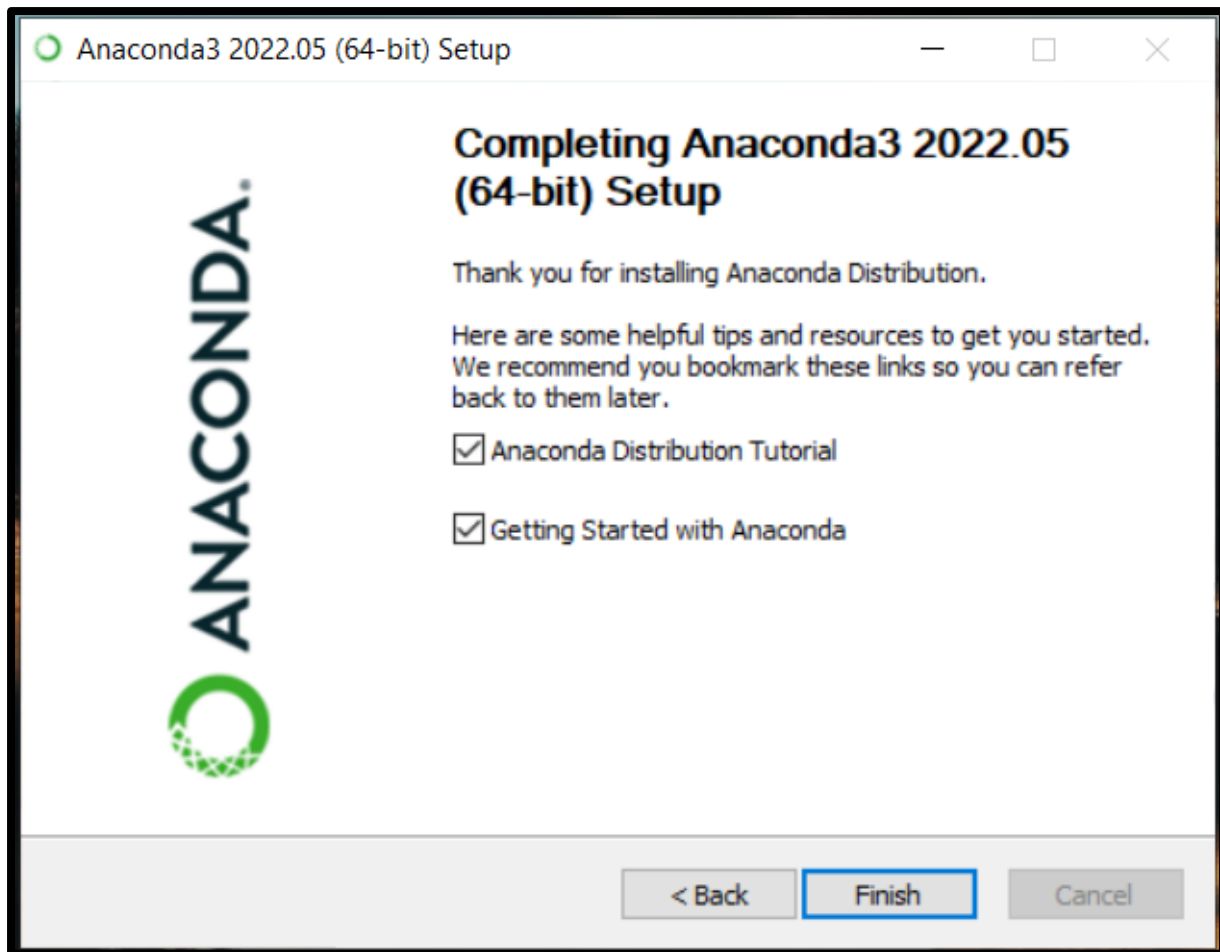


**Step 8: -** Installing

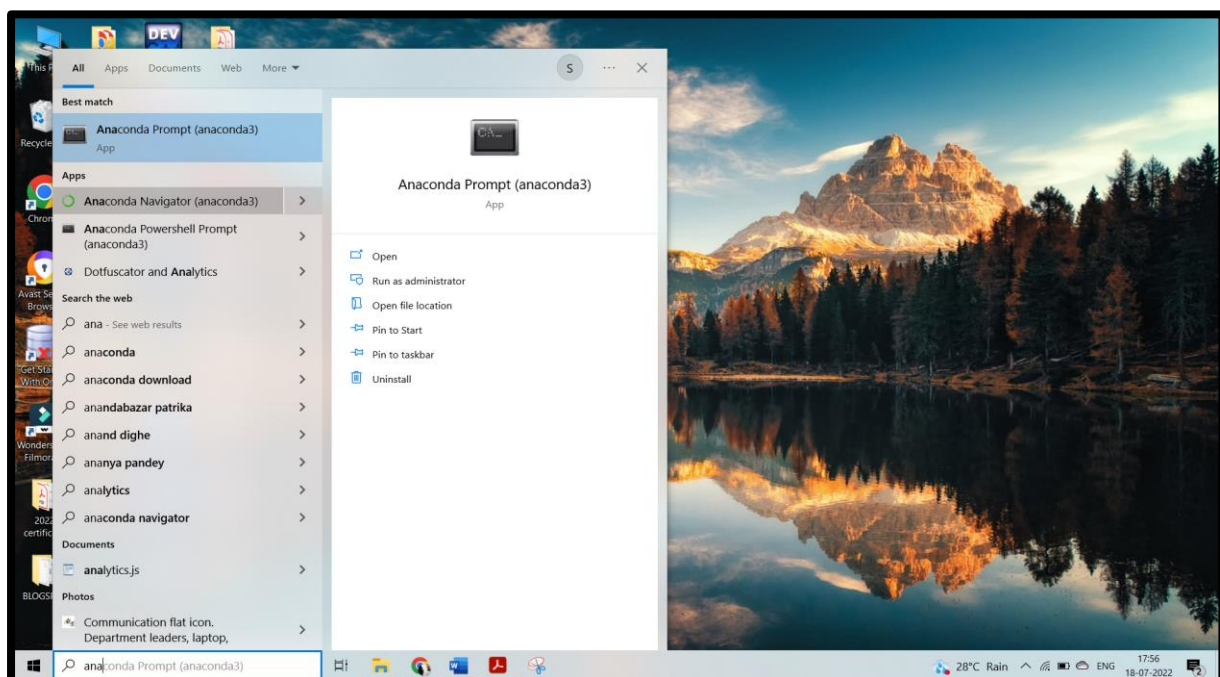


**Step 9:** - Click on next

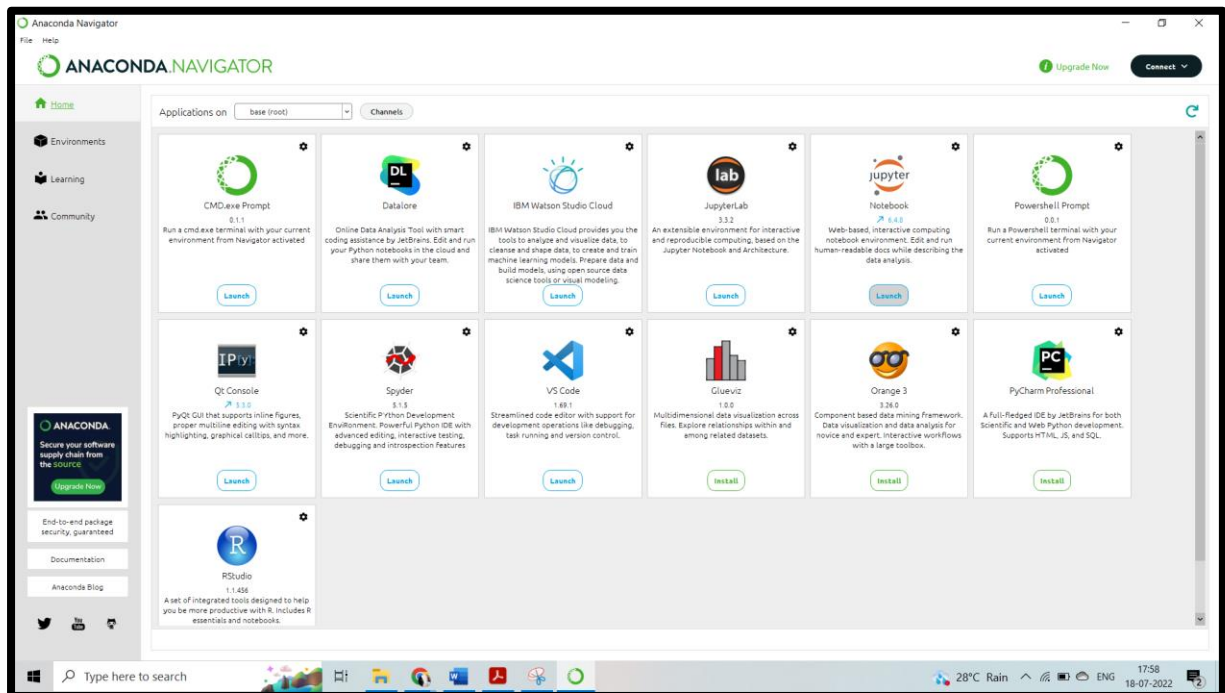
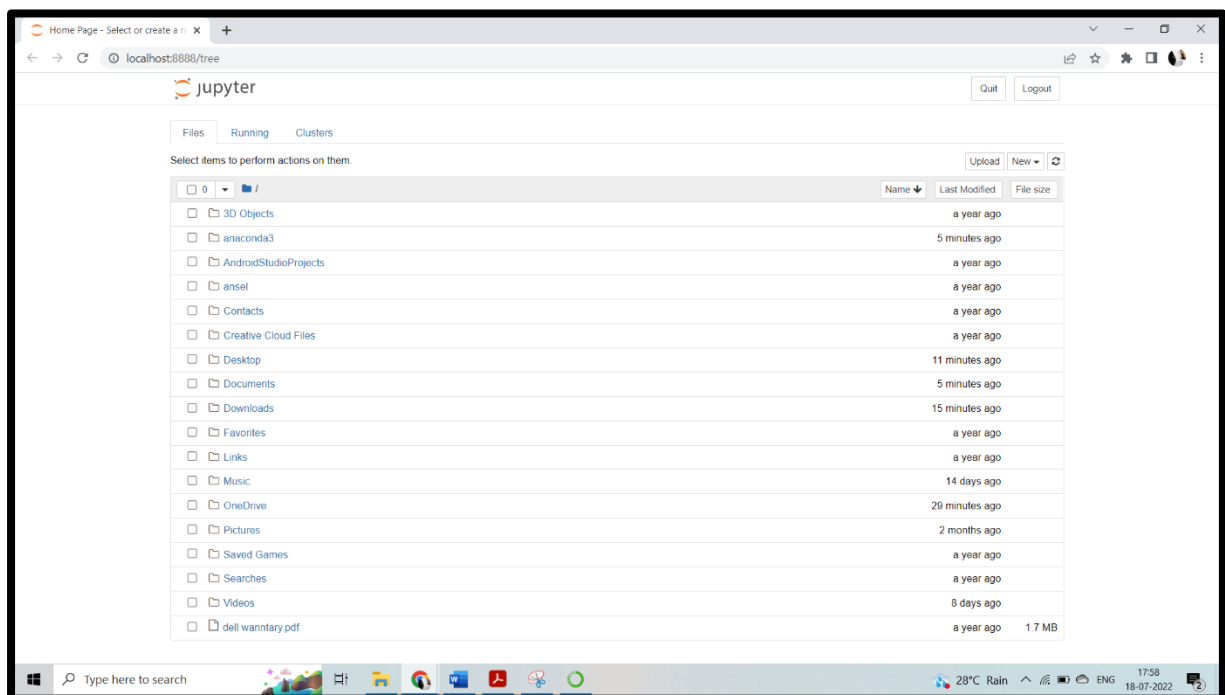


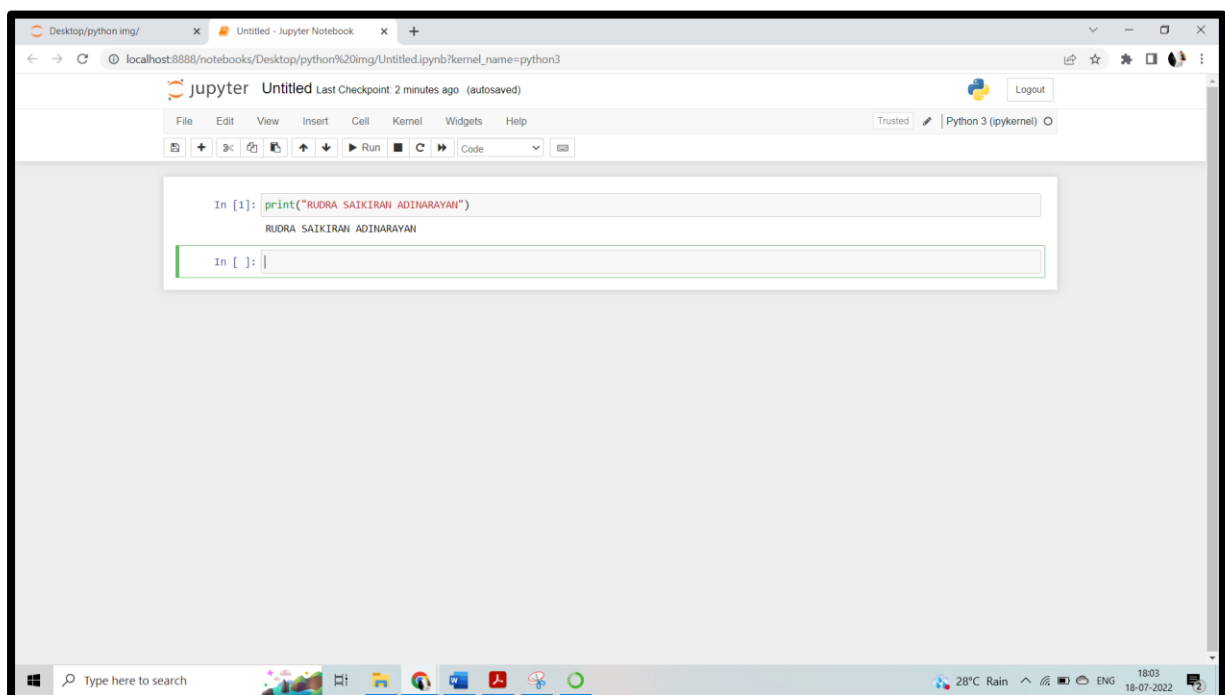
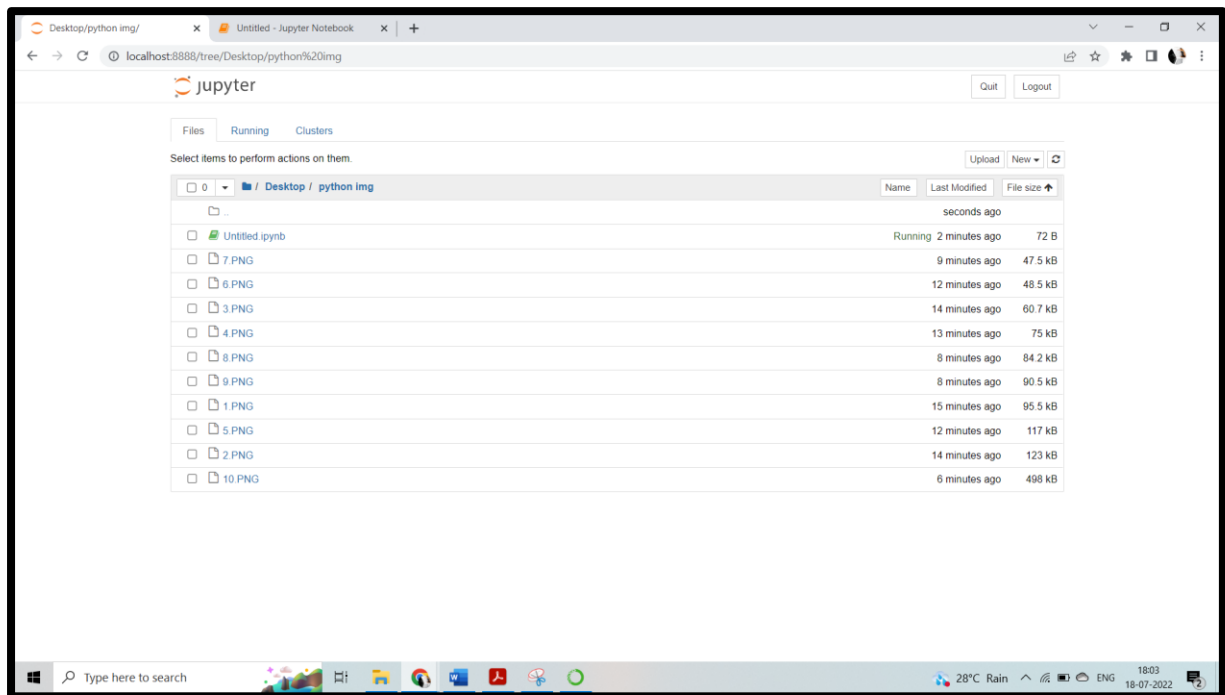


**Step 10: -** Click on finish and the search anaconda navigator and open



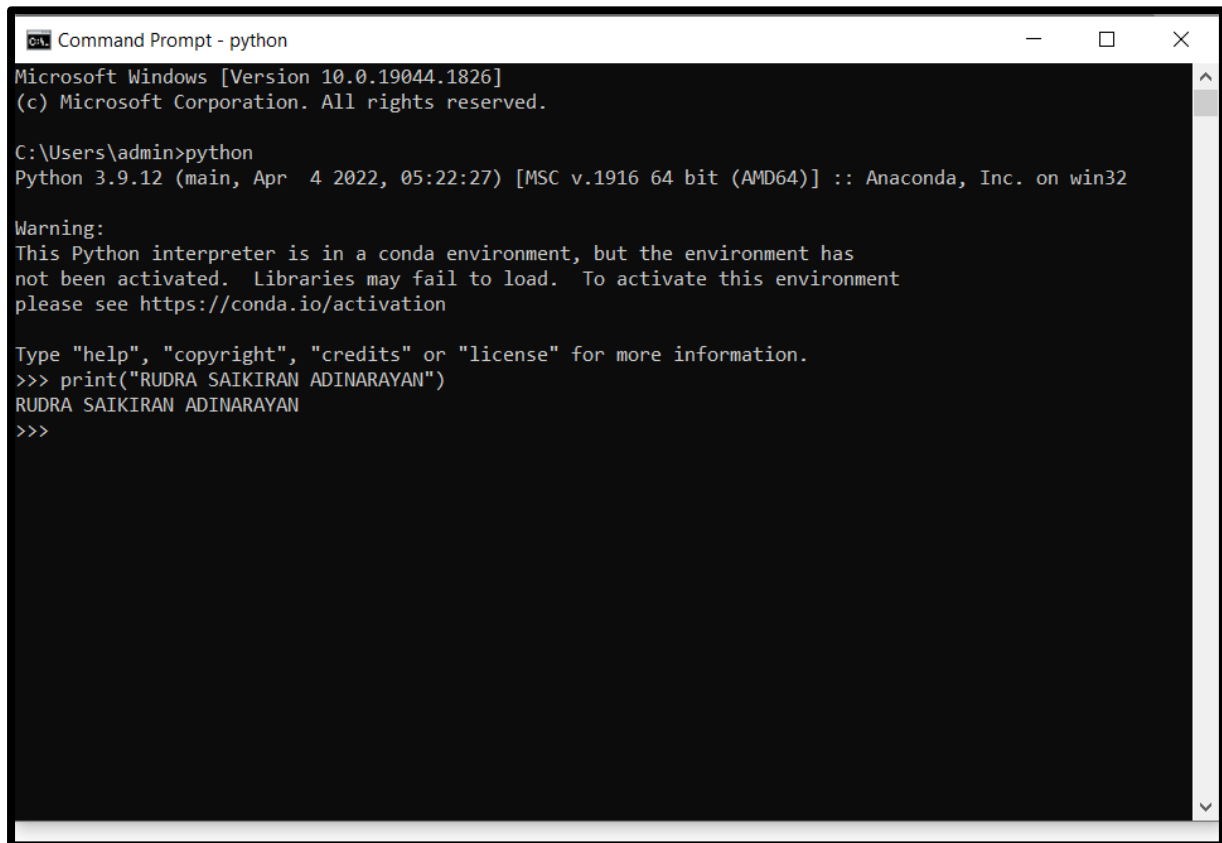


**Step 11: - Launch Jupiter Notebook****Step 12: - Create a folder on desktop**





## CMD



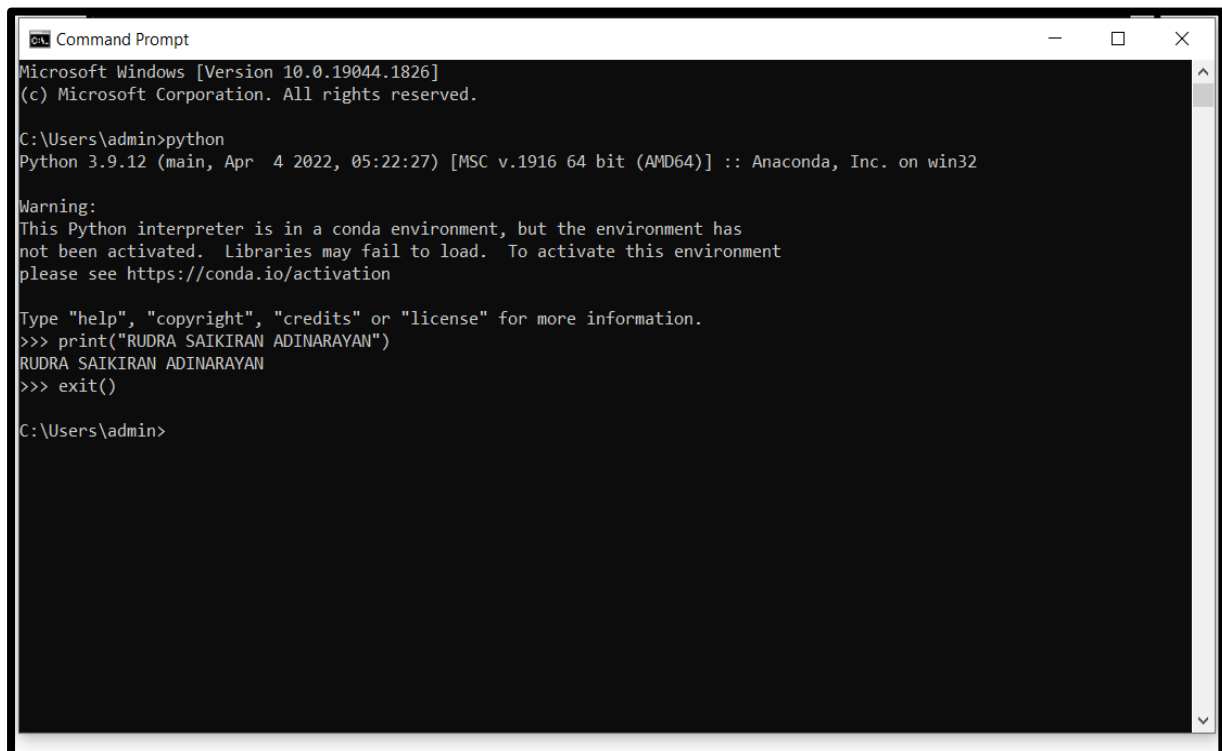
```
Command Prompt - python
Microsoft Windows [Version 10.0.19044.1826]
(c) Microsoft Corporation. All rights reserved.

C:\Users\admin>python
Python 3.9.12 (main, Apr  4 2022, 05:22:27) [MSC v.1916 64 bit (AMD64)] :: Anaconda, Inc. on win32

Warning:
This Python interpreter is in a conda environment, but the environment has
not been activated. Libraries may fail to load. To activate this environment
please see https://conda.io/activation

Type "help", "copyright", "credits" or "license" for more information.
>>> print("RUDRA SAIKIRAN ADINARAYAN")
RUDRA SAIKIRAN ADINARAYAN
>>>
```

## TO EXIT THE PYTHON IN CMD



```
Command Prompt
Microsoft Windows [Version 10.0.19044.1826]
(c) Microsoft Corporation. All rights reserved.

C:\Users\admin>python
Python 3.9.12 (main, Apr  4 2022, 05:22:27) [MSC v.1916 64 bit (AMD64)] :: Anaconda, Inc. on win32

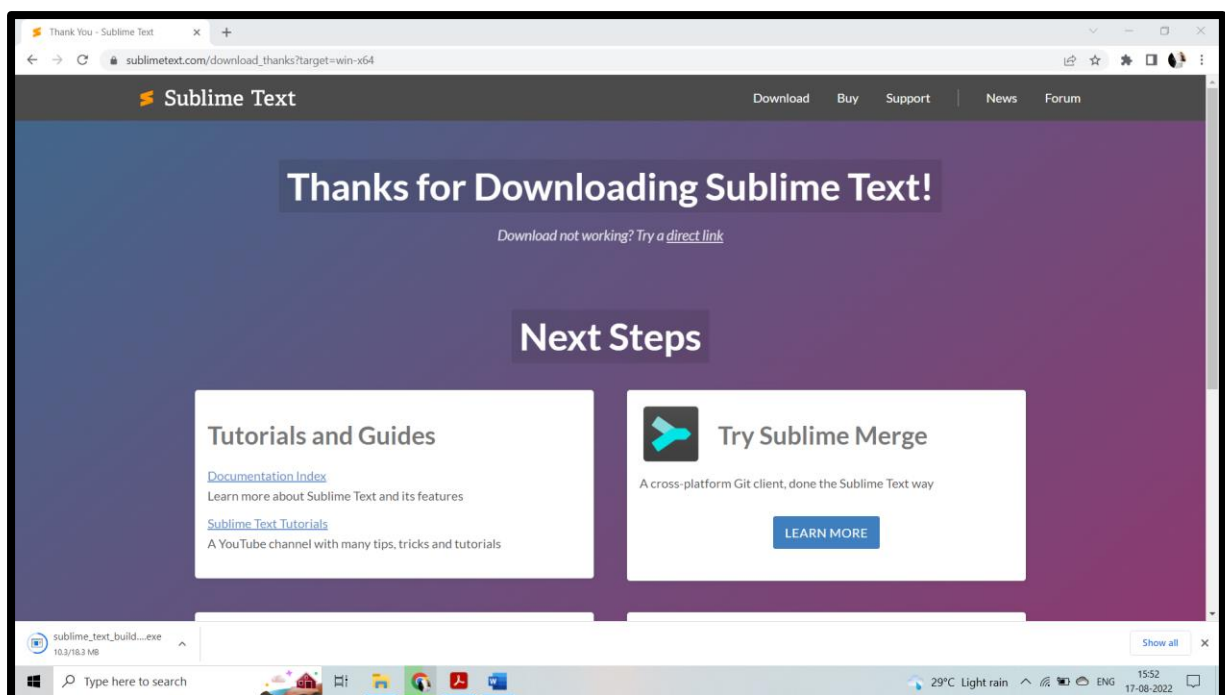
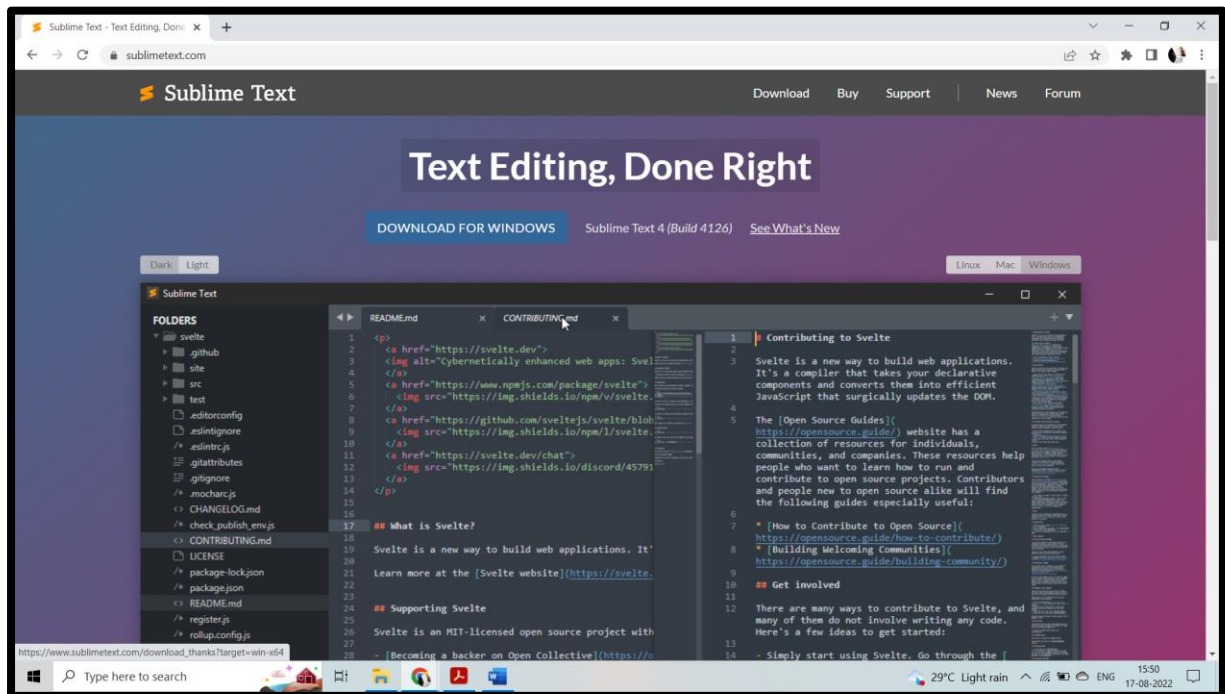
Warning:
This Python interpreter is in a conda environment, but the environment has
not been activated. Libraries may fail to load. To activate this environment
please see https://conda.io/activation

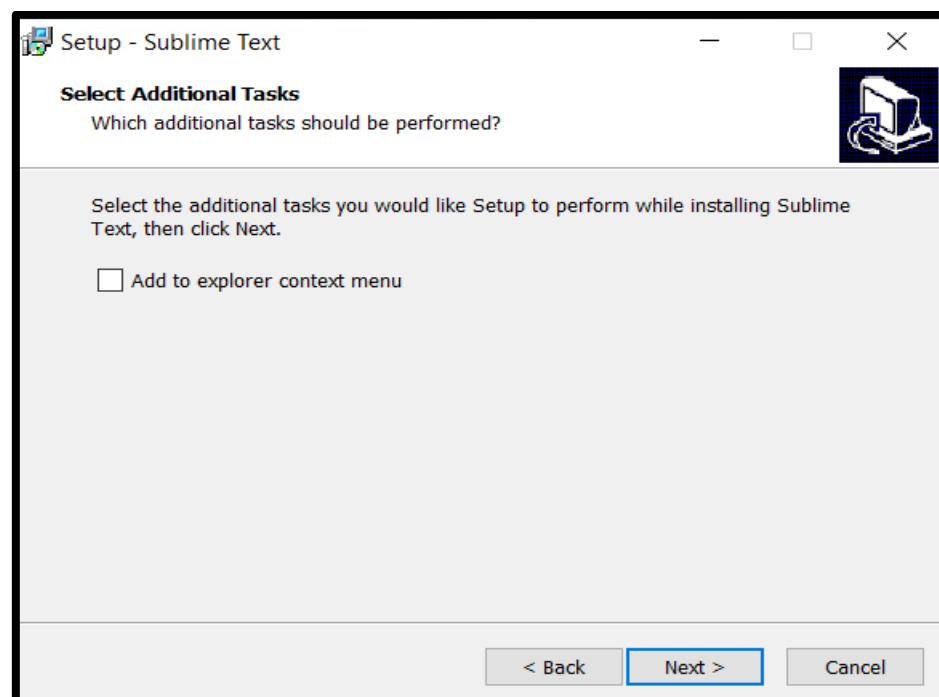
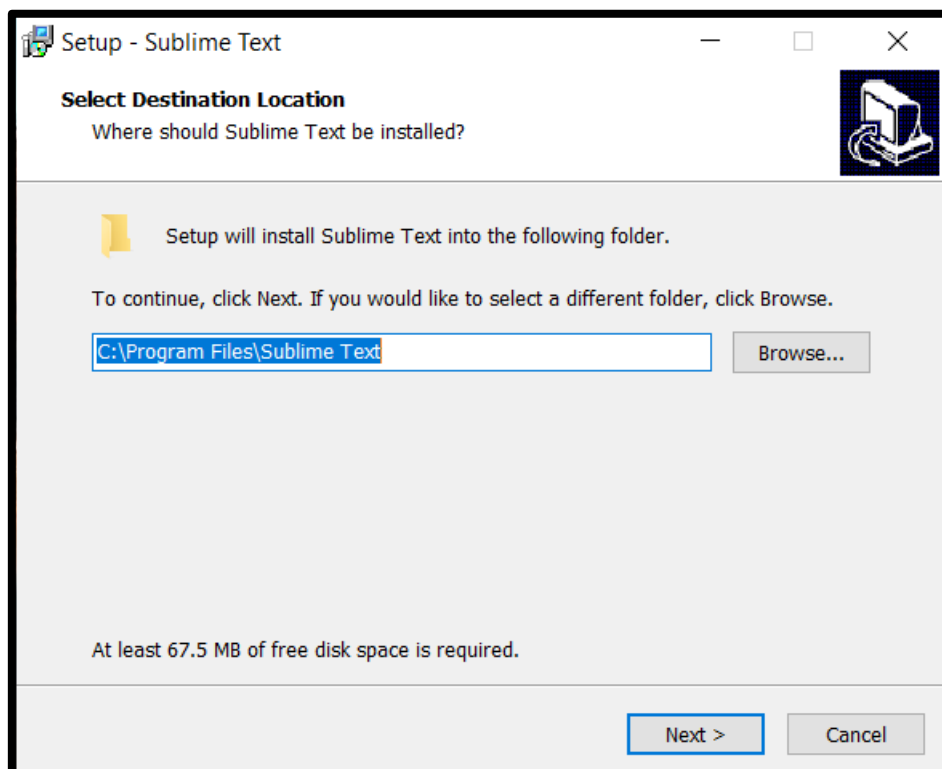
Type "help", "copyright", "credits" or "license" for more information.
>>> print("RUDRA SAIKIRAN ADINARAYAN")
RUDRA SAIKIRAN ADINARAYAN
>>> exit()

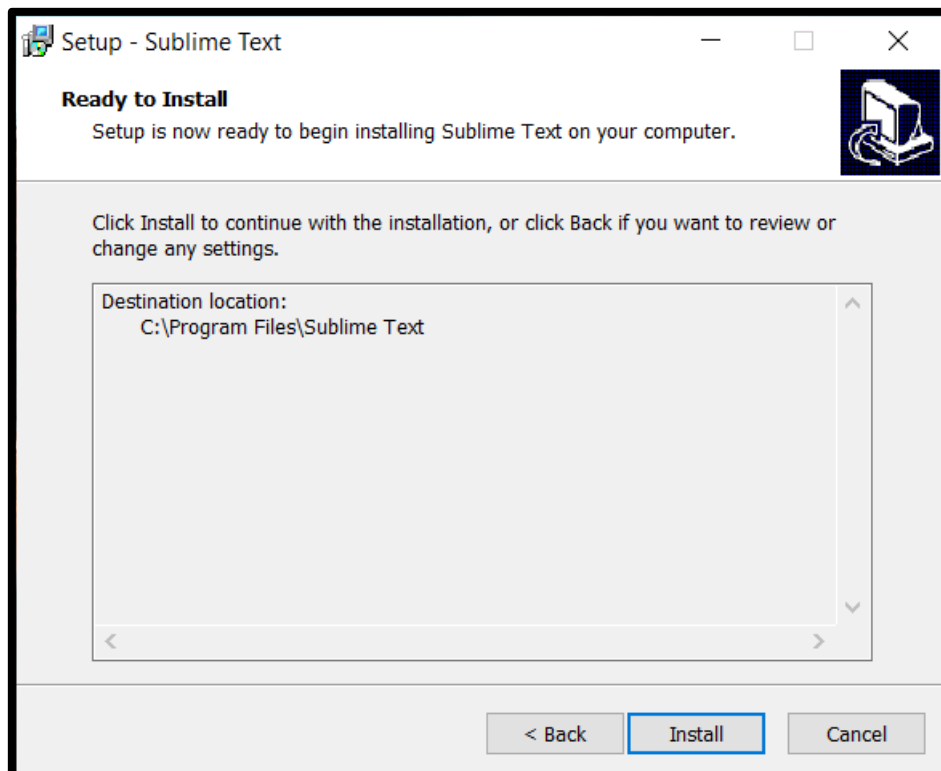
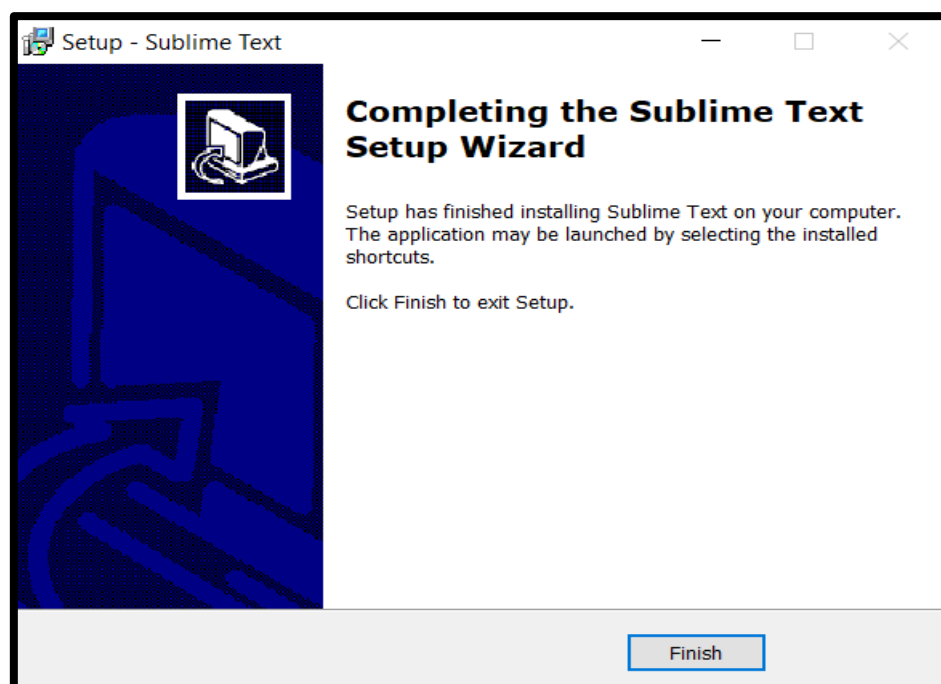
C:\Users\admin>
```

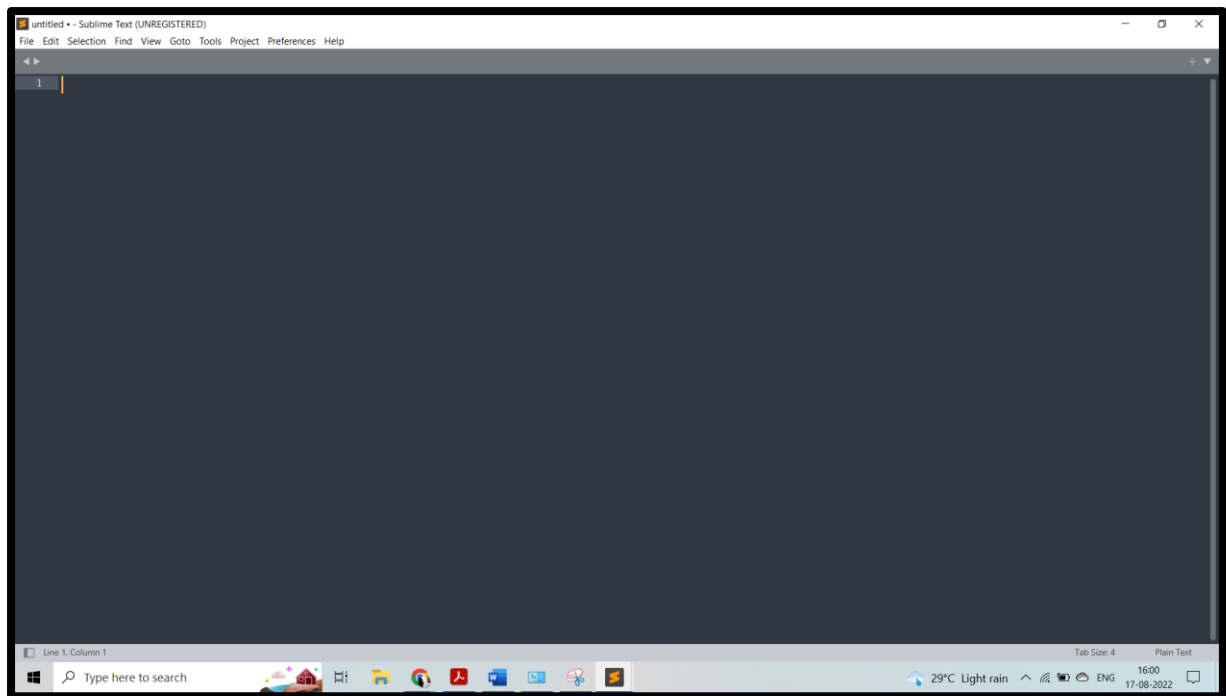
## Install Sublime Text

**Step 1:** - Click here to Download [SUBLIME TEXT](#) on Windows.



**Step 2: -** Click on next

**Step 3: - Click on Install****Step 4: - Click on Finish**



PRACTICAL:-2

**AIM:-Write a Python program to print Hello world!**

In [3]: `print("Hello World")`

Hello World



## PRACTICAL:-3

**AIM:-**Write a Python program to calculate the area of a square, triangle

**static program of area of square**

```
In [3]: side=9
        area=side*side
        print("area of square:-",area)
```

area of square:- 81

**Dynamic program of area of square**

```
In [4]: side=int(input("enter the side:-"))
        area=side*side
        print("area of square:-",area)
```

enter the side:-9  
area of square:- 81

**static program of area of triangle equation 1**

```
In [7]: b=9
        h=7
        area=b*h/2
        print("area of triangle:-",area)
```

area of triangle:- 31.5

**Dynamic program of area of triangle equation 1**

```
In [8]: b=int(input("enter the value of b:-"))
        h=int(input("enter the value of h:-"))
        area=b*h/2
        print("area of triangle:-",area)
```

enter the value of b:-9  
enter the value of h:-7  
area of triangle:- 31.5

**Static program of area of triangle equation 2**

```
In [20]: a=8
        b=7
        c=6
        s=(a+b+c)/2
        print("the parameter S is:",s)
        area=(s*(s-a)*(s-b)*(s-c))**0.5
        print("area of triangle=",area)
```

the parameter S is: 10.5  
area of triangle= 20.33316256758894

**Dynamic program of area of triangle equation 2**

```
In [19]: a=int(input("enter the value of a:-"))
b=int(input("enter the value of b:-"))
c=int(input("enter the value of c:-"))
s=(a+b+c)/2
print("the parameter S is:",s)
area=(s*(s-a)*(s-b)*(s-c))**0.5
print("area of triangle:-",area)
```

```
enter the value of a:-8
enter the value of b:-7
enter the value of c:-6
the parameter S is: 10.5
area of triangle:- 20.33316256758894
```

## PRACTICAL:-4

**AIM:-**Create a program that asks the user to enter their details and print those details.

```
In [4]: name=(input("Enter your name:-"))
print("your name is:-",name)
enroll=(input("Enter your Enrollment no:-"))
print("your Enrollment no is:-",enroll)
dept=(input("Enter your Department name:-"))
print("your Department name is:-",dept)
batch=(input("Enter your Batch :-"))
print("your Batch is:-",batch)
tag=(input("Enter your Tagline:-"))
print("your Tagline is:-",tag)
```

```
Enter your name:-RUDRA SAIKIRAN ADINARAYAN
your name is:- RUDRA SAIKIRAN ADINARAYAN
Enter your Enrollment no:-20270106138
your Enrollment no is:- 20270106138
Enter your Department name:-COMPUTER DEPARTMENT
your Department name is:- COMPUTER DEPARTMENT
Enter your Batch :-B2
your Batch is:- B2
Enter your Tagline:-WEBSITE DEVELOPER
your Tagline is:- WEBSITE DEVELOPER
```

## PRACTICAL:-5

**AIM:-Python program to find sum of array.**

**static program to find sum of array**

```
In [2]: A=[9,18,55,80]
        Ans=sum(A)
        print('sum of the array is:-',Ans)
```

sum of the array is:- 162

**Dynamic program to find sum of array**

```
In [3]: arr = []
        num = int(input("Enter the size of the array: "))
        print("Enter array elements: ")
        for n in range(num):
            numbers = int(input())
            arr.append(numbers)
        print("Sum:", sum(arr))
```

Enter the size of the array: 5

Enter array elements:

50

40

30

20

10

Sum: 150

## PRACTICAL:-6

**AIM:-**Python program to print the elements of an array in reverse order.

**static program to print the elements of an array in reverse order.**

```
In [4]: arr = [10, 20, 30, 40, 50];  
print("Original array: ");  
for i in range(0, len(arr)):  
    print(arr[i]),  
print("Array in reverse order: ");  
for i in range(len(arr)-1, -1, -1):  
    print(arr[i]),
```

Original array:

10  
20  
30  
40  
50

Array in reverse order:

50  
40  
30  
20  
10

## PRACTICAL:-7

**AIM :- Write Python Scripts for following:**

- (a) Perform concatenation on string.**
- (b) Perform indexing and slicing on string.**
- (c) Manipulate strings with following functions: lower, upper, len, split, strip, lstrip, rstrip.**

**(a) Perform concatenation on string.**

```
In [1]: str1="RUDRA"
str2=" SAIKIRAN"
str3=" ADINARAYAN"
print ("String 1:",str1)
print ("String 2:",str2)
print ("String 3:",str3)
str=str1+str2+str3
print("Concatenated two different strings:",str)

String 1: RUDRA
String 2:  SAIKIRAN
String 3:  ADINARAYAN
Concatenated two different strings: RUDRA SAIKIRAN ADINARAYAN
```

**(b) Perform indexing and slicing on string.**

```
In [2]: #declare the string
str = "RUDRA SAIKIRAN ADINARAYAN"
print(str[0])
print(str[6])
print(str[15])
str = "RUDRA SAIKIRAN ADINARAYAN"
print(str[-5])
print(str[-7])
print(str[-17])
```

R  
S  
A  
R  
N  
I

```
In [3]: # declaring the string
str = "RUDRA SAIKIRAN ADINARAYAN"

#slicing using indexing sequence
print(str[: 2])
print(str[2 :6 :13])
print(str[-1 : -12 : -2])
```

RU  
D  
NYRND

**(c) Manipulate strings with following functions: lower, upper, len, split, strip, lstrip, rstrip.**



```
In [14]: #lower string
string = "SAIKIRAN RUDRA"
S = string.lower()
print(S)
```

saikiran rudra

```
In [25]: #upper string
string = "Saikiran rudra"
S = string.upper()
print(S)
```

SAIKIRAN RUDRA

```
In [16]: #len
languages = ['Python', 'Java', 'JavaScript']
# compute the length of languages
length = len(languages)
print(length)
```

3

```
In [18]: # split
s="RUDRA SAIKIRAN ADINARAYAN"
s.split()
```

```
Out[18]: ['RUDRA', 'SAIKIRAN', 'ADINARAYAN']
```

```
In [23]: #strip
str = "    PROGRAMMING    "
x = str.strip()
print("web", x, "is my favorite subject")
```

web PROGRAMMING is my favorite subject

```
In [27]: #lstrip
txt = "    present    "
x = txt.lstrip()
print("today is my", x, "so work")
```

today is my present so work

```
In [29]: #rstrip
txt = "python ,,,,ssqqqw....."

x = txt.rstrip(",.qsw")

print(x)
```

python

## PRACTICAL:-8

**AIM:-Python Program to append element in the list.**

**Append element in list**

```
In [7]: sub=["java", "python","information security"]
sub.append("robotics");
print(sub)

['java', 'python', 'information security', 'robotics']
```

```
In [8]: a = ["front end", "back end", "data base"]
b = ["react js", "php", "my sql"]
a.append(b)
print(a)

['front end', 'back end', 'data base', ['react js', 'php', 'my sql']]
```

## PRACTICAL:-9

**AIM:-Python Program to add two list and compare two lists.**

**Add two list**

```
In [1]: list1 = [7, 3, 9, 8]
list2 = [7, 3, 9, 8]
# Sorting list of Integers in ascending
list1.sort()
list2.sort()
print(list1)
print(list2)
if list1 == list2:
    print("list1 and list 2 are equal")
else:
    print("list1 and list2 are not equal")

[3, 7, 8, 9]
[3, 7, 8, 9]
list1 and list 2 are equal
```

**compare two list**

```
In [2]: list1={33,44,55,21}
list2={55,33,21,44}
print("list1 before set =",list1)
print("list2 before set =",list2)
a = set(list1)
b = set(list2)
print("list1 after set =",list1)
print("list2 after set =",list2)
if a == b:
    print("the list1 and list2 are equal")
else:
    print("the list1 and list2 are not equal")

list1 before set = {33, 44, 21, 55}
list2 before set = {33, 44, 21, 55}
list1 after set = {33, 44, 21, 55}
list2 after set = {33, 44, 21, 55}
the list1 and list2 are equal
```

## PRACTICAL:-10

**AIM:-Python Program to remove an element from a list.**

```
In [1]: ist=["sai","suraj","sagar","niraj","nevil","raj"]
        print("before update the list",ist)

        ist=["sai","suraj","sagar","niraj","nevil","raj"]
        del ist[3]
        print("after update the list",ist)

before update the list ['sai', 'suraj', 'sagar', 'niraj', 'nevil', 'raj']
after update the list ['sai', 'suraj', 'sagar', 'nevil', 'raj']
```

```
In [17]: thislist = ["apple", "banana", "cherry"]
         thislist.remove("banana")
         print(thislist)

['apple', 'cherry']
```

## PRACTICAL:-11

**AIM:-**Write a Python program to calculate the average of numbers in a given list.

```
In [1]: num=int(input("Enter the range of marks to be entered:-"))
a=[]
for i in range(0,num):
    elem=int(input("Enter the marks out of 100:- "))
    a.append(elem)
avg=sum(a)/num
print("Average marks is:- ",avg)
```

```
Enter the range of marks to be entered:-5
Enter the marks out of 100:- 60
Enter the marks out of 100:- 70
Enter the marks out of 100:- 90
Enter the marks out of 100:- 80
Enter the marks out of 100:- 50
Average marks is:- 70.0
```

## PRACTICAL:-12

**AIM:-**Write a Python to find maximum and minimum out of tuple without using built in function.

```
In [2]: t = tuple()
n=int(input("Total number of values in tuple:- "))
for i in range(n):
    a=input("Enter element:- ")
    t=t+(a,)
print(t)
minimum = t[0]
maximum = t[0]
for i in t:
    if i >= maximum:
        maximum=i
    if i <= minimum:
        minimum=i
print("minimum:",minimum)
print("maximum:",maximum)
```

```
Total number of values in tuple:- 5
Enter element:- 33
Enter element:- 26
Enter element:- 34
Enter element:- 92
Enter element:- 80
('33', '26', '34', '92', '80')
minimum: 26
maximum: 92
```



## PRACTICAL:-13

**AIM:-Write a Python Program to do Sum of tuple elements.**

```
In [2]: tuple=(55,99,88,11,12)
        tup=sum(tuple)
        print("The sum of tuple is :- ",tup)
```

The sum of tuple is :- 265

## PRACTICAL:-14

**AIM:-**Write a Python script to sort (ascending and descending) a dictionary by value.

```
In [2]: a = {1:2,2:1,4:3,3:4,6:5,5:6}
print("dictionary:",a)
ass= sorted(a.items())
print("assending by items",ass)
ass= sorted(a.items(), reverse= True)
print("desending by items",ass)
ass= sorted(a.keys())
print("assending by keys",ass)
ass= sorted(a.keys(), reverse= True)
print("desending by keys",ass)
ass= sorted(a.values())
print("assending by value",ass)
des=sorted (a.values(), reverse= True)
print("desending by value",des)
```

```
dictionary: {1: 2, 2: 1, 4: 3, 3: 4, 6: 5, 5: 6}
assending by items [(1, 2), (2, 1), (3, 4), (4, 3), (5, 6), (6, 5)]
desending by items [(6, 5), (5, 6), (4, 3), (3, 4), (2, 1), (1, 2)]
assending by keys [1, 2, 3, 4, 5, 6]
desending by keys [6, 5, 4, 3, 2, 1]
assending by value [1, 2, 3, 4, 5, 6]
desending by value [6, 5, 4, 3, 2, 1]
```

## PRACTICAL:-15

**AIM:-**Write a Python program to add, search and delete entries of a phone with its model number in a dictionary.

```
In [1]: dic1={'M1':101, 'M2':102, 'M3':103}
print("Press 1 for add model number and phone number:")
print("Press 2 for delete using model number")
print("Press 3 for search model number")
ch=int(input("Enter your choice:"))

if(ch==1):
    k=input("Enter model number:")
    v=input("Enter phone number:")
    dic1[k]=v

elif(ch==2):
    k=input("Enter model number:")
    del dic1[k]

elif(ch==3):
    k=input("Enter model number:")
    model=dic1.get(k,-1)
    if(model == -1):
        print("Key is not present")
    else:
        print("Key{} & value{}".format(k,model))
print(dic1)
```

```
Press 1 for add model number and phone number:
Press 2 for delete using model number
Press 3 for search model number
Enter your choice:1
Enter model number:M4
Enter phone number:104
{'M1': 101, 'M2': 102, 'M3': 103, 'M4': '104'}
```

## PRACTICAL:-16

**AIM:-Write a Python Program to check whether a passed letter is a vowel or not.**

```
In [1]: ch = input("Enter a character :-")

if(ch=='A' or ch=='a' or ch=='E' or ch=='e' or ch=='I'
    or ch=='i' or ch=='O' or ch=='o' or ch=='U' or ch=='u'):
    print(ch, "is a vowel")
else:
    print(ch, "is a constant")
```

Enter a character :-8

8 is a constant

## PRACTICAL:-17

**AIM:-**Write a python program to find the factorial of a given number.

```
In [1]: num = int(input("Enter a number :-"))

factorial = 1

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)
```

Enter a number :-9

The factorial of 9 is 362880

## PRACTICAL:-18

**AIM:-**Write a Python program to find the largest among three numbers.

```
In [2]: a=int(input("Enter a value:-"))
        b=int(input("Enter a value:-"))
        c=int(input("Enter a value:-"))
        if(a>b and a>c):
            print("a max")
        elif(b>a and b>c):
            print("b max")
        else:
            print("c max")
```

Enter a value:-8

Enter a value:-9

Enter a value:-4

b max



## PRACTICAL:-19

**AIM:-Find sum of series using while loop.**

```
In [4]: sum = 0
num = int(input("Enter a number: "))
if num < 0:
    print("Please enter a positive number")
else:
    sum = 0
    while num > 0:
        sum=sum+num
        num=num-1
    print("The sum is", sum)
```

```
Enter a number: 54
The sum is 1485
```

## PRACTICAL:-20

**AIM:-**Write a program that prints the integers from 1 to 100. But for multiples of three print "Fizz" instead of the number, and for the multiples of five print "Buzz". For numbers which are multiples of both three and five print "FizzBuzz".

```
In [2]: N=int(input("Enter Number:"))
for i in range(1,N+1):
    if i%15==0:
        print("FizzBuzz")
    elif i%3==0:
        print("Fizz")
    elif i%5==0:print("Buzz")
    else:print(i)
```

Enter Number:100

1  
2  
Fizz  
4  
Buzz  
Fizz  
7  
8  
Fizz  
Buzz  
11  
Fizz  
13  
14  
FizzBuzz  
16  
17  
Fizz  
19  
Buzz  
Fizz  
22  
23  
Fizz  
Buzz  
26  
Fizz  
28  
29  
FizzBuzz  
31  
32  
Fizz  
34  
Buzz  
Fizz  
37  
38  
Fizz  
Buzz  
41

Fizz  
43  
44  
FizzBuzz  
46  
47  
Fizz  
49  
Buzz  
Fizz  
52  
53  
Fizz  
Buzz  
56  
Fizz  
58  
59  
FizzBuzz  
61  
62  
Fizz  
64  
Buzz  
Fizz  
67  
68  
Fizz  
Buzz  
71  
Fizz  
73  
74  
FizzBuzz  
76  
77  
Fizz  
79  
Buzz  
Fizz  
82  
83  
Fizz  
Buzz  
86  
Fizz  
88  
89  
FizzBuzz  
91  
92  
Fizz  
94  
Buzz  
Fizz  
97  
98  
Fizz  
Buzz

## PRACTICAL:-21

**AIM:-**Write a function called greet() that takes one string parameter called name and displays the text "Hello !", where is replaced with the value of the name parameter.

```
In [1]: def greet():  
        # Enclosing function  
        name = input("Enter a name: ")  
  
        def hello():  
            print('Hello ' + name)  
  
        hello()  
  
greet()
```

```
Enter a name: saikiran  
Hello saikiran
```

## PRACTICAL:-22

**AIM:-**Write a Python program to swap two numbers using function.

```
In [1]: def swap():
        x= int(input('Enter a:'))
        y= int(input('Enter b:'))
        print('Before swapping a :', x)
        print('Before swapping b :',y)
        #logic to swap without using third variable
        x,y=y,x
        print('After swapping a becomes :',x)
        print('After swapping b becomes :',y)

        swap()
```

```
Enter a:79
Enter b:53
Before swapping a : 79
Before swapping b : 53
After swapping a becomes : 53
After swapping b becomes : 79
```

## PRACTICAL:-23

**AIM:-Demonstrate the use of arguments in python functions.**

```
In [2]: # a, b, c are arguments of the function
def my_sum(a, b, c):
    s = a + b + c
    return s

print('Total is:', my_sum(90, 50, 70))
```

Total is: 210

```
In [4]: def my_sum(a, b, c, d=40):
        s = a + b + c + d
        return s

print('Total is:', my_sum(97, 85, c=85))
```

Total is: 307

```
In [5]: def percentage(sub1, sub2, sub3):
        avg = (sub1 + sub2 + sub3) / 3
        print('Average', avg)

percentage(96, 76, 74)
```

Average 82.0

```
In [6]: def percentage(*subjects):
        sum = 0
        for i in subjects:
            # get total
            sum = sum + i
        # calculate average
        avg = sum / len(subjects)
        print('Average =', avg)

percentage(56, 61, 66, 77, 88)
```

Average = 69.6

## PRACTICAL:-24

**AIM:-**Write a function to check the input value is Armstrong and write the function for Palindrome.

```
In [1]: def Armstrong(n,o):
        sum = 0
        temp = n
        while temp > 0:
            digit = temp % 10
            sum += digit ** o
            temp = temp//10
        if n == sum:
            print(n,"is an Armstrong number")
        else:
            print(n,"is not an Armstrong number")

num = int(input("Enter Number: "))
order = len(str(num))
Armstrong(num,order)
```

Enter Number: 59  
59 is not an Armstrong number

```
In [2]: # function which return reverse of a string

def isPalindrome(s):
    return s == s[::-1]

# Driver code
s = input("Enter string: ")
ans = isPalindrome(s)

if ans:
    print("Yes, it's Palindrome")
else:
    print("No, it's not Palindrome")
```

Enter string: 777  
Yes, it's Palindrome

## PRACTICAL:-25

**AIM:-**Design a class that store the information of student and display the same.

```
In [6]: class Student:
        def getStudentDetails(self):
            self.rollno=input("Enter Roll Number : ")
            self.name = input("Enter Name : ")
            self.infs =int(input("Enter is Marks : "))
            self.python = int(input("Enter python Marks : "))
            self.java = int(input("Enter java Marks : "))

        def printResult(self):
            self.percentage = (int)( (self.infs + self.python + self.java) / 300 * 100 );
            print('Roll No:',self.rollno,
                  'Name:',self.name,
                  'Percentage:',self.percentage)

S1=Student()
S1.getStudentDetails()

print("Result : ")
S1.printResult()

S1.java += 9

print("result after adding grace marks...")
S1.printResult()
```

```
Enter Roll Number : 138
Enter Name : RUDRA SAIKIRAN
Enter is Marks : 80
Enter python Marks : 90
Enter java Marks : 60
Result :
Roll No: 138 Name: RUDRA SAIKIRAN Percentage: 76
result after adding grace marks...
Roll No: 138 Name: RUDRA SAIKIRAN Percentage: 79
```



## PRACTICAL:-26

**AIM:-Implement the concept of inheritance using python.**

```
In [1]: '''Create a Parent Class named Person, with firstname and lastname properties,
and a printname method:'''
class Person:
    def __init__(self, fname, lname):
        self.firstname = fname
        self.lastname = lname

    def printname(self):
        print(self.firstname, self.lastname)

"""Use the Person class to create an object, and then execute the printname
method:"""

x = Person("RUDRA", "SAIKIRAN")
x.printname()

"""Create a child class named Student, which will inherit the properties and
methods from the Person class:"""

class Student(Person):
    pass

"""Use the pass keyword when you do not want to add any other properties
or methods to the class.
Now the Student class has the same properties and methods as the Person class.
Use the Student class to create an object and then execute the printname method:"""

x = Student("RUDRA", "JAYESH")
x.printname()
```

RUDRA SAIKIRAN

RUDRA JAYESH