BHADERWAH CAMPUS
UNIVERSITY OF JAMMU

PYTHON PROGRAMMING

Practical file

DEPARTMENT OF COMPUTER SCIENCE

& IT BHADERWAH CAMPUS

BCA

Bachelor of Computer Application

PYTHON PROGRAMMING

SUBMITTED BY:

DIKSHA RANI

SUBMITED TO:

Dr. Ashok Sharma

DEPARTMENT OF COMPUTER SCIENCE
& IT BHADERWAH CAMPUS

Bachelor of Computer Applications

CERTIFICATE

This is to certify that DIKSHA RANIstudent of BCA 7th SEMISTERbearing university ROLL NO. 713040005 has completed the required number of practical of Python Programming under the guidance of course CO-ordinate Ms. Jahanvi Kotwal from the Department of Computer Science and IT. Bhaderwah Campus University of Jammu.

Signature of Incharge:

ACKNOWLEDGEMENT

I WOULD LIKE TO ECPRESS MY GRATUDE TO ALL THOSE WHO GOVE ME THE POSSIBILITY TO COMPLETE THIS PRACTICAL FILE. I WANT TO THANK DEPT.OF COMPUTER SCIENCE & IT FOR PROVIDING ME ALL THE TOOLS AND RESOURCES FOR THE COMPLETION OF MY PRACTICAL FILE.

I HAVE FURTHER MORE TO THANK OUR CONCERNED TEACHER MS. JAHANVI KOTWAL ENCOURAGED ME TO MOVE AHEAD AND COMPLETE MY WORK IN TIME. I WOULD ALSO LIKE TO THANK OUR LAB INCHARGE ,WHOSE SIMULATING SUGGESTIONS AND ENCOURAGEMENT HELPED ME ALL THE TIME DURING MY WORK.

THANK YOU.

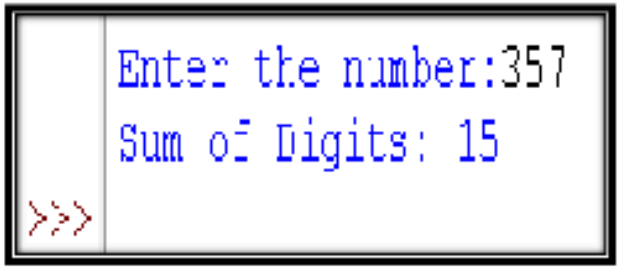
DIKSHA RANI

INDEX

1.WAP TO FIND SUM OF DIGITS OF NUMBERS

```
p=int(input("Enter the number:"))
sum=0
for digit in str(p):
    sum=sum+int(digit)
print("Sum of Digits:",sum)
```

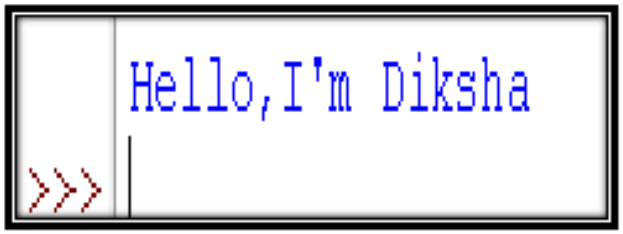
OUTPUT:-



2.WAP TO DEMONSTRATE STRING CONCATENATION

```
var1="Hello,"
var2="I'm Diksha"
var3=var1+var2
print(var3)
```

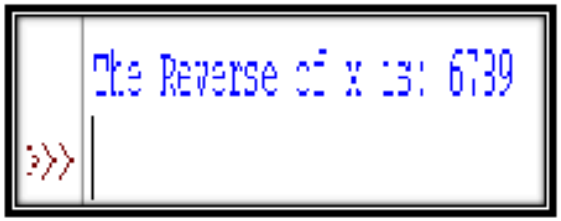
OUTPUT:-



3.WAP TO FIND REVERSE OF A NUMBER

```
x=9876
rev=0
while(x>0):
    a=x%10
    rev=rev*10+a
    x=x//10
print("The Reverse of x is: "rev)
```

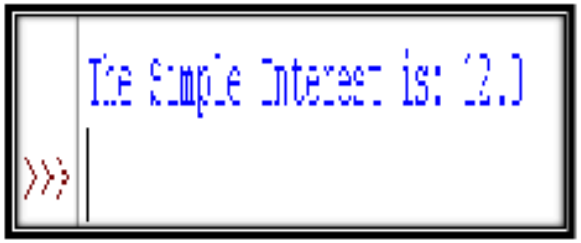
OUTPUT:-



4.WAP TO CALCULATE SIMPLE INTEREST

```
P=300
R=1
T=4
Simple_interest=(P*R*T)/100
print("The Simple Interest is:",Simple_interest)
```

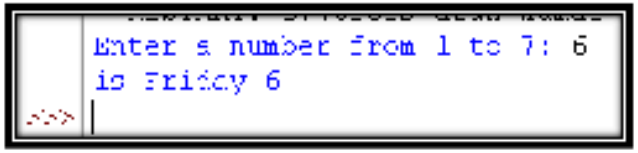
OUTPUT:-



5.WAP TO PROMPT A USER TO ENTER A DAY OF THE WEEK

```
day=int(input("Enter a number from 1 to 7: "))
if day==1:
   print("is Sunday",day)
elif day==2:
   print("is Monday",day)
elif day==3:
   print("is Tuesday",day)
elif day==4:
   print("is Wednesday",day)
elif day==5:
   print("is Thursday",day)
elif day==6:
   print("is Friday",day)
elif day==7:
   print("is Saturday",day)
else:
   print("Wrong input!")
```

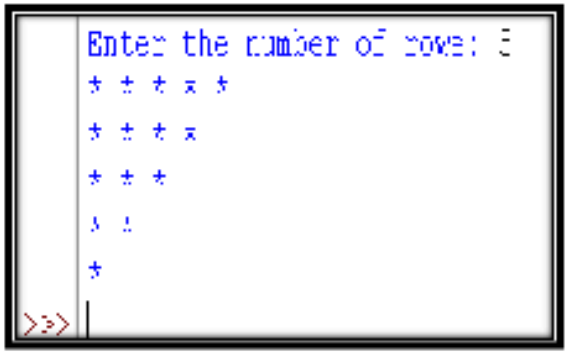
OUTPUT:-



6.WAP TO DISPLAY INVERTED HALF PYRAMID USING "*"

```
rows = int(input("Enter the number of rows: "))
for i in range(rows, 0, -1):
    for j in range(i):
        print("* ", end="")
    print()
```

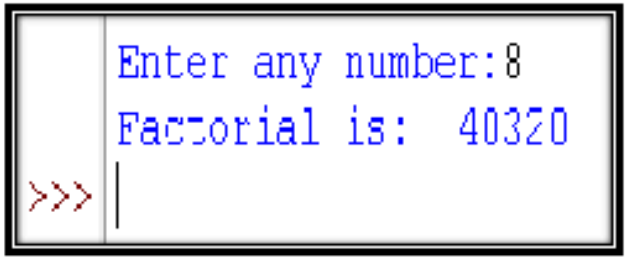
OUTPUT:-



7.WAP USING WHILE LOOP TO PRINT FACTORIAL OF A NUMBER

```
n=int(input("Enter any number:"))
f=1
while n>=1:
    f*=n
    n-=1
print("Factorial is: ",f)
```

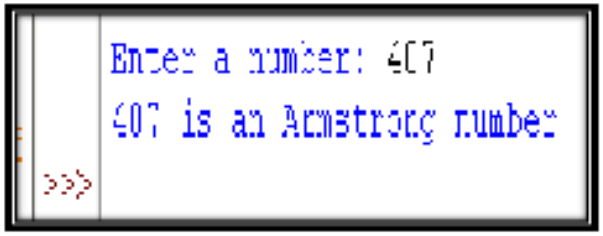
OUTPUT:-



6.WAP TO CHECK WHETHER THE NUMBER ENTERED IS ARMSTRONG OR NOT

```
num = int(input("Enter a number: "))
sum = 0
temp = num
while temp > 0:
   digit = temp % 10
   sum += digit ** 3
   temp //= 10

if num == sum:
   print(num,"is an Armstrong number")
else:
   print(num,"is not an Armstrong number")
```

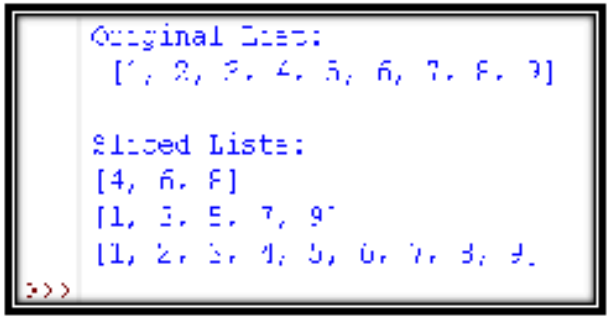
OUTPUT:-



9.WAP TO DEMONSTRATE THE USE OF LIST SLICING

```
List = [1, 2, 3, 4, 5, 6, 7, 8, 9]
print("Original List:\n", List)


print("\nSliced Lists: ")


print(List[3:9:2])


print(List[::2])


print(List[::])
```

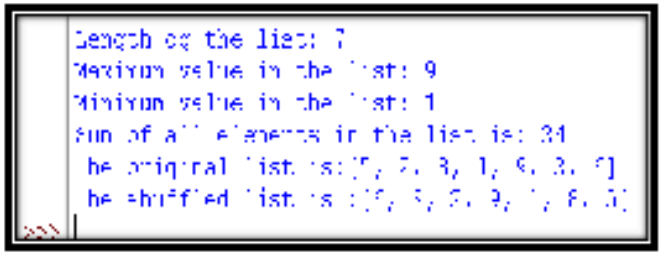
OUTPUT:-



10.WAP TO DEMONSTRATE THE USE OF INBUILT FUNCTIONS

```
num=[5,2,8,1,9,3,6]
length=len(num)
print("Length og the list:",length)
maximum=max(num)
print("Maximun value in the list:",maximum)
minimum=min(num)
print("Minimum value in the list:",minimum)
total=sum(num)
print("Sum of all elements in the list is:",total)
import random
print("The original list is:" + str(num))
random.shuffle(num)
print("The shuffled list is :" + str(num))
```

OUTPUT:-



11.WAP TO PRINT FIBONACCI SERIES UPTO 8(FIRST_NUM=0)

```
n = 8
a = 0
b = 1
sum=0
count=1
print("Fibonacci Series:",end="")
while(count<=n):
    print(sum,end=" ")
    count+=1
    a=b
    b=sum
    sum=a+b
```

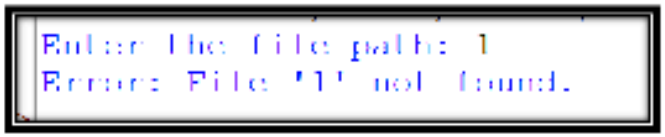
OUTPUT:-

12.WAP TO COUNT WORDS/LINES IN A FILE.

```
def count_words_lines(file_path):
    """
    Counts the number of lines and words in the given file.
    :param file_path: Path to the file
    :return: tuple (line_count, word_count)
    """
    try:
        with open(file_path, 'r', encoding='utf-8') as file:
            line_count = 0
            word_count = 0

            for line in file:
                line_count += 1

             words = line. Split()
                word_count += len(words)

        return line_count, word_count
    except FileNotFoundError:
        print(f"Error: File '{file_path}' not found.")
        return None, None
```

```
    except PermissionError:
        print(f"Error: Permission denied to read '{file_path}'.")
        return None, None
    except Exception as e:
        print(f"An unexpected error occurred: {e}")
        return None, None
if __name__ == "__main__":

    file_path = input("Enter the file path: ").strip()

    lines, words = count_words_lines(file_path)

    if lines is not None:
        print(f"Total Lines: {lines}")
        print(f"Total Words: {words}")
```

output:-

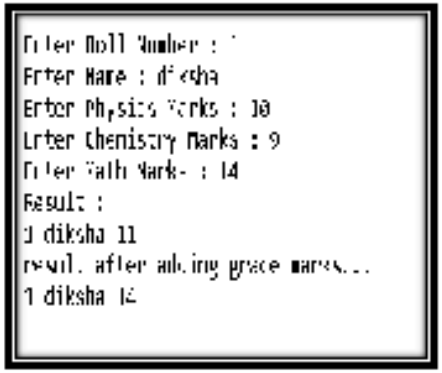


13. WAP TO CREATE A CLASS STUDENT AND PRINT THE DETAILS OF A STUDENT.

```
class Student:
    def getStudentDetails(self):
        self.rollno=input("Enter Roll Number : ")
        self.name = input("Enter Name : ")
        self.physics =int(input("Enter Physics Marks : "))
        self.chemistry = int(input("Enter Chemistry Marks : "))
        self.maths = int(input("Enter Math Marks : "))

    def printResult(self):
        self.percentage = (int)( (self.physics + self.chemistry + self.maths) / 300 * 100 );
        print(self.rollno,self.name, self.percentage)

S1=Student()
S1.getStudentDetails()

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

```
S1.physics += 9


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

OUTPUT:-

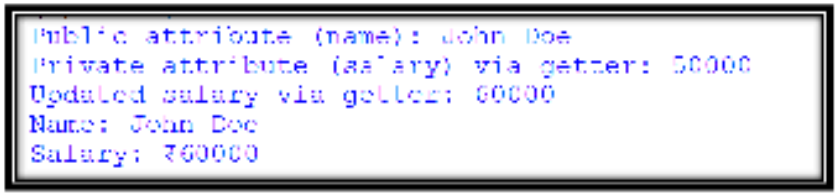


14. WAP TO SHOW HOW ENCAPSULATION WORKS USING PRIVATE VARIABLES.

```
class Employee:
    def __Init(self, name, salary):
        self.name = name
Self_Salary = None
        self.set_salary(salary)
    def get_salary(self):
        returnSelf_ Salary
def set_salary(self, salary):
        if not isinstance(salary, (int, float)):
            raise ValueError("Salary must be a number.")
        if salary < 0:
            raise ValueError("Salary cannot be negative.")
Self.salary = salary
    def display_info(self):
        print(f"Name: {self.name}")
        print(f"Salary: ₹{self_salary}")
try:
    emp = Employee("John Doe", 50000)
    print("Public attribute (name):", emp.name)
```

```
    print("Private attribute (salary) via getter:", emp.
Get_salary())



emp. Set_salary(60000)
    print("Updated salary via getter:", emp.Get_salary())
    emp. Display_info()
except Exception as e:
    print("Error:", e)
```

Output:-



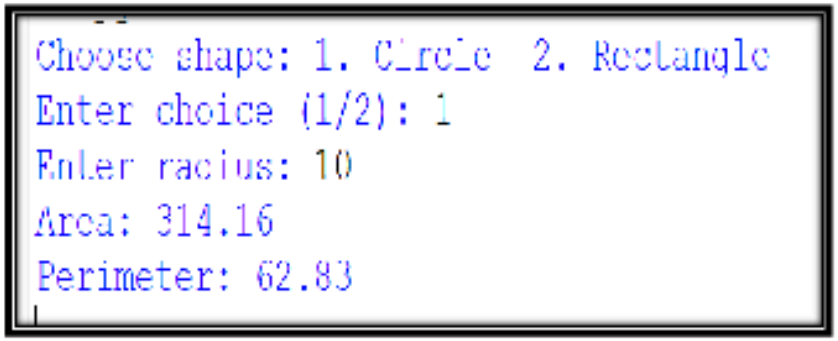
15.WAP TO IMPLEMENT ABSTRACTION USING ABC(ABSTRACT BASE CASE).

```
from ABC import ABC, abstractmethod
class Shape(ABC):
    """
    Abstract base class representing a geometric shape.
    All shapes must implement the area() and perimeter() methods.
    """
    @abstractmethod
    def area(self):
        """Calculate and return the area of the shape."""
        pass
    @abstractmethod
    def perimeter(self):
        """Calculate and return the perimeter of the shape."""
        pass
class Circle(Shape):
    def __Init__(self, radius):
        if radius <= 0:
```

```
            raise ValueError("Radius must be positive.")
        self. Radius = radius
    def area(self):
        from math import pi
        return pi * self.radius ** 2
    def perimeter(self):
        from math import pi
        return 2 * pi * self.radius
class Rectangle(Shape):
    def __ Init__(self, length, width):
        if length <= 0 or width <= 0:


 raise ValueError("Length and width must be positive.")
        self.length = length
        self. Width= width
    def area(self):
        return self.length * self.width


    def perimeter(self):
        return 2 * (self.length + self.width)
if __name__ == "__main__":
    try:
```

```
        print("Choose shape: 1. Circle 2. Rectangle")
        choice = input("Enter choice (1/2): "). Strip()

        if choice == "1":
            radius = float(input("Enter radius: "))
            shape = Circle(radius)
    Elif choice == "2":
            length = float(input("Enter length: "))
            width = float(input("Enter width: "))
            shape = Rectangle(length, width)
        else:
            raise ValueError("Invalid choice.")

        print(f"Area: {shape. Area():.2f}")
        print(f"Perimeter: {shape.perimeter():.2f}")

    except ValueError as e:
        print(f"Error: {e}")
    except Exception as e:
        print(f"Unexpected error: {e}")
```

OUTPUT:-


Choose shape: 1. Circle 2. Rectangle
Enter choice (1/2): 1
Enter radius: 10
Area: 314.16
Perimeter: 62.83