

# **FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)<sup>TM</sup>**

**HORMIS NAGAR, MOOKKANNOOR, ANGAMALY-683577**



*FOCUS ON EXCELLENCE*

**20MCA131 PROGRAMMING LAB**

***LABORATORY RECORD***

**Name: ARJUN AJAYAGHOSH**

**Branch: MASTER OF COMPUTER APPLICATIONS**

**Semester: 1      Batch: A      Roll No: 38**

**University Registration Number: FIT21MCA-2038**

***MARCH 2022***

# FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)<sup>TM</sup>

HORMIS NAGAR, MOOKKANNOOR, ANGAMALY-683577



FOCUS ON EXCELLENCE

## **CERTIFICATE**

*This is to certify that this is a Bonafide record of the Practical work done by  
**ARJUN AJAYAGHOSH (FIT21MCA-2038)** in the **20MCA131 PROGRAMMING  
LAB Laboratory**  
towards the partial fulfilment for the award of the Master Of Computer Applications  
during the academic year 2021-2022.*

Signature of Staff in Charge

Name:

Signature of H O D

Name:

**Date of University practical examination .....**

Signature of  
Internal Examiner

Signature of  
External Examiner

**CONTENT**

<b>SI No:</b>	<b>Date :</b>	<b>Name of Experiment:</b>	<b>Page No:</b>	<b>Signature of Staff –In – Charge:</b>
<b>CO1</b>				
<b>1</b>	<b>28/10/2021</b>	Display future leap years from current year to a final year entered by user.		
<b>2</b>	<b>28/10/2021</b>	List comprehensions: (a) Generate positive list of numbers from a given list of integers (b) Square of N numbers (c) Form a list of vowels selected from a given word (d) List ordinal value of each element of a word (Hint: use ord() to get ordinal values)		
<b>3</b>	<b>28/10/2021</b>	Count the occurrences of each word in a line of text.		
<b>4</b>	<b>28/10/2021</b>	Prompt the user for a list of integers. For all values greater than 100, store 'over' instead		
<b>5</b>	<b>10/11/2021</b>	Store a list of first names. Count the occurrences of 'a' within the list		
<b>6</b>	<b>10/11/2021</b>	Enter 2 lists of integers. Check (a) Whether list are of same length (b) whether list sums to same value (c) whether any value occur in both.		
<b>7</b>	<b>10/11/2021</b>	Get a string from an input string where all occurrences of first character replaced with '\$', except first character		
<b>8</b>	<b>10/11/2021</b>	Create a string from given string where first and last characters exchanged. [eg: python -> nythop]		
<b>9</b>	<b>10/11/2021</b>	Accept the radius from user and find area of circle.		
<b>10</b>	<b>11/11/2021</b>	Find biggest of 3 numbers entered.		
<b>11</b>	<b>11/11/2021</b>	Accept a file name from user and print extension of that.		

12	11/11/2021	Create a list of colors from comma-separated color names entered by user. Display first and last colors.		
13	11/11/2021	Accept an integer n and compute $n+nn+nnn$ .		
14	17/11/2021	Print out all colors from color-list1 not contained in color-list2.		
15	17/11/2021	Create a single string separated with space from two strings by swapping the character at position 1.		
16	17/11/2021	Merge two dictionaries.		
17	17/11/2021	Find gcd of 2 numbers.		
18	17/11/2021	From a list of integers, create a list removing even numbers.		
<b>CO2</b>				
19	25/11/2021	Program to find the factorial of a number		
20	25/11/2021	Generate Fibonacci series of N terms		
21	25/11/2021	Find the sum of all items in a list		
22	25/11/2021	Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.		
23	02/12/2021	Display the given pyramid with step number accepted from user.		
24	02/12/2021	Count the number of characters (character frequency) in a string.		
25	02/12/2021	Add 'ing' at the end of a given string. If it already ends with 'ing', then add 'ly'.		
26	09/12/2021	Accept a list of words and return length of longest word.		

27	09/12/2021	Construct following pattern using nested loop. *  * *  * * *  * * * *  * * * * *  * * * *  * * *  * *  *		
28	09/12/2021	Generate all factors of a number.		
<b>CO3</b>				
29	29/01/2022	Create a package graphics with modules rectangle, circle and sub-package 3D-graphics with modules cuboid and sphere. Include methods to find area and perimeter of respective figures in each module. Write programs that finds area and perimeter of figures by different importing statements. (Include selective import of modules and import * statements)		
<b>CO4</b>				
30	13/01/2022	Create Rectangle class with attributes length and breadth and methods to find area and perimeter. Compare two Rectangle objects by their area.		
31	29/01/2022	Create a Bank account with members account number, name, type of account and balance. Write constructor and methods to deposit at the bank and withdraw an amount from the bank.		
32	29/01/2022	Create a class Rectangle with private attributes length and width. Overload '<' operator to compare the area of 2 rectangles.		

33	20/01/2022	Create a class Time with private attributes hour, minute and second. Overload '+' operator to find sum of 2 time		
34	29/01/2022	Create a class Publisher (name). Derive class Book from Publisher with attributes title and author. Derive class Python from Book with attributes price and no_of_pages. Write a program that displays information about a Python book. Use base class constructor invocation and method overriding.		
<b>CO5</b>				
35	03/02/2022	Write a Python program to read a file line by line and store it into a list.		
36	03/02/2022	Write a Python program to read each row from a given csv file and print a list of strings.		

**COURSE OUTCOME 1**

- 1) **Display future leap years from current year to a final year entered by User.**

**Source code**

```
print ("Print leap year between two given years")
startyear=int(input("Enter start year"))
endyear=int(input("Enter last year"))
print ("List of leap years:")
for year in range(startyear, endyear):
    if (0 == year % 4) and (0!=year% 100) or (0==year%400):
        print (year)
```

**Output**

```
print leap year between two given years
Enter startyear2000
Enter end year2020
list of leap years
2000
2004
2008
2012
2016
```

- 2) **List comprehensions:**

- a. **Generate positive list of numbers from a given list of integers.**

**Source code**

```
list=[-11,0,3,-34,4,5]
print("Elements in the list are:",list) print("Positive numbers in the list")
for num in list:
    if num>=0:
        print(num)
```

**Output**

```
stud@debian:~/python$ python3 list1.py
0
3
4
5
stud@debian:~/python$ █
```

**b. Square of N numbers****Source code**

```
n=int(input('Enter range:'))
for num in range(1,n+1):
    num=num*num
    print(num)
```

**Output**

```
stud@debian:~/python$ python3 list2.py
[1, 4, 9, 16, 25]
stud@debian:~/python$ █
```

**c. Form a list of vowels selected from a given word.****Source code**

```
s="are"
list=[]
for i in s:
    if i in "aeiouAEIOU":
        list.append(i)
print("vowels in the list are:")
print(list)
```

**Output**

```
stud@debian:~/python$ python3 list3.py
['a']
['a', 'e']
stud@debian:~/python$ █
```



**d. List ordinal values of each element of a word.****Source code**

```
word = input("enter the word:")
print([ord(x) for x in word])
```

**Output**

```
stud@debian:~/python$ python3 list4.py
Enter the word :ashna
[97, 115, 104, 110, 97]
```

**3) Count the occurrences of each word in a line of text.****Source code**

```
list1=[]
list2=[]
x=input("Enter a line of text:")
for i in x.split(" "):
    list1.append(i)
    if i not in list2:
        list2.append(i)
for i in list2:
    print(i,"\t",list1.count(i))
```

**Output**

```
stud@debian:~/python$ python3 3.py
Enter a line of text:welcome to fisat
welcome      1
to           1
fisat        1
-
```

- 4) Prompt the user for a list of integers. For all values greater than 100, store 'over' instead.

#### Source code

```
list=[]
while True:
    n=int(input('Enter an integer: '))
    if(n<=100):
        list.append(n)
    else:
        list.append('over')
print(list)
```

#### Output

```
stud@debian:~/python$ python3 4.py
Enter an integer: 12
Enter an integer: 15
Enter an integer: 100
Enter an integer: 105
[12, 15, 100, 'over']
```

- 5) Store a list of first names. Count the occurrences of 'a' within the list.

#### Source code

```
list=['akash','dev','arun'] print("Elements in the list are:")
print(list)
count=0
for word in list:
    for i in word:
        if i=='a':
            count+=1
print("count of 'a' is:", count)
```

**Output**

```
stud@debian:~/python$ python3 5.py
Elements in the list are:
['akash', 'dev', 'arun']
count of 'a' is: 3
```

**6) Enter 2 lists of integers.Check**

- a. whether list are of same length
- b. whether list sums of same value
- c. whether any value occur in both.

**Source code**

```
l1=[3,7,9,7]
l2=[6,2,2,2]
print("List 1",l1)
print("List 2",l2)
x=len(l1)
y=len(l2)
if x==y:
    print("List are of same length")
else:
    print("Length of lists are different")
s1=0
s2=0
for i in range(x):
    s1=s1+l1[i]
print("Sum of elements of List1:",s1)
for j in range(y):
    s2=s2+l2[j]
print("Sum of elements of List2:",s2)
if s1==s2:
```

```

print("Sum of list elements is same")
else:
    print("Sum of list elements is not same")
print("Common elements are:")
for i in range(x):
    for j in range(y):
        if l1[i]==l2[j]:
            print(l1[i])

```

**Output**

```

[3, 7, 9, 7]
[6, 2, 2, 2]
list are of same length

The sum of list one is 26
The sum of list two is 12
the sum of 2 lists are not same

no common elements

```

- 7) Get a string from an input string where all occurrences of first character replaced with '\$', except first character. [eg: onion->oni\$n]

**Source code**

```

str=input("Enter a string: ")
print("Original string is: ",str)
char=str[0]
str=str.replace(char,'$')
str=char+str[1:]
print("String: ",str)

```

**Output**

```

stud@debian:~/python$ python3 7.py
Enter a string: onion
Original string is:  onion
String:  oni$n
stud@debian:~/python$

```

**8) Create a string from given string where first and last characters exchanged.****[eg:python->nythop]****Source code**

```
s=input("Enter a string: ")
t=s[0]
t1=s[-1]
n=len(s)
ns=t1+s[1:n-1]+t
print(ns)
```

**Output**

```
stud@debian:~/python$ python3 8.py
Enter a string: python
nythop
```

**9) Accept the radius from the user and find the area of the circle.****Source code**

```
r=int(input('Enter the radius: '))
A=3.14*r*r
print(A)
```

**Output**

```
stud@debian:~/python$ python3 9.py
Enter the radius: 7
153.86
```

**10) Find the biggest of 3 numbers****Source code**

```
a=int(input('Enter first number:'))
b=int(input('Enter second number:'))
c=int(input('Enter third number:'))
if a>b and a>c:
    print(a)
if b>a and b>c:
    print(b)
```

```
if c>a and c>b:
    print(c)
```

### Output

```
stud@debian:~/python$ python3 lar.py
Enter first number:6
Enter second number:9
Enter third number:23
23
```

### 11) Accept a file name from user and print extension of that.

#### Source code

```
import os
a=input("Enter file name:")
print("The extension of file",a,"is",os.path.splitext(a))
```

#### Output

```
stud@debian:~/python$ python3 ll.py
Enter file name:5.py
The extension of file 5.py is ('5', '.py')
```

### 12) Create a list of colors from comma-separated color names entered by user.

#### Display first and last colors.

#### Source code

```
colors=[]
str=(input("Enter color names:"))
for i in str.split(','):
    colors.append(i)
print(colors)
print("first color:",colors[0],"Last color:",colors[-1])
```

**Output**

```
stud@debian:~/arun1$ python3 coll3.py
enter the colors:red,green,blue,black,yellow
['red', 'green', 'blue', 'black', 'yellow']
first color: red
last color: yellow
stud@debian:~/arun1$
```

**13) Accept an integer n and compute n+nn+nnn.****Source code**

```
n=int(input("Enter the number:"))
a=n*1
b=n*11
c=n*111
s=a+b+c
print(n,"+",n,"*",n,"+",n,"*",n,"*",n,"=",s)
```

**Output**

```
stud@debian:~/python$ python3 13.py
Enter the number:18
18 + 18 * 18 + 18 * 18 * 18 = 2214
```

**14) Print out all color from color-list1 not contained in color-list2****Source code**

```
l1=['red','green','blue','yellow','black']
l2=['red','green','yellow']
print(l1)
print(l2)
print("Colors that are not in l2:")
")
for i in l1:
    if i not in l2:
        print(i)
```

**Output**

```
stud@debian:~/python$ python3 14.py
['red', 'green', 'blue', 'yellow', 'black']
['red', 'green', 'yellow']
Colors that are not in l1:
blue
black
```

- 15) Create a single string separated with space from two strings by swapping the character at position 1.

**Source code**

```
str1=input("Enter first string:")
str2=input("Enter second string:")
str3=str2[0]+str1[1:]+" "+str1[0]+str2[1:]
print(str3)
```

**Output**

```
stud@debian:~/python$ python3 15.py
Enter first string:arun
Enter second string:g
grun a
```

- 16) Merge two dictionaries.

**Source code**

```
D1={"Name":"Aju","Age":"22"}
D2={"Gender":"m"}
D1.update(D2)
print("After merging...")
print(D1)
```

**Output**

```
stud@debian:~/arun1$ python3 oxf.py
{'name': 'aju', 'age': '22', 'sex': 'm'}
aju
stud@debian:~/arun1$
```



**17) Find gcd of 2 numbers****Source code**

```

a=int(input("Enter first number: "))
b=int(input("Enter first number: "))
x=min(a,b)
gcd=0
for i in range (1,x+1):
    if((a%x==0) and (b%x==0)):
        gcd=i
print("GCD is",i)

```

**Output**

```

stud@debian:~/python$ python3 17.py
Enter a value : 12
Enter second value: 54
gcd is 6

```

**18) From a list of integers,create a list removing even numbers.****Source code**

```

l1=[1,2,3,4,5,6,7,8,9,10]
print(l1)
l2=[]
for i in range(len(l1)):
    if l1[i]%2!=0:
        l2.append(l1[i])
print("List after removing even elements")
print(l2)

```

**Output**

```

stud@debian:~/python$ python3 18.py
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
List after removing even elements
[1, 3, 5, 7, 9]

```

## **COURSE OUTCOME 2**

### **19) Program to find the factorial of a number.**

#### **Source code**

```
n=int(input('Enter a number:'))  
fact=1  
for i in range (1,n+1):  
    fact=fact*i  
print(fact)
```

#### **Output**

```
stud@debian:~$ python3 new.py  
enter the value:4  
24  
stud@debian:~$ █
```

### **20) Generate fibonacci series of N terms.**

#### **Source code**

```
n=int(input('Enter a limit:'))  
a=0  
b=1  
print(a)  
print(b)  
for i in range (2,n):  
    c=a+b  
    print(c)  
    a=b  
    b=c
```

**Output**

```
stud@debian:~$ python3 new.py
enter the value:9
0
1
1
2
3
5
8
13
21
stud@debian:~$ █
```

**21) Find the sum of all items in a list.****Source code**

```
list=[1,6,3,4,1]
print("List elements are:",list)
sum=0
for i in list:
    sum=sum+i
print("The sum of list elements is:",sum)
```

**Output**

```
stud@debian:~$ python3 new.py
List elements are: [1, 6, 3, 4, 1]
The sum of list elements is: 15
stud@debian:~$ █
```

**22) Generate a list of four digit numbers in a given range with all their digits even and the number is a perfect square.****Source code**

```
limit1=1000
limit2=9999
list1=[]
for i in range(limit1,limit2):
    j=i
    digit=[]
    while(i!=0):
        digit.append(i%10)
```

```

        i=int(i/10)
count=0
for n in digit:
    if n%2==0:
        count=count+1
    if count==4:
        for k in range(31,100):
            if((k**2)==j):
                list1.append(j)
            print(k)

print(list1)

```

**Output**

```

stud@debian:~$ python3 new.py
68
78
80
92
[4624, 6084, 6400, 8464]
stud@debian:~$ █

```

**23) Display the given pyramid with step number accepted from user.**

**Source code**

```

n=int(input("Enter a number:"))
for j in range(0,n+1):
    for i in range(1,j+1):
        i=j*i
        print(i,end=" ")
    print("\n")

```

**Output**

```

stud@debian:~$ python3 new.py
Enter a number:4

1
2 4
3 6 9
4 8 12 16

```

**24) Count the number of characters (character frequency) in a string.****Source code**

```

string=input("Enter a string:")
list1=[]
for i in string:
    if i not in list1:
        list1.append(i)
for i in list1:
    count=0
    for j in string:
        if(i==j):
            count=count+1
    print(i,"\t:",count)

```

**Output**

```

stud@debian:~$ python3 new.py
Enter a string:college
c      : 1
o      : 1
l      : 2
e      : 2
g      : 1
stud@debian:~$ █

```

**25) Add 'ing' at the end of a given string. If it already ends with 'ing', then add 'ly'.**

**Source code**

```
string=input("Enter a string:")
if(string[-3:]=="ing"):
    string+="ly"
else:
    string+="ing"
print(string)
```

**Output**

```
stud@debian:~$ python3 new.py
Enter a string:go
going
stud@debian:~$ python3 new.py
Enter a string:coming
comingly
stud@debian:~$ █
```

**26) Accept a list of words and return length of longest word.**

**Source code**

```
lis=[]
n=int(input("Enter the range:"))
print("Enter the words:")
for i in range(0,n):
    lis.append(input(""))
longest=lis[0]
for i in range(1,n):
    if(len(lis[i])>len(longest)):
        longest=lis[i]
print("Length of longest word is",len(longest))
```

**Output**

```

stud@debian:~$ python3 new.py
Enter the range:3
Enter the words:
fisat
college
angamaly
Length of longest word is 8
stud@debian:~$ █

```

27) Construct following pattern using nested loop.

```

*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*

```

**Source code**

```

for i in range(1,6):
    for j in range(1,i+1):
        print("*",end=" ")
    print("\n")
for i in range(4,0,-1):
    for j in range(1,i+1):
        print("*",end=" ")
    print("\n")

```

**Output**

```

stud@debian:~$ python3 new.py
*

* *

* * *

* * * *

* * * * *

* * * *

* * *

* *

*

```

**28) Generate all factors of a number.****Source code**

```

n=int(input("Enter a number:"))
print("Factors are")
for i in range(1,n+1):
    if(n%i==0):
        print(i)

```

**Output**

```

stud@debian:~$ python3 new.py
Enter a number:56
Factors are
1
2
4
7
8
14
28
56

```



**COURSE OUTCOME 3**

- 29) Create a package graphics with modules rectangle, circle and sub-package 3D-graphics with modules cuboid and sphere. Include methods to find area and perimeter of respective figures in each module. Write programs that finds area and perimeter of figures by different importing statements. (Include selective import of modules and import \* statements)**

**Source code**

**Graphice\circle.py**

```
from math import pi
def area_circle(radius):
    return pi*radius*radius
def perimeter_circle(radius):
    return 2*pi*radius
```

**Graphics\rectangle.py**

```
def area_rec(length,width):
    return length*width
def perimeter_rec(length,width):
    return 2*(length+width)
```

**Graphics\tdgraphics\cuboid.py**

```
def area_cuboid(l,b,h):
    return 2*(l*h + b*h + l*b)
def volume_cuboid(l,b,h):
    return l*b*h
```

**Graphics\tdgraphics\sphere.py**

```
from math import pi
def area_sphere(radius):
    return 4*(pi*radius*radius)
def perimeter_sphere(radius):
    return 2*pi*radius
```

**graphics.py (driver code)**

```
import Graphics

from Graphics import circle,rectangle
from Graphics.tdgraphics import cuboid,sphere
from Graphics.circle import *

print("Area of a circle with radius 10 is : ",circle.area_circle(10))
print("Perimeter of a circle with radius 10 is ",circle.perimeter_circle(10))
print("\n")

print("Area of a Rectangle with length and width 10 is :
      ",rectangle.area_rec(10,10))
print("Perimeter of a Rectangle with length and width 10 is :
      ",rectangle.perimeter_rec(10,10))
print("\n")

print("Area of a cuboid with length,width,height 10 is :
      ",cuboid.area_cuboid(10,10,10))
print("Volume of a cuboid with length,width,height 10 is :
      ",cuboid.volume_cuboid(10,10,10))
print("\n")

print("Area of a sphere with radius 10 is : ",sphere.area_sphere(10))
print("Perimeter of a sphere with radius 10 is ",sphere.perimeter_sphere(10))
```

## Output

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\owner\Desktop\LAB MCA\PYTHON\record\co3>2.py
Area of rectangle :144
Area of circle :36
Area of sphere :1808.6399999999999
Area of cuboid :95551488
Perimeter of rectangle :48
Perimeter of circle :37.68
Diameter of sphere :24
Periameter of cuboid :184

C:\Users\owner\Desktop\LAB MCA\PYTHON\record\co3>
```

**COURSE OUTCOME 4**

**30) Create Rectangle class with attributes length and breadth and methods to find area and perimeter. Compare two Rectangle objects by their area.**

**Source code**

```
class Rectangle:

    def __init__(self,length,breadth):

        self.length = length

        self.breadth = breadth

    def area(self):

        return self.length * self.breadth

    def perimeter(self):

        return 2*(self.length + self.breadth)

l=int(input("Enter length of rectangle1: "))

b=int(input("Enter breadth of rectangle1: "))

rect1 = Rectangle(l,b)

a1=rect1.area()

p1=rect1.perimeter()

print("Area:",a1)

print("Perimeter:",p1)

l=int(input("Enter length of rectangle2: "))

b=int(input("Enter breadth of rectangle2: "))

rect2 = Rectangle(l,b)

a2=rect2.area()

p2=rect2.perimeter()

print("Area:",a2)
```

```

print("Perimeter:",p2)

if (a1>a2):

    print("First rectangle is larger")

elif a1==a2:

    print("Rectangles are of same area")

else:

    print("Second rectangle is larger")

```

**Output**

```

stud@debian:~$ python3 new.py
Enter length of rectangle1: 6
Enter breadth of rectangle1: 4
Area: 24
Perimeter: 20
Enter length of rectangle2: 8
Enter breadth of rectangle2: 6
Area: 48
Perimeter: 28
Second rectangle is larger
stud@debian:~$

```

- 31) Create a Bank account with members account number, name, type of account and balance. Write constructor and methods to deposit at the bank and withdraw an amount from the bank.**

**Source code**

```

class bank:
    def __init__(self, accno, name, tyacc, bal):
        self.accno = accno
        self.name = name
        self.tyacc = tyacc
        self.bal = bal
    def deposit(self, x):
        self.bal = self.bal + x
        print("Account of", self.name)
        print("after deposit:", self.bal)
    def withdraw(self, y):
        if (y < self.bal):
            self.bal = self.bal - y
            print(".....")
            print("Account of", self.name)

```

```
        print("after withdraw:",self.bal)
    else:
        print("insufficient balance")
    def display_balance(self):
        return self.bal
acc1=bank(1,"Arun","savings",10000)
while(1):
    print("1.Deposit\n2.Withdraw\n3.Display balance\n4.Exit\n")
    ch=int(input("Enter your choice:"))
    if ch==1:
        amt=int(input("Enter the amount:"))
        b=acc1.deposit(amt)

    elif ch==2:
        amt=int(input("Enter the amount:"))
        b=acc1.withdraw(amt)

    elif ch==3:
        cb=acc1.display_balance()
        print("Current balance:",cb)

    elif ch==4:
        exit(1)
    else:
        print("Invalid choice")
```

**Output**

```
----- / sssss pssss
```

```
1.Deposit
2.Withdraw
3.Display balance
4.Exit
```

```
Enter your choice:3
Current balance: 10000
```

```
1.Deposit
2.Withdraw
3.Display balance
4.Exit
```

```
Enter your choice:1
Enter the amount:2000
Account of Arun
after deposit: 12000
```

```
1.Deposit
2.Withdraw
3.Display balance
4.Exit
```

```
Enter your choice:2
Enter the amount:3000
```

```
-----
```

```
Account of Arun
after withdraw: 9000
```

```
1.Deposit
2.Withdraw
3.Display balance
4.Exit
```

```
Enter your choice:█
```

- 32) Create a class **Rectangle** with private attributes **length** and **width**. Overload '**<**' operator to compare the area of 2 rectangles.

**Source code**

```
class Rectangle:
    def __init__(self,length,breadth):
        self.__length = length
        self._breadth = breadth

    def __lt__(self,rect2):
```

```

        if self._length*self._breadth < rect2._length*rect2._breadth:

            return True

        else:

            return False

l=int(input("Enter length of rectangle1: "))

b=int(input("Enter breadth of rectangle1: "))

rect1 = Rectangle(l,b)

l=int(input("Enter length of rectangle2: "))

b=int(input("Enter breadth of rectangle2: "))

rect2 = Rectangle(l,b)

if rect1 < rect2:

    print("Second rectangle is larger")

else:

    print("First rectangle is larger")

```

**output**

```

stud@debian:~/arun1$ python3 overload.py
Enter length of rectangle1: 5
Enter breadth of rectangle1: 3
Enter length of rectangle2: 8
Enter breadth of rectangle2: 4
Second rectangle is larger
stud@debian:~/arun1$ █

```

- 33) Create a class Time with private attributes hour, minute and second.  
Overload '+' operator to find sum of 2 time.**

**Source code**

```

class Time:

    def __init__(self,hr,min,sec):

        self._hr=hr

```



```

        self._min=min

        self._sec=sec

    def add_(t1,t2):

        hr=t1._hr+t2._hr

        min=t1._min+t2._min

        sec=t1._sec+t2._sec

        print(hr,":",min,":",sec)

t1=Time(3,45,56)

t2=Time(4,20,3)

t1+t2

```

**Output**

```

Time1(2,15,46)
Time2(6,20,10)
after addition
8 : 35 : 56

```

- 34) Create a class Publisher (name). Derive class Book from Publisher with attributes title and author. Derive class Python from Book with attributes price and no\_of\_pages. Write a program that displays information about a Python book. Use base class constructor invocation and method overriding.**

**Source code**

```

class Publisher(object):
    def __init__(self,name):
        self.name=name
    def display1(self):
        print(self.title)
        print(self.author)

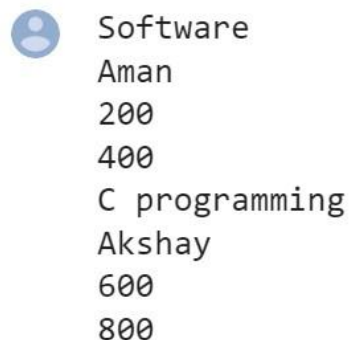
class Book(Publisher):

```

```

def _init_(self,name,title,author):
    super()._init_(name)
    self.title=title
    self.author=author
def display2(self):
    #super().display1()
    print(self.title)
    print(self.author)
class Python(Book):
    def _init_(self,name,title,author,price,no_of_pages):
        super()._init_(name,title,author)
        self.price=price
        self.no_of_pages=no_of_pages
    def display3(self):
        super().display2()
        print(self.price)
        print(self.no_of_pages)
p=Python("ABC Publications","Taming Python","jeeva jose",100,500)
p.display3()
q=Python("XYZ Publications","Java programming","E
Balagurusami",500,1200)
q.display3()

```

**Output**


```

Software
Aman
200
400
C programming
Akshay
600
800

```

**COURSE OUTCOME 5**

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

**Source code**

```
fp=open("text_file.txt",'r')
lines=[]
for line in fp:
    lines.append(line.strip())
print(lines)
```

**Output**

```
["Kerala, a state on India's tropical Malabar Coast, has nearly 600km of Arabian
Sea shoreline. It's known for its palm-lined beaches and backwaters, a network
of canals. Inland are the Western Ghats, mountains whose slopes support tea, cof
fee and spice plantations as well as wildlife."]
```

36) Write a Python program to read each row from a given csv file and print a list of strings.

**Source code**

```
import csv

with open('people.csv', 'r') as file:

    reader = csv.reader(file)
    for row in reader:
        print(row)
```

**Output**

```
['Name', 'Age', 'Profession']
['John', '30', 'Manager']
['Jerin', '20', 'Accountant']
['Ann', '22', 'Professor']
['Angel', '24', 'Engineer']
['Sree lakshmi', '28', 'Doctor']
```