

**Basics of Python Laboratory**

**(BCS222)**

BTech CSE 2nd Semester

Practical File

**SUBMITTED TO: SUBMITTED BY:**

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**PRACTICAL 1 : WRITE A PYTHON PROGRAM TO CALCULATE THE AREA OF A RECTANGLE BY ASSIGNING VALUES TO LENGTH AND BREADTH AS WELL AS TAKING INPUT FROM THE USER.**

**1.**

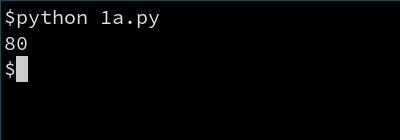
length = 40

breadth = 2

area = length \* breadth

print(area)

**OUTPUT:**

****

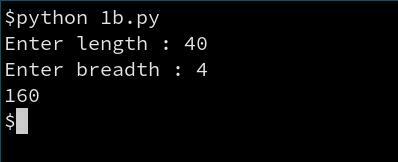
length = int(input("Enter length : "))

breadth = int(input("Enter breadth : "))

area = length \* breadth

print(area)

**OUTPUT:**

****

**PRACTICAL 2 : WRITE A PYTHON PROGRAM TO SWAP TWO NUMBERS USING TEMP VARIABLES AND MULTIPLE ASSIGNMENTS.**

a = 10

b = 20

print("Before swapping ",a,b)

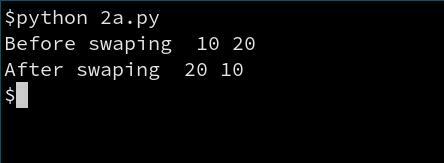
temp = a

a = b

b = temp

print("After swapping ",a,b)

**OUTPUT:**

****

a = 10

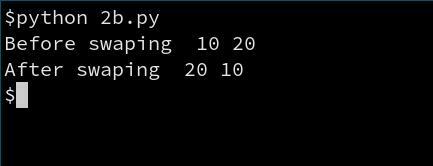
b = 20

print("Before swapping ",a,b,)

a , b = b , a

print("After swapping ",a,b)

**OUTPUT:**

****

**PRACTICAL 3 : WRITE A PYTHON PROGRAM TO SHOW THE USE OF BUILD IN FUNCTIONS AND METHODS FOR THE FOLLOWING DATA TYPES:NUMERIC,STRING,LIST,TUPLE,SET,DICTIONARY.**

#numeric functions

num = 8

print(type(num))

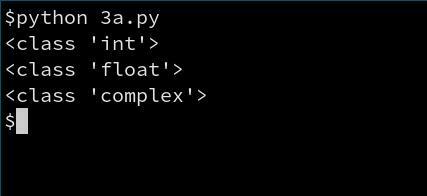
num = 3.45

print(type(num))

num = 2+4j

print(type(num))

**OUTPUT:**

****

#String functions

str1='Hello World!'

str2="bye World!"

str3="""I

Love

Python"""

print(str1,type(str1))

print(str2,type(str2))

print(str3,type(str3))

print(str1[2:])

print(str1.count("l"))

print(str1.upper())

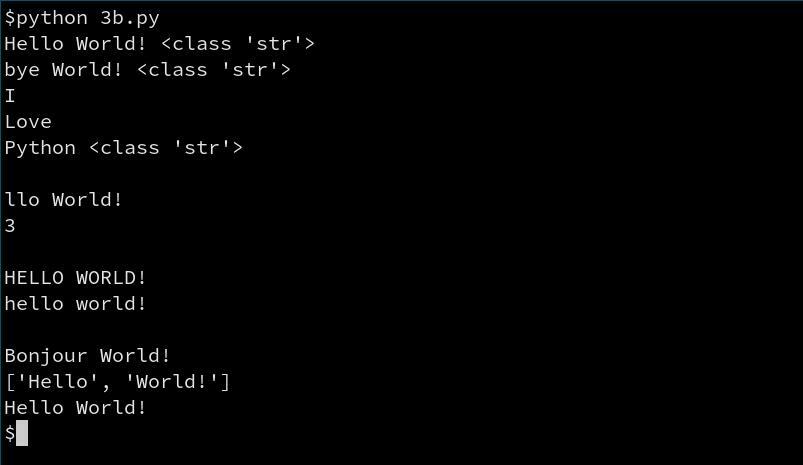
print(str1.lower())

print(str1.replace("Hello","Bonjour"))

print(str1.split())

print(str1.title())

**OUTPUT:**

****

#list

lst = [1,4,7,9,14,18]

print(lst,type(lst))

lst.append(22)

print(lst)

print("max is : ",max(lst))

print("min is : ",min(lst))

lst.insert(1,5)

print(lst)

print(lst.count(9))

lst.remove(22)

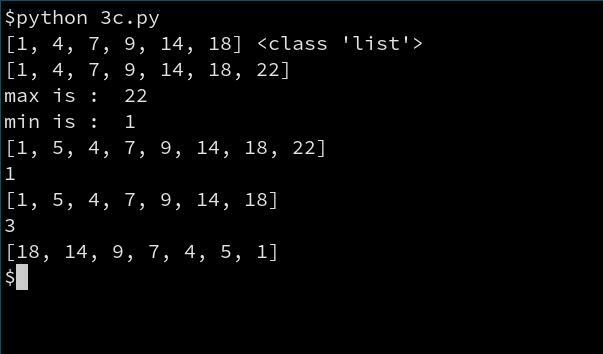
print(lst)

print(lst.index(7))

lst.reverse()

print(lst)

**OUTPUT:**

****

#Tuple

t=(1,3,6,9,11,14,18)

print(t)

print(type(t))

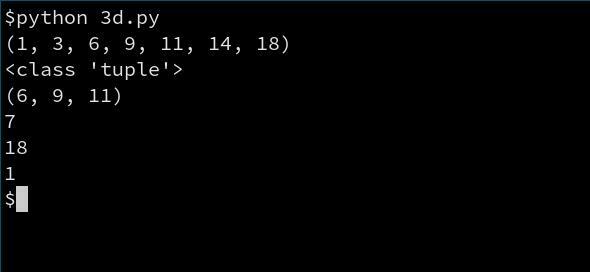
print(t[2:5])

print(len(t))

print(max(t))

print(min(t))

**OUTPUT:**

****

#sets

s1={0,1,2,3,4,5,6,7}

s2={5,6,7,8,9}

print(s1,s2)

s2.add(10)

print(s2)

s2.remove(10)

print(s2)

print(s1.issubset(s2))

print(s2.issuperset(s1))

#union of two sets

print(s1|s2)

#intersect of two sets

print(s1&s2)

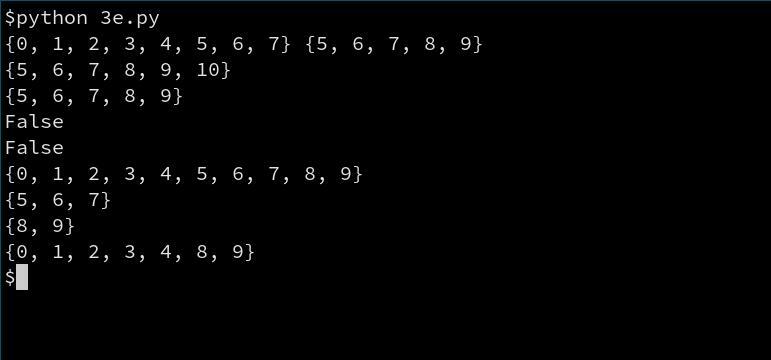
#differences of two sets

print(s2.difference(s1))

#symmetric difference of two sets

print(s1^s2)

**OUTPUT:**

****

#DICTIONARY

BOOK\_NAME\_AND\_AUTHORS={"Let Us Python":"Yashavant Kanetkar","Python Crash Course":"Eric Matthes"}

print(len(BOOK\_NAME\_AND\_AUTHORS))

print(BOOK\_NAME\_AND\_AUTHORS.get("Let Us Python"))

print(BOOK\_NAME\_AND\_AUTHORS.keys())

print(BOOK\_NAME\_AND\_AUTHORS.items())

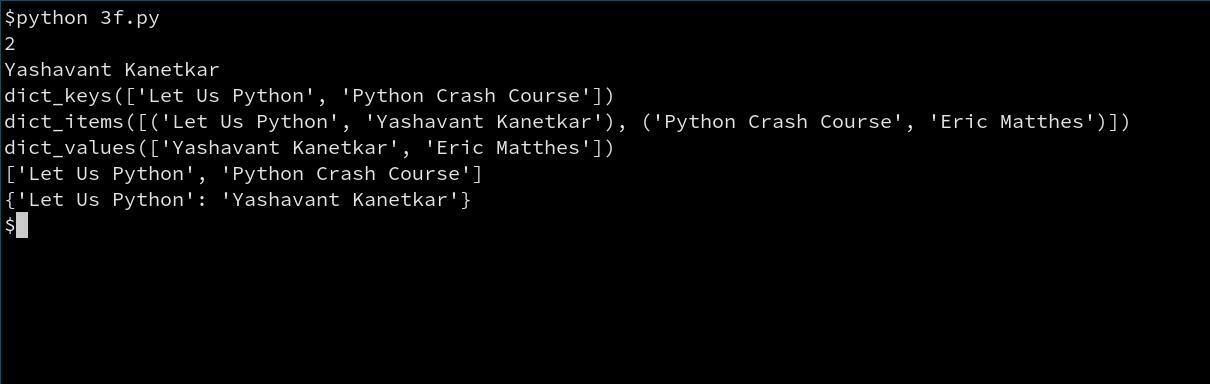
print(BOOK\_NAME\_AND\_AUTHORS.values())

print(sorted(BOOK\_NAME\_AND\_AUTHORS))

BOOK\_NAME\_AND\_AUTHORS.popitem()

print((BOOK\_NAME\_AND\_AUTHORS))

**OUTPUT:**

****

**PRACTICAL 4 : WRITE A PROGRAM TO FIND THE MAXIMUM OF THREE NUMBERS USING NESTED IF-ELSE STATEMENTS.**

n1=int(input("Enter number 1 : "))

n2=int(input("Enter number 2 : "))

n3=int(input("Enter number 3 : "))

if n1>n3:

if n1>n2:

print(n1,"is biggest of all")

else:

print(n2,"is biggest of all")

else:

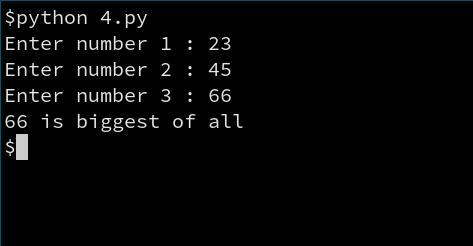
if n3>n2:

print(n3,"is biggest of all")

else :

print(n2,"is biggest of all")

**OUTPUT:**

****

**PRACTICAL 5 : WRITE A PROGRAM TO PROMPT A USER TO ENTER A DAY OF THE WEEK. IF THE ENTERED DAY OF THE WEEK IS BETWEEN 1 AND 7, THEN DISPLAY THE RESPECTIVE NAME OF THE DAY.**

inp=int(input("Enter the day of week in number : "))

if inp == 1:

print("Monday")

elif inp == 2:

print("Tuesday")

elif inp == 3:

print("Wednesday")

elif inp == 4:

print("Thursday")

elif inp == 5:

print("Friday")

elif inp == 6:

print("Saturday")

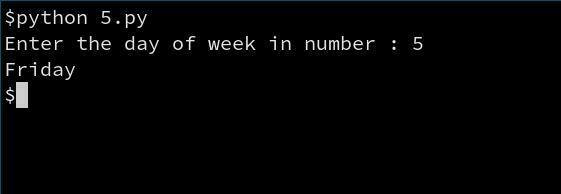
elif inp == 7:

print("Sunday")

else :

print("Invalid input")

**OUTPUT:**

****

**PRACTICAL 6 : WRITE A PROGRAM TO FIND THE SUM OF DIGITS OF A NUMBER USING A WHILE LOOP.**

inp = int(input("Enter number : "))

temp = inp

sum = 0

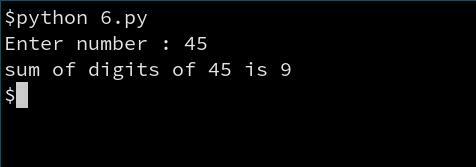
while (temp != 0):

sum+=temp%10

temp//=10

print("sum of digits of",inp,"is",sum)

**OUTPUT:**

****

**PRACTICAL 7 : WRITE A PROGRAM TO FIND THE FACTORIAL OF A NUMBER USING A FOR LOOP.**

inp = int(input("Enter the number you want to find the factorial of : "))

fact=1

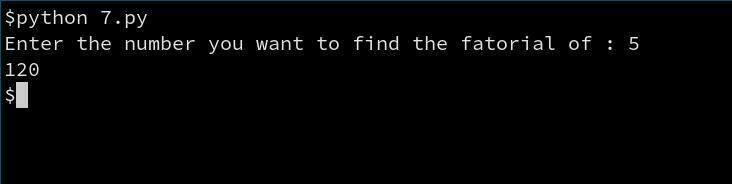
for i in range(inp):

fact \*= inp

inp -= 1

print(fact)

**OUTPUT:**

****

**PRACTICAL 8 : WRITE A PROGRAM TO PRINT NUMBERS BETWEEN 0 TO 10 EXCEPT 7 AND 8.**

for i in range(1,11):

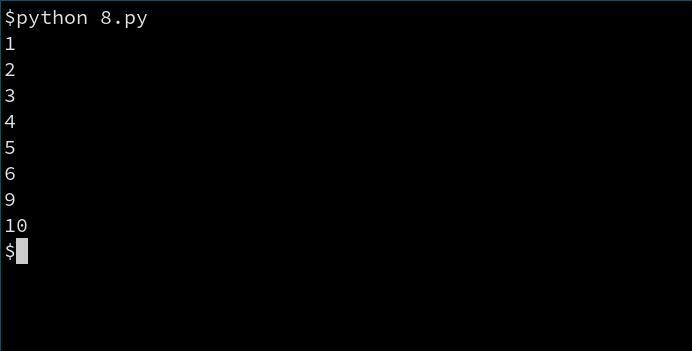
if i == 7 or i == 8:

continue

else:

print(i)

**OUTPUT:**

****

**PRACTICAL 9 :WRITE A PROGRAM TO CREATE A DICTIONARY OF THE NAME AND AGE OF FIVE EMPLOYEES, TAKE THE INPUT FROM THE USER AND DISPLAY THE AGE CORRESPONDING TO THE NAME.**

d={"vishal":20,

"aman":19,

"rahul":21,

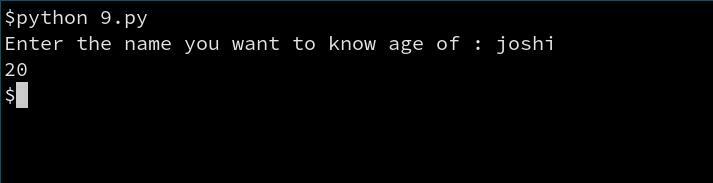
"kumar":18,

"joshi":20}

inp = input("Enter the name you want to know age of : ")

print(d[inp])

**OUTPUT:**

****

**PRACTICAL 10 : WRITE A PROGRAM TO CHECK WHETHER A GIVEN NUMBER IS AN ARMSTRONG NUMBER OR NOT.**

num = int(input("Enter a number: "))

sum = 0

temp = num

while temp > 0:

digit = temp % 10

sum += digit \*\* 3

temp //= 10

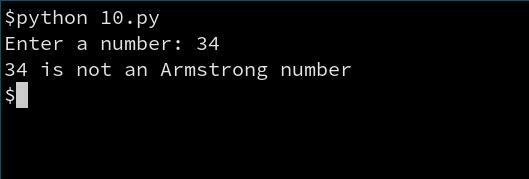
if num == sum:

print(num,"is an Armstrong number")

else:

print(num,"is not an Armstrong number")

**OUTPUT:**

****

**PRACTICAL 11 : WRITE A PYTHON FUNCTION THAT RETURNS A MAXIMUM OF TWO NUMBERS.**

def find\_max(a,b):

if a>b:

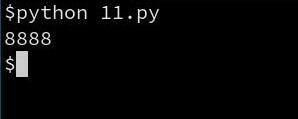
return b

else:

return a

print(find\_max(1,2))

**OUTPUT:**

****

**PRACTICAL 12 : WRITE A PYTHON FUNCTION THAT CALCULATES THE FACTORIAL OF A NUMBER.**

def facto(a):

fact=1

while (a>0):

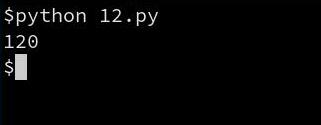
fact \*= a

a-=1

return fact

print(facto(5))

**OUTPUT:**

****

**PRACTICAL 13 :WRITE A FUNCTION THAT RETURNS THE AREA AND PERIMETER OF A RECTANGLE**

def rectangle\_area\_perimeter(a,b):

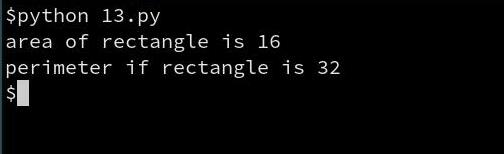
area = a\*b

perimeter = 2\*area

print("area of rectangle is",area,"\nperimeter if rectangle is",perimeter)

rectangle\_area\_perimeter(4,4)

**OUTPUT:**

****

**PRACTICAL 14 :WRITE A PYTHON TO PRINT DIFFERENT PATTERNS.**

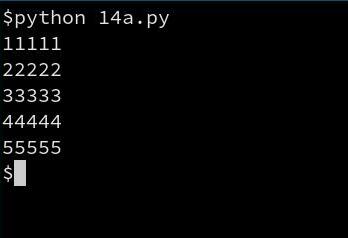
for i in range(5):

for j in range(i):

print(i+1,end='')

print()

**OUTPUT:**



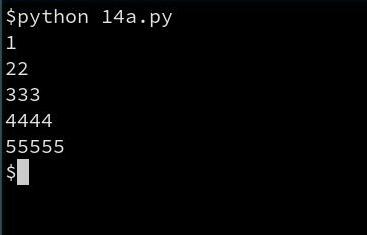
for i in range(5):

for j in range(i+1):

print(i+1,end='')

print()

**OUTPUT:**



al=”ABCDE”

for i in range(5):

for j in range(i+1):

print(al[i],end='')

print()

