SRM Institute of Science and Technology
Ramapuram Chennai
Faculty of Science & Humanities
(A Place for Transformation)
Department of Computer Science and Applications (BCA & BCA-GenAI)

PRACTICAL RECORD

NAME :

REGISTER NUMBER :

COURSE : BCA

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SUBJECT CODE : UCA23501J -

SUBJECTNAME : PYTHON PROGRAMMING

October 2025

SRM Institute of Science and Technology
Ramapuram Chennai
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REGISTERNUMBER:

BONAFIDECERTIFICATE

This is to certify that the bonafide work done by_____ in the subject **UCA23501J - PYTHON PROGRAMMING** at, SRM Institute of Science and Technology, Ramapuram Chennai in **October 2025**.

STAFFIN-CHARGE **HEAD OF THE DEPARTMENT**

Submitted for the University Practical Examination held at SRM Institute of Science and Technology, Ramapuram Chennai on _____.

INTERNAL EXAMINER 1 **INTERNAL EXAMINER 2**

INDEX

EX.No. : 1 **RegNo:**

Date : **Name :**

Write a Python code to display system information using pywhois.

AIM:

To Write a Python code to display system information using pywhois

PROGRAM:

```
import platform
my_system = platform.uname()
print(f"System: {my_system.system}")
print(f"Node Name: {my_system.node}")
print(f"Release: {my_system.release}")
print(f"Version: {my_system.version}")
print(f"Machine: {my_system.machine}")
print(f"Processor: {my_system.processor}")
```

OUTPUT:

```
System: Windows
Node Name: DESKTOP-7ILF0RN
Release: 10
Version: 10.0.19041
Machine: AMD64
Processor: Intel64 Family 6 Model 165 Stepping 5, GenuineIntel
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 2 **RegNo:**

Date : **Name :**

The Magic 8 Ball is a toy used for fortune-telling or seeking advice.

AIM:

To a python program to generate the Magic 8 Ball is for fortune-telling or seeking advice.

PROGRAM:

```
import random
answers = ['It is certain', 'It is decidedly so', 'Without a doubt', 'Yes –
 definitely', 'You may rely on it', 'As I see it, yes', 'Most likely', 'Outlook good', 'Yes Signs point to yes
', 'Reply hazy', 'try again', 'Ask again later', 'Better not tell you now', 'Cannot predict now', 'Concentrat
e and ask again', 'Dont count on it', 'My reply is no', 'My sources say no', 'Outlook not so good', 'Very
doubtful']

print('Hello World, I am the Magic 8 Ball, What is your name?')
name = input()
print('hello ' + name)

def Magic8Ball():
    print('Ask me a question.')
    input()
    print (answers[random.randint(0, len(answers)-1)] )
    print('I hope that helped!')
    Replay()

def Replay():
    print ('Do you have another question? [Y/N] ')
    reply = input()
    if reply == 'Y':
        Magic8Ball()
```

```
    elif reply == 'N':
        #exit()
        print('Bye')
    else:
        print('I apologies, I did not catch that. Please repeat.')
        Replay()
    Magic8Ball()
```

OUTPUT:

```
Hello World, I am the Magic 8 Ball, What is your name?
joe
hello joe
Ask me a question.
will  i pass this semester ?
Very doubtful
I hope that helped!
Do you have another question? [Y/N]
N
Bye
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 3 **RegNo:**

Date : **Name :**

Check whether a number is prime or not

AIM:

To write a program to check whether a number is prime or not in python.

PROGRAM:

```
num = int(input("Enter a number: "))
if num > 1:
  for i in range(2,num):
     if (num % i) == 0:
        print(num,"is not a prime number")
        print(i,"times",num//i,"is",num)
        break
      else:
         print(num,"is a prime number")
 else:
  print(num,"is not a prime number")
```

OUTPUT:

Enter a number: 5

5 is a prime number

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 4 **RegNo:**

Date : **Name :**

Make a Simple Calculator

AIM:

Python Program to Make a Simple Calculator.

PROGRAM:

```
def add(x, y):
   return x + y


def subtract(x, y):
   return x - y


def multiply(x, y):
   return x * y


def divide(x, y):
   return x / y


print("Select operation.")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")

while True:

   choice = input("Enter choice(1/2/3/4): ")
```

```
if choice in ('1', '2', '3', '4'):
    num1 = float(input("Enter first number: "))
    num2 = float(input("Enter second number: "))

    if choice == '1':
        print(num1, "+", num2, "=", add(num1, num2))

    elif choice == '2':
        print(num1, "-", num2, "=", subtract(num1, num2))

    elif choice == '3':
        print(num1, "*", num2, "=", multiply(num1, num2))

    elif choice == '4':
        print(num1, "/", num2, "=", divide(num1, num2))
    break
else:
    print("Invalid Input")
```

OUTPUT:

```
Select operation.
1.Add
2.Subtract
3.Multiply
4.Divide
Enter choice(1/2/3/4): 1
Enter first number: 23
Enter second number: 45
23.0 + 45.0 = 68.0
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 5 **RegNo:**

Date : **Name :**

Find the Factorial of a Number

AIM:

To write a python program for Finding the Factorial of a Number.

PROGRAM:

```
num = int(input("Enter a number: "))
factorial = 1
# check if the number is negative, positive or zero
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)
```

OUTPUT:

Enter a number: 5

The factorial of 5 is 120

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 6 **RegNo:**

Date : **Name :**

Python Program to Generate a Random Number

AIM:

To write a python Program for generating a Random Number

PROGRAM:

```
import random
x=int(input("Enter a number to Predict "))
y=random.randint(0,9)#single
if x==y:
  print("Exact Prediction ",x)
elif (x-y) ==1 :
 print("Ohhh!Missed By One ", y)
else:
  print("Prediction dose not match ",y )
```

OUTPUT:

```
Enter a number to Predict 7
Prediction dose not match  58
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 7 **RegNo:**

Date : **Name :**

Python Program to Display the multiplication Table

AIM:

TO write a Python Program for Displaying the multiplication Table.

PROGRAM:

```
x=int(input("Enter a number to generate a table"))
for i in range(1,11):
  print("{0} * {1} = {2}".format(i,x,i*x))
```

OUTPUT:

```
Enter a number to generate a table 5
1 * 5 = 5
2 * 5 = 10
3 * 5 = 15
4 * 5 = 20
5 * 5 = 25
6 * 5 = 30
7 * 5 = 35
8 * 5 = 40
9 * 5 = 45
10 * 5 = 50
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 8 **RegNo:**

Date : **Name :**

Python Program to Convert Decimal to Binary, Octal and Hexadecimal

AIM:

To Write a Python Program for Converting Decimal to Binary, Octal and Hexadecimal

PROGRAM:

```
dec = int(input())

print("The decimal value Entered ", dec, "is:")
print(bin(dec), "in binary.")
print(oct(dec), "in octal.")
print(hex(dec), "in hexadecimal.")
```

OUTPUT:

```
98
The decimal value Entered  98 is:
0b1100010 in binary.
0o142 in octal.
0x62 in hexadecimal.
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 9 **RegNo:**

Date : **Name :**

Python Program to Transpose a Matrix

AIM:

TO WRITE A Python Program FOR Transposing a Matrix

PROGRAM:

```
X = [[12,7],
    [4 ,5],
    [3 ,8]]

result = [[0,0,0],
          [0,0,0]]

# iterate through rows
for i in range(len(X)):
   # iterate through columns
   for j in range(len(X[0])):
       result[j][i] = X[i][j]

for r in result:
   print(r)
```

OUTPUT:

```
[12, 4, 3]
[7, 5, 8]
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 10 **RegNo:**

Date : **Name :**

Python Program to Multiply Two Matrices

AIM:

To write a Python Program for Multiplying Two Matrices.

PROGRAM:

```
X = [[12,7,3],
    [4 ,5,6],
    [7 ,8,9]]
# 3x4 matrix
Y = [[5,8,1,2],
    [6,7,3,0],
    [4,5,9,1]]
# result is 3x4
result = [[0,0,0,0],
          [0,0,0,0],
          [0,0,0,0]]

for i in range(len(X)):
   for j in range(len(Y[0])):
       for k in range(len(Y)):
           result[i][j] += X[i][k] * Y[k][j]
for r in result:
   print(r)
```

OUTPUT:

```
[114, 160, 60, 27]
[74, 97, 73, 14]
[119, 157, 112, 23]
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 11 **RegNo:**

Date : **Name :**

Python Program to Check Whether a String is Palindrome or Not

AIM:

To write a Python Program for Checking Whether a String is Palindrome or Not

PROGRAM:

```
x = "malayalam"
w = ""
for i in x:
    w= i + w  #mal

if (x == w):
    print("Yes it is palindrome")
else:
    print("No,  it is NOT palindrome")
```

OUTPUT:

Yes it is palindrome

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 12 **RegNo:**

Date : **Name :**

Python Program to Sort Words in Alphabetic Order

AIM:

To write a Python Program for Sorting Words in Alphabetic Order

PROGRAM:

```
my_str = input("Enter a string: ")
words = [word.lower() for word in my_str.split()]
words.sort()
print("The sorted words are:")
for word in words:
  print(word)
```

OUTPUT:

```
Enter a string: I love Python an easy language to code
The sorted words are:
an
code
easy
i
language
love
python
to
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 13 **RegNo:**

Date : **Name :**

Python Program for Inheritance.

AIM:

To write a program for implementing inheritance Python

PROGRAM:

```
class addition:
 def __init__(self,x,y):
   self.x=x
   self.y=y
 def addi(self,x,y):
   return (x+y)

#object creation process
a=int (input("Enter a first Number: "))
b=int (input("Enter a second Number: "))
obj =addition(a,b)
print("Addition of two numbers : ",obj.addi(a,b))
```

OUTPUT:

```
Enter a first Number: 5
Enter a second Number: 7
Addition of two numbers :  12
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 14 **RegNo:**

Date : **Name :**

Python Program for Operator overloading.

AIM:

Python program To implement Operator overloading.

PROGRAM:

```
class A:
    def __init__(self, a):
        self.a = a

    # adding two objects
    def __add__(self, o):
        return self.a + o.a

ob1 = A(1)
ob2 = A(2)
ob3 = A("Python")
ob4 = A("overloading")

print(ob1 + ob2)
print(ob3 + ob4)
```

OUTPUT:

```
3
Pythonoverloading
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 15 **RegNo:**

Date : **Name :**

Python Program for Exception Handling.

AIM:

To write a Python Program for implementing Exception Handling.

PROGRAM:

```
a=int (input("Enter a first Number: "))
b=int (input("Enter a second Number: "))
try:
  k = a//b
  print(k)

except ZeroDivisionError:
  print("Can't divide by zero")
else :
   print(k)
finally:
    print('Program closed')
```

OUTPUT:

```
Enter a first Number: 5
Enter a second Number: 0
Can't divide by zero
Program closed
```

RESULT:

Thus the program has been verified and completed successfully.

EX.No. : 16 **RegNo:**

Date : **Name :**

Program to read and write text and numbers

Aim:

To write a python program to read and write text and numbers

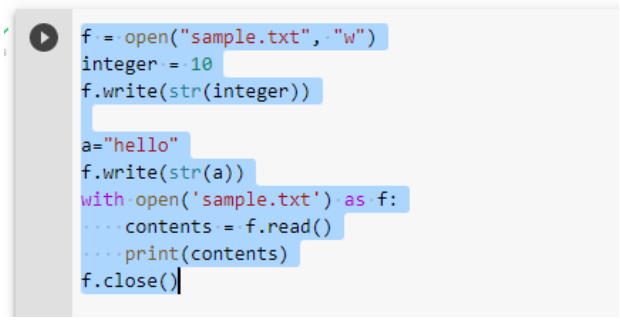
Program:

```
f = open("sample.txt", "w")
integer = 10
f.write(str(integer))

a="hello"
f.write(str(a))
with open('sample.txt') as f:
    contents = f.read()
    print(contents)
f.close()
```

output

Input:



```
f = open("sample.txt", "w")
integer = 10
f.write(str(integer))

a="hello"
f.write(str(a))
with open('sample.txt') as f:
    contents = f.read()
    print(contents)
f.close()
```

Output:

```
10hello
```

Result:

Thus the above program has been executed successfully.

EX.No. : 17 **RegNo:**

Date : **Name :**

Using a List to Find the Median of a Set of Numbers Program using sorting and searching

Aim:

To write a program using a List to Find the Median of a Set of Numbers Program using sorting and searching]

Program:

```
def get_median(ls):
    # sort the list
    ls_sorted = ls.sort()
    # find the median
    if len(ls) % 2 != 0:
        # total number of values are odd
        # subtract 1 since indexing starts at 0
        m = int((len(ls)+1)/2 - 1)
        return ls[m]
    else:
        m1 = int(len(ls)/2 - 1)
        m2 = int(len(ls)/2)
        return (ls[m1]+ls[m2])/2
```

```
# create a list

ls = [3, 1, 4, 9, 2, 5, 3, 6]

# get the median

print(get_median(ls))
```

Screenshot:

Input:

```
def get_median(ls):
    # sort the list
    ls_sorted = ls.sort()
    # find the median
    if len(ls) % 2 != 0:
        # total number of values are odd
        # subtract 1 since indexing starts at 0
        m = int((len(ls)+1)/2 - 1)
        return ls[m]
    else:
        m1 = int(len(ls)/2 - 1)
        m2 = int(len(ls)/2)
        return (ls[m1]+ls[m2])/2
# create a list
ls = [3, 1, 4, 9, 2, 5, 3, 6]
# get the median
print(get_median(ls))
```

```
3.5
```

Output:

```
3.5
```

Result:

Thus the above program has been executed successfully.

EX.No. : 18 **RegNo:**

Date : **Name :**

CASE STUDY Example for Dictionary, list String Literals

Aim:

To write a python Program to implement case study for given scenario.

Program:

```
import random

hedges=("Please tell me more","Many of my patient tell me the same thing","Please continue
")

quantifiers=("why do you say that","you seem to think that","Can you explain why")

replacements={"I":"you","me":"you","my":"your","we":"you","us":"you","mine":"yours"}

def reply(sentence):

  probablity=random.randint(1,4)

  if probablity==1:

    return random.choice(hedges)

  else:

    return random.choice(quantifiers)+changePerson(sentence)

def changePerson(sentence):

 words=sentence.split()

 replyWords=[]

 for word in words:

   replyWords.append(replacements.get(word,word))
```

```
  return "".join(replyWords)
def main():
   print("good morning, I hope well today")
   print("what can I do for you")
   sentence=input("\n>>")

   while sentence.upper() !="QUIT":
     print(reply(sentence))
     sentence=input("\n>>")
   print("have a nice day")
main()
```

Screenshot:

Input:

```
import random
hedges=("Please tell me more","Many of my patient tell me the same thing","Please continue")
quantifiers=("why do you say that","you seem to think that","Can you explain why")
replacements={"I":"you","me":"you","my":"your","we":"you","us":"you","mine":"yours"}
def reply(sentence):
   probablity=random.randint(1,4)
   if probablity==1:
      return random.choice(hedges)
   else:
     return random.choice(quantifiers)+changePerson(sentence)
def changePerson(sentence):
  words=sentence.split()
  replyWords=[]
  for word in words:
    replyWords.append(replacements.get(word,word))
  return "".join(replyWords)
def main():
   print("good morning, I hope well today")
   print("what can I do for you")
   sentence=input("\n>>")

   while sentence.upper() !="QUIT":
     print(reply(sentence))
     sentence=input("\n>>")
   print("have a nice day")

main()
```

Output:

```
good morning, I hope well today
what can I do for you

>>good
you seem to think thatgood

>>QUIT
have a nice day
```

Result:

Thus the above program has been executed successfully.

EX.No. : 19 **RegNo:**

Date : **Name :**

Program using classes and methods

Aim:

To write the code for creating classes and methods.

Program:

```
class BankAccount:
    def __init__(self, owner, balance=0):
        self.owner = owner
        self.balance = balance

    def deposit(self, amount):
        if amount > 0:
            self.balance += amount
            print(f"Deposited ${amount}")
        else:
            print("Invalid deposit amount")

    def withdraw(self, amount):
        if amount > 0 and amount <= self.balance:
            self.balance -= amount
            print(f"Withdrew ${amount}")
        else:
            print("Invalid or insufficient funds")

    def display_balance(self):
        print(f"{self.owner}'s account balance: ${self.balance}")
```

```
# Sample usage
account1 = BankAccount("Alice", 100)

account1.display_balance()
account1.deposit(50)
account1.withdraw(30)
account1.withdraw(150)
account1.display_balance()
```

Output:

```
Alice's account balance: $100
Deposited $50
Withdrew $30
Invalid or insufficient funds
Alice's account balance: $120
```

Result:

Thus the above program has been executed successfully.

EX.No. : 20 **RegNo:**

Date : **Name :**

Program using polymorphism, abstract classes

Aim

To write a Python program that demonstrates polymorphism using abstract classes and abstract methods, where different subclasses provide their own implementation of a common abstract method.

Program

```
from abc import ABC, abstractmethod
# Abstract class
class Shape(ABC):
    # Abstract method (must be implemented by subclasses)
    @abstractmethod
    def draw(self):
        pass

    # Concrete method
    def display(self):
        print("Displaying shape details...")

# Subclass 1
class Circle(Shape):
    def draw(self):
        print("Drawing a Circle")

# Subclass 2
class Rectangle(Shape):
    def draw(self):
```

```
        print("Drawing a Rectangle")

# Subclass 3
class Triangle(Shape):
    def draw(self):
        print("Drawing a Triangle")

# Main program
def main():
    # Polymorphism: the same method name works differently for each object
    shapes = [Circle(), Rectangle(), Triangle()]

    for shape in shapes:
        shape.draw()      # Calls the subclass-specific method
        shape.display()   # Calls the common method from abstract class
        print()           # Blank line for clarity

if __name__ == "__main__":
    main()
```

Output

```
Drawing a Circle
Displaying shape details...

Drawing a Rectangle
Displaying shape details...

Drawing a Triangle
Displaying shape details...
```

Result:

Thus the above program has been executed successfully.