ARIGNAR ANNA GOVERNMENT ARTS COLLEGE

CHEYYAR – 604 407

DEPARTMENT OF COMPUTER APPLICATION

BONAFIDE CERTIFICATE

Certify that the record work done by_____ of III-BCA with the Register No_____ in the laboratory during the academic year 2022-2023.

Staff in-charge **Head of the Department**

Submitted for the university practical examination held on _____ in the department of Computer Application, Arignar Anna Government Arts College, Cheyyar

Date _____ Examiner

1.

2.

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EX NO : 1	AREA AND PERIMETER OF A CIRCLE
DATE:	

AIM:

To write a python program to find Area and Perimeter of a Circle.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: Initialize value of Pi.

STEP 3: Get input from the user.

STEP 4: Calculate Area and Perimeter of a Circle.

STEP 5: Stop the Program.

Program code:

```
pi= 3.14

R = float(input("enter radius of circle:"))

area = (pi*R*R)

perimeter = (2*pi*R)

print("the area of the circle is:", area)

print("the perimeter of the circle:", perimeter)
```

Output:

enter radius of circle:7

the area of the circle is: 153.86

the perimeter of the circle: 43.96

Result:

Thus the program for area and perimeter of the circle was executed successfully.

EX NO : 2	FIBONACCI SERIES
DATE:	

AIM:

To write a python program to generate Fibonacci Series.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: Input the number of values to generate the Fibonacci sequence.

STEP 3: Initialize the count = 0,n1=0 and n2=1.

STEP 4: if nterms <=0

STEP 5: Print ”error” to enter the valid positive interger.

STEP 6: if nterms=1, then it print n1 value.

STEP 7: while count <nterms: , print(n1).

STEP 8: nth = n1+n2

STEP 9: update the variable, n1=n2 , n2=nth and so on.

STEP 10: stop the program.

Program code:

```
nterms=int(input("How Many Terms?"))
n1,n2=0,1
count=0
if nterms<=0:
 print("Please Enter a Positive Integer")
elif nterms==1:
   print("Fibonacci Sequence upto",nterms,":")
   print(n1)
else:
       print("Fibonacci Series:")
       while count<nterms:
          print(n1)
          nth=n1+n2
          n1=n2
          n2=nth
          count+=1
```

Output:

How Many Terms?7

Fibonacci Series:

0

1

1

2

3

5

8

Result:

Thus the program to generate Fibonacci series in python has been executed successfully.

EX NO : 3	GCD OF TWO NUMBERS
DATE:	

AIM:

To write a python program to find GCD of two numbers.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: Define the GCD functions(x,y).

STEP 3: gcd_fun(y,x%y)

STEP 4: Get the input of two numbers.

STEP 5: GCD function prints the GCD of two numbers taken as input.

STEP 6: Stop the Program.

Program code:

```
def gcd_fun(x,y):
    if(y==0):
        return x
    else:
        return gcd_fun(y,x%y)
x=int(input("Enter the first Number:"))
y=int(input("Enter the Second Number:"))
num=gcd_fun(x,y)
print("GCD of two Numbers is:")
print(num)
```

OUTPUT:

Enter the first Number:24

Enter the Second Number:48

GCD of two Numbers is:

24

Result:

Thus the program for GCD of two numbers in Python has been executed Successfully.

EX NO : 4	FIRST n PRIME NUMBERS
DATE:	

AIM:

To write a python program to generate first n Prime numbers.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: First, get the range as input.

STEP 3: Then, use for loop to iterate the numbers from 1 to range.

STEP 4: Then check for each number to be a prime number.

STEP 5: If it is a Prime number, print it.

STEP 6: If it is not a Prime number, then get out from the loop.

STEP 6: Stop the Program.

PROGRAM CODE:

```
numr = int (input("Enter Range:"))
print("Prime numbers:",end =" ")
for n in range(1,numr):
   for i in range(2,n):
    if(n%i==0):
       break
   else:
       print(n,end=" ")
```

OUTPUT:

Enter Range:20

Prime numbers: 1 2 3 5 7 11 13 17 19

Result:

Thus the program to generate n Prime numbers in Python has been executed Successfully.

EX NO : 5	SUM OF SQUARES OF n NATURAL NUMBERS
DATE:	

AIM:

To write a python program to find the sum of squares of n Natural numbers.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: First, take the number num as input.

STEP 3: Initialize sum to 0.

STEP 4: Then use a for loop to iterate the numbers from 1 to num+1.

STEP 5: Then squares of num in variable(i) is summed up and get printed in sum variable.

STEP 6: Stop the Program.

PROGRAM CODE:

```
num=int(input("Enter Value of num:"))
sum=0
for i in range(1,num+1):
    sum=sum+(i*i)
    print("Sum of Squares=",sum)
```

OUTPUT:

Enter Value of num:5

Sum of Squares= 1

Sum of Squares= 5

Sum of Squares= 14

Sum of Squares= 30

Sum of Squares= 55

Result:

Thus the program for sum of squares of n natural numbers in python has been executed Successfully.

EX NO : 6	SUM OF THE ELEMENTS IN AN ARRAY
DATE:	

AIM:

To write a python program to find the sum of the Elements in an Array.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: Declare and initialize an Array.

STEP 3: Declare sum variable to calculate the sum of the array.

STEP 4: Initialize sum to 0.

STEP 5: Loop through the array and each element of the array.

STEP 6: Add and store in variable sum using this statement, sum=sum+arr[i].

STEP 7: Print the sum Value.

STEP 8: Stop the Program.

PROGRAM CODE:

```
num=[]
sum=0
print(end="Enter the value of n:")
n=int(input())
print(end="Enter"+str(n)+"Numbers:")
for i in range(n):
   num.insert(i,int(input()))
for i in range(n):
   sum=sum+num[i]
print("\nSum of"+str(n)+"Numbers="+str(sum))
```

OUTPUT:

Enter the value of n:4

Enter4Numbers:56

65

32

89

Sum of4Numbers=242

Result:

Thus the program for sum of the elements in an array in python has been executed successfully.

EX NO : 7	LARGEST ELEMENT IN THE ARRAY
DATE:	

AIM:

To write a python program to find largest element in the array.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: Create a local variable max to store the maximum among the list.

STEP 3: Initialize max to value of first element in an array,to start the comparison.

STEP 4: Compare the current element with max.

STEP 5: If the current element is greater than max, then replace the value of max with the current element.

STEP 6: In the end, return and print the value of the largest element of array and store it in max.

STEP 7: Stop the Program.

PROGRAM CODE:

```
import array as ar
def MaxofArray(arr):
    max=a[0]
    n = len(arr)
    for i in range(n):
        if(max<a[i]):
            max=a[i]
    return max
a = ar.array('i',[10,21,34,45,32])
print("Max of the array is:",MaxofArray(a))
```

OUTPUT:

Max of the array is: 45

Result:

Thus the program for largest element in the array in python has been executed successfully.

EX NO : 8	STRING IS PALINDROME OR NOT
DATE:	

AIM:

To write a python program to check whether the given string is palindrome or not.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: Enter String as an input.

STEP 3: Using string slicing to reverse the string.

STEP 4: Compare it back to the original string.

STEP 5: Then Display the result.

STEP 6: Stop the Program.

PROGRAM CODE:

```
string= input("Enter String:")
if(string==string[::-1]):
    print("The String is a Palindrome")
else:
    print("The String isn't a Palindrome")
```

OUTPUT:

Enter String:racecar

The String is a Palindrome

Run again:

Enter String:Blockchain

The String isn't a Palindrome

Result:

Thus the python program to check whether the string is palindrome or not was executed successfully.

EX NO : 9	STORE STRINGS IN A LIST AND PRINT THEM
DATE:	

AIM:

To write a python program to store string in a list and Print them.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: Collect String inputs using input() function.

STEP 3: Store the Strings in a Variable.

STEP 4: If we need to store more strings in a list, then use append() function.

STEP 5: Type y (or) n to continue or to stop entering the value in a list.

STEP 6: Print the variables using index value.

STEP 7: Stop the Program.

PROGRAM CODE:

```
cont="Y"
myList=[]
while cont.upper()=="Y":
    myStr=input("Enter a String:")
    myList.append(myStr)
    cont=input("Do you want to Continue(Y/N)?")
print("\n\nList elements are\n")
n=len(myList)
for i in range(n):
    print(myList[i])
```

OUTPUT:

Enter a String:SUCCESS

Do you want to Continue(Y/N)?Y

Enter a String:BREEDS

Do you want to Continue(Y/N)?Y

Enter a String:SUCCESS

Do you want to Continue(Y/N)?N

List elements are

SUCCESS

BREEDS

SUCCESS

Result:

Thus the program to store and print the strings in a list in python has been executed successfully.

EX NO : 10	LENGTH OF A LIST,REVERSE IT,COPY IT AND THEN CLEAR IT
DATE:	

AIM:

To write a python program to find the length of the list, reverse the list, copy it and clear it.

ALGORITHM:

STEP 1: Start the Python IDLE.

STEP 2: Get String inputs using input() function.

STEP 3: Store the Strings in a Variable.

STEP 4: If we need to store more strings in a list, then use append() function.

STEP 5: Use len() function to get the length of the string.

STEP 6: Using the operator(::) followed by -1 i.e. ::-1 in the list variable to get reverse of the string.

STEP 7: Using built-in function copy and clear to copy the contents in the list and clear to remove the contents in the list.

STEP 7: Stop the Program.

PROGRAM CODE:

```
n=int(input("How many elements in a list?"))
myList=[]
for i in range(n):
    myVal=int(input("Enter list element are:"))
    myList.append(myVal)
print("The List element are:")
for i in range(n):
        print(myList[i],end=" ")
print("\n The Length of the List is:",len(myList))
myList1=myList[::-1]
print("The reverse of the list is:",myList1)
print("The copy of the list is:",myList.copy())
print("The list after clear is:",myList.clear())
```

OUTPUT:

How many elements in a list?5

Enter list element are:12

Enter list element are:14

Enter list element are:18

Enter list element are:97

Enter list element are:65

The List element are:

12 14 18 97 65

The Length of the List is: 5

The reverse of the list is: [65, 97, 18, 14, 12]

The copy of the list is: [12, 14, 18, 97, 65]

The list after clear is: None

Result:

Thus the python program to find the length of the list, reverse the list, copy and clear it in the list has been executed successfully.