**TABLE OF CONTENTS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.NO** | **DATE** | **INDEX** | **PAGE NO.** | **SIGN** |
| 1. |  | AREA AND PERIMETER OF A CIRCLE |  |  |
| 2. |  | FIBONACCI SERIES |  |  |
| 3. |  | GCD OF TWO NUMBERS |  |  |
| 4. |  | FIRST n PRIME NUMBERS |  |  |
| 5. |  | SUM OF SQUARES OF n NATURAL NUMBERS |  |  |
| 6. |  | SUM OF THE ELEMENTS IN THE  ARRAY |  |  |
| 7. |  | LARGEST ELEMENT IN THE ARRAY |  |  |
| 8. |  | GIVEN STRING IS PALINDROME OR NOT |  |  |
| 9. |  | STORE STRINGS IN A LIST AND PRINT THEM |  |  |
| 10. |  | LENGTH OF A LIST,REVERSE IT,COPY IT AND THEN CLEAR IT |  |  |

|  |  |
| --- | --- |
| **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.