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| 1. | **# This program prints Hello, world!**  print('Hello, world!')  **Output**  Hello, world! |
| 2. | **# This program adds two numbers provided by the user**  # Store input numbers  num1 = input('Enter first number: ')  num2 = input('Enter second number: ')  # Add two numbers  sum = float(num1) + float(num2)  # Display the sum  print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))  **Output**  Enter first number: 1.5  Enter second number: 6.3  The sum of 1.5 and 6.3 is 7.8 |
| 3. | **# Python Program to calculate the square root**  num = float(input('Enter a number: '))  num\_sqrt = num \*\* 0.5  print('The square root of %0.3f is %0.3f'%(num ,num\_sqrt))  **Output**  Enter a number: 8  The square root of 8.000 is 2.828 |
| 4. | # Python Program to convert temperature in celsius to fahrenheit  # Input is provided by the user in degree celsius  # take input from the user  celsius = float(input('Enter degree Celsius: '))  # calculate fahrenheit  fahrenheit = (celsius \* 1.8) + 32  print('%0.1f degree Celsius is equal to %0.1f degree Fahrenheit' %(celsius,fahrenheit))  **Output**  Enter degree Celsius: 37.5  37.5 degree Celsius is equal to 99.5 degree Fahrenheit |
| 5. | # Python program to check if the input number is odd or even.  # A number is even if division by 2 give a remainder of 0.  # If remainder is 1, it is odd number.  num = int(input("Enter a number: "))  if (num % 2) == 0:  print("{0} is Even".format(num))  else:  print("{0} is Odd".format(num))  **Output**  Enter a number: 43  43 is Odd |
| 6. | # Python program to find the largest number among the three input numbers  # take three numbers from user  num1 = float(input("Enter first number: "))  num2 = float(input("Enter second number: "))  num3 = float(input("Enter third number: "))  if (num1 > num2) and (num1 > num3):  largest = num1  elif (num2 > num1) and (num2 > num3):  largest = num2  else:  largest = num3  print("The largest number is",largest)  **Output**  Enter first number: -1  Enter second number: 0  Enter third number: -3  The largest number is 0.0 |
| 7. | # Python program to find the factorial of a number provided by the user.  # take input from the user  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: 7  The factorial of 7 is 5040 |
| 8 | # Program to display the Fibonacci sequence up to n-th term where n is provided by the user  # take input from the user  nterms = int(input("How many terms? "))  # first two terms  n1 = 0  n2 = 1  count = 2  # check if the number of terms is valid  if nterms <= 0:  print("Plese enter a positive integer")  elif nterms == 1:  print("Fibonacci sequence:")  print(n1)  else:  print("Fibonacci sequence:")  print(n1,",",n2,end=', ')  while count < nterms:  nth = n1 + n2  print(nth,end=' , ')  # update values  n1 = n2  n2 = nth  count += 1  Output  How many terms? 10  Fibonacci sequence:  0, 1, 1, 2, 3, 5, 8, 13, 21, 34, |
| 9 | # Python program to find the sum of natural numbers up to n where n is provided by user  # take input from the user  num = int(input("Enter a number: "))  if num < 0:  print("Enter a positive number")  else:  sum = 0  # use while loop to iterate un till zero  while(num > 0):  sum += num  num -= 1  print("The sum is",sum) |
|  | # Program to add two matrices using nested loop  X = [[12,7,3],  [4 ,5,6],  [7 ,8,9]]  Y = [[5,8,1],  [6,7,3],  [4,5,9]]  result = [[0,0,0],  [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[i][j] = X[i][j] + Y[i][j]  for r in result:  print(r)  Output  [17, 15, 4]  [10, 12, 9]  [11, 13, 18]  # Program to add two matrices  # using list comprehension  X = [[12,7,3],  [4 ,5,6],  [7 ,8,9]]  Y = [[5,8,1],  [6,7,3],  [4,5,9]]  result = [[X[i][j] + Y[i][j] for j in range(len(X[0]))] for i in range(len(X))]  for r in result:  print(r) |
|  | # Program to transpose a matrix using nested loop  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]  # Program to transpose a matrix  # using list comprehension  X = [[12,7],  [4 ,5],  [3 ,8]]  result = [[X[j][i] for j in range(len(X))] for i in range(len(X[0]))]  for r in result:  print(r) |
|  | # Program to sort alphabetically the words form a string provided by the user  # take input from the user  my\_str = input("Enter a string: ")  # breakdown the string into a list of words  words = my\_str.split()  # sort the list  words.sort()  # display the sorted words  for word in words:  print(word)  Enter a string: Hello this Is an Example With cased letters  Example  Hello  Is  With  an  cased  letters  this |
|  | # Python program to display calendar of given month of the year  # import module  import calendar  # ask of month and year  yy = int(input("Enter year: "))  mm = int(input("Enter month: "))  # display the calendar  print(calendar.month(yy,mm))  Enter year: 2014  Enter month: 11  November 2014  Mo Tu We Th Fr Sa Su  1 2  3 4 5 6 7 8 9  10 11 12 13 14 15 16  17 18 19 20 21 22 23  24 25 26 27 28 29 30 |
|  | # Program make a simple calculator that can add, subtract, multiply and divide using functions  # define functions  def add(x, y):  """This function adds two numbers"""  return x + y  def subtract(x, y):  """This function subtracts two numbers"""  return x - y  def multiply(x, y):  """This function multiplies two numbers"""  return x \* y  def divide(x, y):  """This function divides two numbers"""  return x / y  # take input from the user  print("Select operation.")  print("1.Add")  print("2.Subtract")  print("3.Multiply")  print("4.Divide")  choice = input("Enter choice(1/2/3/4):")  num1 = int(input("Enter first number: "))  num2 = int(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))  else:  print("Invalid input") |