Python program to do arithmetical operations

1. # Store input numbers:
2. num1 = input('Enter first number: ')
3. num2 = input('Enter second number: ')
5. # Add two numbers
6. sum = float(num1) + float(num2)
7. # Subtract two numbers
8. min = float(num1) - float(num2)
9. # Multiply two numbers
10. mul = float(num1) \* float(num2)
11. #Divide two numbers
12. div = float(num1) / float(num2)
13. # Display the sum
14. **print**('The sum of {0} and {1} is {2}'.format(num1, num2, sum))
16. # Display the subtraction
17. **print**('The subtraction of {0} and {1} is {2}'.format(num1, num2, min))
18. # Display the multiplication
19. **print**('The multiplication of {0} and {1} is {2}'.format(num1, num2, mul))
20. # Display the division
21. **print**('The division of {0} and {1} is {2}'.format(num1, num2, div))

# Python program to solve quadratic equation

1. # import complex math module
2. **import** cmath
3. a = float(input('Enter a: '))
4. b = float(input('Enter b: '))
5. c = float(input('Enter c: '))
7. # calculate the discriminant
8. d = (b\*\*2) - (4\*a\*c)
10. # find two solutions
11. sol1 = (-b-cmath.sqrt(d))/(2\*a)
12. sol2 = (-b+cmath.sqrt(d))/(2\*a)
13. **print**('The solution are {0} and {1}'.format(sol1,sol2))

# Python program to swap two variables

1. # Python swap program
2. x = input('Enter value of x: ')
3. y = input('Enter value of y: ')
5. # create a temporary variable and swap the values
6. temp = x
7. x = y
8. y = temp
10. **print**('The value of x after swapping: {}'.format(x))
11. **print**('The value of y after swapping: {}'.format(y))

# Python program to generate a random number

1. **import** random
2. **print**(random.randint(100,500))

# Python program to convert kilometers to miles

1. # Collect input from the user
2. kilometers = float(input('How many kilometers?: '))
3. # conversion factor
4. conv\_fac = 0.621371
5. # calculate miles
6. miles = kilometers \* conv\_fac
7. **print**('%0.3f kilometers is equal to %0.3f miles' %(kilometers,miles))

# Python program to convert Celsius to Fahrenheit

1. # Collect input from the user
2. celsius = float(input('Enter temperature in Celsius: '))
4. # calculate temperature in Fahrenheit
5. fahrenheit = (celsius \* 1.8) + 32
6. **print**('%0.1f  Celsius is equal to %0.1f degree Fahrenheit'%(celsius,fahrenheit))

# Python program to display calendar

1. **import** calendar
2. # Enter the month and year
3. yy = int(input("Enter year: "))
4. mm = int(input("Enter month: "))
6. # display the calendar
7. **print**(calendar.month(yy,mm))

## **Python Program to Add Two Matrices**

1. X = [[1,2,3],
2. [4,5,6],
3. [7,8,9]]
5. Y = [[10,11,12],
6. [13,14,15],
7. [16,17,18]]
9. Result = [[0,0,0],
10. [0,0,0],
11. [0,0,0]]
12. # iterate through rows
13. **for** i **in** range(len(X)):
14. # iterate through columns
15. **for** j **in** range(len(X[0])):
16. result[i][j] = X[i][j] + Y[i][j]
17. **for** r **in** result:
18. **print**(r)

MULTIPLY

1. X = [[1,2,3],
2. [4,5,6],
3. [7,8,9]]
5. Y = [[10,11,12],
6. [13,14,15],
7. [16,17,18]]
9. Result = [[0,0,0],
10. [0,0,0],
11. [0,0,0]]
13. # iterate through rows of X
14. **for** i **in** range(len(X)):
15. **for** j **in** range(len(Y[0])):
16. **for** k **in** range(len(Y)):
17. result[i][j] += X[i][k] \* Y[k][j]
18. **for** r **in** result:
19. **print**(r)

TRANSPOSE

1. X = [[1,2],
2. [4,5],
3. [7,8]]
5. Result = [[0,0,0],
6. [0,0,0]]
8. # iterate through rows
9. **for** i **in** range(len(X)):
10. **for** j **in** range(len(X[0])):
11. result[j][i] = X[i][j]
13. **for** r **in** result:
14. **print**(r)

# Python Program to Sort Words in Alphabetic Order

1. my\_str = input("Enter a string: ")
2. # breakdown the string into a list of words
3. words = my\_str.split()
4. # sort the list
5. words.sort()
6. # display the sorted words
7. **for** word **in** words:
8. **print**(word)

[**next →**](https://www.javatpoint.com/python-condition-and-loops-programs)[**← prev**](https://www.javatpoint.com/python-sort-words-in-alphabetic-order)

**Python Program to Remove Punctuation from a String**

1. # define punctuation
2. punctuation = '''''!()-[]{};:'"\,<>./?@#$%^&\*\_~'''
3. # take input from the user
4. my\_str = input("Enter a string: ")
5. # remove punctuation from the string
6. no\_punct = ""
7. **for** char **in** my\_str:
8. **if** char **not** **in** punctuation:
9. no\_punct = no\_punct + char
10. # display the unpunctuated string
11. **print**(no\_punct)

## **Python Program to check if a Number is Positive, Negative or Zero**

1. num = float(input("Enter a number: "))
3. **if** num > 0:
4. **print**("{0} is a positive number".format(num))
5. **elif** num == 0:
6. **print**("{0} is zero".format(num))
7. **else**:
8. **print**("{0} is negative number".format(num))

# Python Program to Check if a Number is Odd or Even

1. num = int(input("Enter a number: "))
2. **if** (num % 2) == 0:
3. **print**("{0} is Even number".format(num))
4. **else**:
5. **print**("{0} is Odd number".format(num))

# Python Program to Check Leap Year

1. year = int(input("Enter a year: "))
2. **if** (year % 4) == 0:
3. **if** (year % 100) == 0:
4. **if** (year % 400) == 0:
5. **print**("{0} is a leap year".format(year))
6. **else**:
7. **print**("{0} is not a leap year".format(year))
8. **else**:
9. **print**("{0} is a leap year".format(year))
10. **else**:
11. **print**("{0} is not a leap year".format(year))

# Python Program to Check Prime Number

1. num = int(input("Enter a number: "))
3. **if** num > 1:
4. **for** i **in** range(2,num):
5. **if** (num % i) == 0:
6. **print**(num,"is not a prime number")
7. **print**(i,"times",num//i,"is",num)
8. **break**
9. **else**:
10. **print**(num,"is a prime number")
12. **else**:
13. **print**(num,"is not a prime number")

# Python Program to Print all Prime Numbers between an Interval

1. #Take the input from the user:
2. lower = int(input("Enter lower range: "))
3. upper = int(input("Enter upper range: "))
5. **for** num **in** range(lower,upper + 1):
6. **if** num > 1:
7. **for** i **in** range(2,num):
8. **if** (num % i) == 0:
9. **break**
10. **else**:
11. **print**(num)

# Python Program to Find the Factorial of a Number

1. num = int(input("Enter a number: "))
2. factorial = 1
3. **if** num < 0:
4. **print**("Sorry, factorial does not exist for negative numbers")
5. **elif** num == 0:
6. **print**("The factorial of 0 is 1")
7. **else**:
8. **for** i **in** range(1,num + 1):
9. factorial = factorial\*i
10. **print**("The factorial of",num,"is",factorial)

[**next →**](https://www.javatpoint.com/python-print-the-fibonacci-sequence)[**← prev**](https://www.javatpoint.com/pyhton-factorial-number)

**Python Program to Display the multiplication Table**

1. num = int(input("Show the multiplication table of? "))
2. # using for loop to iterate multiplication 10 times
3. **for** i **in** range(1,11):
4. **print**(num,'x',i,'=',num\*i)

# Python Program to Print the Fibonacci sequence

1. nterms = int(input("How many terms you want? "))
2. # first two terms
3. n1 = 0
4. n2 = 1
5. count = 2
6. # check if the number of terms is valid
7. **if** nterms <= 0:
8. **print**("Plese enter a positive integer")
9. **elif** nterms == 1:
10. **print**("Fibonacci sequence:")
11. **print**(n1)
12. **else**:
13. **print**("Fibonacci sequence:")
14. **print**(n1,",",n2,end=', ')
15. **while** count < nterms:
16. nth = n1 + n2
17. **print**(nth,end=' , ')
18. # update values
19. n1 = n2
20. n2 = nth
21. count += 1

# Python Program to Check Armstrong Number

1. num = int(input("Enter a number: "))
2. sum = 0
3. temp = num
5. **while** temp > 0:
6. digit = temp % 10
7. sum += digit \*\* 3
8. temp //= 10
10. **if** num == sum:
11. **print**(num,"is an Armstrong number")
12. **else**:
13. **print**(num,"is not an Armstrong number")

[**next →**](https://www.javatpoint.com/python-sum-natural-numbers)[**← prev**](https://www.javatpoint.com/python-check-armstrong-number)

**Python Program to Find Armstrong Number between an Interval**

1. lower = int(input("Enter lower range: "))
2. upper = int(input("Enter upper range: "))
4. **for** num **in** range(lower,upper + 1):
5. sum = 0
6. temp = num
7. **while** temp > 0:
8. digit = temp % 10
9. sum += digit \*\* 3
10. temp //= 10
11. **if** num == sum:
12. **print**(num)

[**next →**](https://www.javatpoint.com/python-function-programs)[**← prev**](https://www.javatpoint.com/python-armstrong-number)

**Python Program to Find the Sum of Natural Numbers**

1. num = int(input("Enter a number: "))
3. **if** num < 0:
4. **print**("Enter a positive number")
5. **else**:
6. sum = 0
7. # use while loop to iterate un till zero
8. **while**(num > 0):
9. sum += num
10. num -= 1
11. **print**("The sum is",sum)
12. # define functions
13. **def** add(x, y):
14. """This function adds two numbers""
15. return x + y
16. def subtract(x, y):
17. """This function subtracts two numbers"""
18. return x - y
19. def multiply(x, y):
20. """This function multiplies two numbers"""
21. return x \* y
22. def divide(x, y):
23. """This function divides two numbers"""
24. **return** x / y
25. # take input from the user
26. **print**("Select operation.")
27. **print**("1.Add")
28. **print**("2.Subtract")
29. **print**("3.Multiply")
30. **print**("4.Divide")
32. choice = input("Enter choice(1/2/3/4):")
34. num1 = int(input("Enter first number: "))
35. num2 = int(input("Enter second number: "))
37. **if** choice == '1':
38. **print**(num1,"+",num2,"=", add(num1,num2))
40. **elif** choice == '2':
41. **print**(num1,"-",num2,"=", subtract(num1,num2))
43. **elif** choice == '3':
44. **print**(num1,"\*",num2,"=", multiply(num1,num2))
45. **elif** choice == '4':
46. **print**(num1,"/",num2,"=", divide(num1,num2))
47. **else**:
48. **print**("Invalid input")