1. What is the output of the following if statement

a, b = 12, 5

if a + b:

print('True')

else:

print('False')

**o/p:** True

1. Given the nested if-else structure below, what will be the value of x after code execution completes

x = 0

a = 0

b = -5

if a > 0:

if b < 0:

x = x + 5

elif a > 5:

x = x + 4

else:

x = x + 3

else:

x = x + 2

print(x)

**o/p:** 2

1. Given the nested if-else below, what will be the value x when the code executed successfully

x = 0

a = 5

b = 5

if a > 0:

if b < 0:

x = x + 5

elif a > 5:

x = x + 4

else:

x = x + 3

else:

x = x + 2

print(x)

**o/p:** 3

1. A school has following rules for grading system:  
   a. Below 25 - F  
   b. 25 to 45 - E  
   c. 45 to 50 - D  
   d. 50 to 60 - C  
   e. 60 to 80 - B  
   f. Above 80 - A  
   Ask user to enter marks and print the corresponding grade.

**CODE:**

def grading\_system(marks):

  if marks < 25:

    print("F")

  elif marks <45:

    print("E")

  elif marks <50:

    print("D")

  elif marks <60:

    print("C")

  elif marks <80:

    print("B")

  elif marks <100:

    print("A")

  else:

    print("Invalid input")

marks = int(input("Enter the marks:"))

grading\_system(marks)

**OR**

def calculate\_grade(marks):

    if marks < 25:

        return "F"

    elif marks >= 25 and marks < 45:

        return "E"

    elif marks >= 45 and marks < 50:

        return "D"

    elif marks >= 50 and marks < 60:

        return "C"

    elif marks >= 60 and marks < 80:

        return "B"

    elif marks >= 80:

        return "A"

    else:

        return "Invalid input"

marks = float(input("Enter the marks: "))

grade = calculate\_grade(marks)

print("Your grade is:", grade)

Note: Both code giving same answer.

1. A shop will give discount of 10% if the cost of purchased quantity is more than 1000.  
   Ask user for quantity  
   Suppose, one unit will cost 100.  
   Judge and print total cost for user.

**CODE:**

def calculate\_total\_cost(quantity, unit\_cost=100):

    total\_cost = quantity \* unit\_cost

    if total\_cost > 1000:

        discount = 0.1 \* total\_cost

        total\_cost -= discount

    return total\_cost

quantity = int(input("Enter the quantity: "))

total\_cost = calculate\_total\_cost(quantity)

print("Total cost for the user:", total\_cost)

**OR**

unit\_cost = 100

quantity = int(input("Enter the quantity: "))

total\_cost = quantity \* unit\_cost

if total\_cost > 1000:

    discount = 0.1 \* total\_cost

    total\_cost -= discount

print("Total cost for the user:", total\_cost)

1. Write a program to print absolute value of a number entered by user. E.g.-  
   INPUT: 1        OUTPUT: 1  
   INPUT: -1        OUTPUT: 1

**CODE:**

num = float(input("Enter a number: "))

if num < 0:

    absolute\_value = -num

else:

    absolute\_value = num

print("Absolute value:", absolute\_value)

1. Write a Python program that accepts a string and calculate the number of digits and letters.

Sample Data : Python 3.2  
Expected Output :  
Letters 6  
Digits 2

**CODE:**

string = input("Enter a string: ")

num\_letters = 0

num\_digits = 0

for char in string:

    if char.isdigit():

        num\_digits += 1

    elif char.isalpha():

        num\_letters += 1

print("No. of Letters:", num\_letters)

print("No. of Digits:", num\_digits)

1. Write a Python program to check whether an alphabet is a vowel or consonant.   
   Expected Output:

Input a letter of the alphabet: k

k is a consonant.

**CODE:**

Letter = input("Enter a letter of the alphabet: ")

if Letter in ['a','e','i','o','u']:

    print(Letter,"is a vowel")

else:

    print(Letter,"is a consonant")

1. Write a Python program to check a triangle is equilateral, isosceles or scalene. [Go to the editor](https://www.w3resource.com/python-exercises/python-conditional-statements-and-loop-exercises.php#EDITOR)  
   Note :  
   An equilateral triangle is a triangle in which all three sides are equal.  
   A scalene triangle is a triangle that has three unequal sides.  
   An isosceles triangle is a triangle with (at least) two equal sides.  
   Expected Output:

Input lengths of the triangle sides:

x: 6

y: 8

z: 12

Scalene triangle

**CODE:**

Side1= int(input("Enter the first digit: "))

Side2= int(input("Enter the second digit: "))

Side3= int(input("Enter the third digit: "))

if Side1==Side2==Side3:

    print("Triangle is equilateral")

elif Side1==Side2 or Side1==Side3 or Side2==Side3:

    print("Triangle is isosceles")

else:

    print("Triangle is scalene")

1. Write an If elif else condition for finding the largest number in 3 numbers.

**CODE:**

num1 = float(input("Enter the first number: "))

num2 = float(input("Enter the second number: "))

num3 = float(input("Enter the 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)