Practical 2: Programs on If/Else

# Aim: Write programs on if/else statement

# Write a python program to check whether the number entered is odd or even

## Source Code:

# Get input from user

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

# Check if number is even or odd

if num%2 == 0:

print("Number is even")

else:

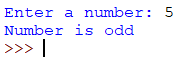
print("Number is odd")

## Output:

### Case 1: Input is even



### Case 2: Input is odd



# Write a python program to check whether number entered is divisible by 3 or not.

## Source Code:

# Get input from user

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

# Check if number is divisible by 3

if num%3 == 0:

print("Number is divisible by 3")

else:

print("Number is not divisible by 3")

## Output:

### Case 1: Input is divisible by 3



### Case 2: Input is not divisible by 3



# Write a python program to check whether the number is divisible by 3 or 7 or both

## Source Code:

# Get input from user

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

# Check if number is divisible by 3 and 7

if (num % 3 == 0) and (num % 7 == 0):

print("Number is divisible by 3 and 7")

# Check if number is divisible by 3

elif num % 3 == 0:

print("Number is divisible by 3")

# Check if number is divisible by 7

elif num % 7 == 0:

print("Number is divisible by 7")

# Number is not divisible by 3 or 7

else:

print("Number is not divisible by 3 or 7")

## Output:

### Case 1: Input is divisible by only 3



### Case 2: Input is divisible by only 7



### Case 3: Input is divisible by 3 and 7



### Case 4: Input is not divisible by 3 or 7



# Write a python program to enter a 4-digit number and check whether it is a leap year or not

## Source Code:

# Get input from user

year = int(input("Enter a year: "))

# Check if input year is a leap year

if year % 400 == 0 or year % 4 == 0 and year % 100!= 0:

print("It is a leap year")

else:

print("It is not a leap year")

## Output:

### Case 1: Input year is a leap year



### Case 2: Input is not a leap year



# Write a python program to check whether the number entered is positive, negative, or zero

## Source Code:

# Get input from user

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

# Check if input is negative

if num < 0:

print("Number is negative")

# Check if input is positive

elif num > 0:

print("Number is positive")

# Input is zero

else:

print("Number is zero")

## Output:

### Case 1: Input is negative



### Case 2: Input is zero



### Case 3: Input is positive



# Write a python program to grade the students in an academic institution according to the following groups

|  |  |
| --- | --- |
| **Marks** | **Grade** |
| 80 or above | Honors |
| 60 to 79 | First |
| 50 to 59 | Second |
| 40 to 49 | Third |
| Below 40 | Fail |

## Source Code:

# Get marks input from student

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

# Check if marks are 80 or above

if marks >= 80:

print("Grade: Honors")

# Check if marks are 60 or above

# (Not 80 or above if this elif is executed)

elif marks >= 60:

print("Grade: First")

# Check if marks are 50 or above

# (Not 60 or above if this elif is executed)

elif marks >= 50:

print("Grade: Second")

# Check if marks are 40 or above

# (Not 50 or above if this elif is executed)

elif marks >= 40:

print("Grade: Third")

# Marks are below 40

else:

print("Grade: Fail")

## Output:

### Case 1: Student has scored 80 or above



### Case 2: Student has scored between 60 to 79 (60 inclusive)



### Case 3: Student has scored between 50 to 59 (50 inclusive)



### Case 4: Student has scored between 40 to 59 (40 inclusive)



### Case 5: Student has scored below 40



# Admission to a professional course is subject to the following conditions:

a. Marks in Mathematics >= 60

b. Marks in Physics >= 50

c. Marks in Chemistry >= 40

d. Total in all three subjects >= 200 or Total in Mathematics and Physics >= 150

Given the marks in all three subjects, write a program to process the applications to list the eligible candidates.

## Source Code:

# Get marks of Physics, Chemistry and Maths from candidate

maths = int(input("Enter marks in Maths: "))

phy = int(input("Enter marks in Physics: "))

chem = int(input("Enter marks in Chemistry: "))

# Check a, b, c and d and print whether candidate is eligible

if maths > 60 and phy > 50 and chem > 40 and (maths + phy + chem >= 200 or maths + phy >= 150):

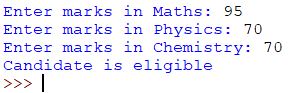
print("Candidate is eligible")

else:

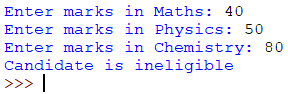
print("Candidate is ineligible")

## Output:

### Case 1: Candidate is eligible



### Case 2: Candidate is ineligible



# Write a python program to compute the real roots of a quadratic equation

## Source Code:

# Import math module to calculate square root

import math

# Get the values of a, b and c of quadratic equation from user

a = float(input("Enter value of a in equation: "))

b = float(input("Enter value of b in equation: "))

c = float(input("Enter value of c in equation: "))

# Calculate the determinant

determinant = (b\*\*2) - (4\*a\*c)

# Check if roots are real and calulate the answer

if determinant >= 0:

root1 = (-b - math.sqrt(determinant))/(2\*a)

root2 = (-b + math.sqrt(determinant))/(2\*a)

print("The roots are {0} and {1}".format(root1, root2))

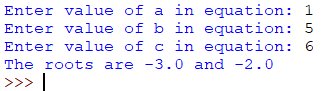
# Roots are not real

else:

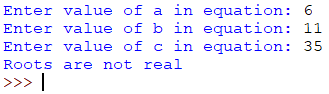
print("Roots are not real")

## Output:

### Case 1: Roots are real



### Case 2: Roots are not real



# Write a python program that will read the value of x and evaluate the following function

y = 1 for x > 0

y = 0 for x = 0

y = -1 for x < 0

## Source Code:

# Get input from user

x = int(input("Enter value of x: "))

# Print the value of y depending on value of x

if x > 0:

print("The value of y is 1")

elif x == 0:

print("The value of y is 0")

else:

print("The value of y is -1")

## Output:

### Case 1: x > 0



### Case 2: x = 0



### Case 3: x < 0



# Write a python program that will read the value of x and evaluate the following function

y = 4x + 100 for x < 40

y = 300 for x = 40

y = 4.5x + 150 for x > 40

## Source Code:

#Get input from user

x = int(input("Enter value of x: "))

# Calculate the value of y depending on value of x

if x < 40:

print("The value of y is", 4\*x + 100)

elif x == 40:

print("The value of y is", 300)

else:

print("The value of y is", 4.5\*x + 150)

## Output:

### Case 1: x < 40



### Case 2: x = 40



### Case 3: x > 40

