Conditional Statements - Decision Making

**if statements**

An if statement consists of a boolean expression followed by one or more statements.

**if...else statements**

An if statement can be followed by an optional else statement, which executes when the boolean expression is FALSE.

**nested if statements**

You can use one if or else if statement inside another if or else if statement(s).

**Indentation**

• Increase indent after a if statement or for statement.

• Maintain indent to indicate the scope of the block (which lines are affected by the if/for).

• Reduce indent back to the level of the if statement or for statement to indicate the end of the block.

• Blank lines are ignored - they do not affect indentation.

• Comments on a line by themselves are ignored with regard to indentation.

**Example-1:**

x = 5

if x < 10:

print 'Smaller’

if x > 20:

print 'Bigger'

**Example-2:**

x = 5

if x < 2 :

print 'small'

elif x < 10 :

print 'Medium'

else :

print 'LARGE'

print 'All done'

**Problem Statement:**

1. Write a program which takes two integers as input. Print whether the two numbers are equal, less than, or greater than the other.

2. Write pay computation to give the employee 1.5 times the hourly rate for hours worked above 40 hours (Input: hours and rate).

3. Write a program to prompt for a score between 0.0 and 1.0. If the score is out of range, print an error message. If the score is between 0.0 and 1.0, print a grade using the following table:

>= 0.9 A

>= 0.8 B

>= 0.7 C

>= 0.6 D

< 0.6 F

4. Write a program which takes temperature as input and also input its type (Centigrade or Fahrenheit). Convert it to other format.

5. Write a program which takes input of a number and check whether it is positive or negative.

6. Write a program which takes input of a number and check whether it is even or odd.

7. Write a program which takes three numbers as input find maximum of three and minimum of the three.

8. Write pay program using try and except so that your program handles non-numeric input gracefully by printing a message and exiting the program. The following shows two executions of the program:

Enter Hours: 20

Enter Rate: nine

Error, please enter numeric input

Enter Hours: forty

Error, please enter numeric input

9. Write a program to check whether a number is Armstrong or not.

Solutions:

1

x = input("Enter 1st number:")

y = input("Enter 2nd number:")

if x == y:

print("Equal")

elif x > y:

print("Number 2 < Number 1")

else:

print("Number 2 > Number 1")

2

rate = int(input("Rate:"))

hours = int(input("Hours:"))

if hours <= 40:

pay = hours \* rate

else:

pay = 40 \* rate + 1.5 \* rate \* (hours - 40)

print("Pay :", pay)

3

x = float(input("Score:"))

if x > 1.0 or x < 0.0:

print("Error")

elif x >= 0.9:

print("A")

elif x >= 0.8 and x < 0.9:

print("B")

elif x >= 0.7 and x < 0.8:

print("C")

elif x >= 0.6 and x < 0.7:

print("D")

else:

print("F")

4.

x = float(input("Enter temperature : "))

u = input("Enter Unit (c/f) : ")

if u == 'c':

temp = float((9 \* x / 5) + 32)

print("Temperature is ", str(temp), "F")

elif u == 'f':

temp = 5 \* (x - 32) / 9

print("Temperature is ", str(temp), "C")

else:

print("Wrong unit")