Lab Week 04

Conditional Statement

IF Statement

IF statement is used to make decision. It decides whether to read the statement inside an IF statement based on whether the expression is true or false. If the expression is false, it skips the statement. Remember! To check if a equals b, we write "if (a == b)" and not "if (a = b)". If statement can also check multiple expressions using an and/or such as "if (coursework > 40) and (exam > 40)".

*Create a program that gauges your oldness. Example **week4ex1.py**:*

```
age = int(input("Enter your age >> "))
if age < 20:
    print ("You are a still a kid!")
```

IF..ELSE Statement

ELSE statement is an optional statement program reads if the IF condition is false.
*Add additional lines to example **week4ex1.py**:*

```
age = int(input("Enter your age >> "))
if age < 20:
    print ("You are a still a kid!")
else:
    print ("You are a wise man/women!")
```

IF..ELIF..ELSE statement

ELIF statement is an optional statement to allow multiple if statements in one IF block. It is read and tested if the IF or ELIF statements above it is/are false.
*Add additional lines to example **week4ex1.py**:*

```
age = int(input("Enter your age >> "))

if age < 10:
    print ("You are a still a kid!")
elif age < 20:
    print ("You are a teenager!")
elif age < 30:
    print ("You are a young man/women!")
else:
    print ("You are a wise man/women!")
```

Nested IF Statement

Nested IF statement is the IF block insides another IF block. It is used to build more complex decision-making process. Create a program that selects a proper car. Example **week4ex2.py**

```python
print ("Select a brand : ")
print ("1. Honda")
print ("2. Toyota")
ch1 = int(input("Enter your choice (1 or 2) >> "))

if ch1 == 1:
    print ("Select a model : ")
    print ("1. Honda City")
    print ("2. Honda Civic")
    ch2 = int(input("Enter your choice (1 or 2) >> "))
    if (ch2 == 1):
        print ("$90,000")
    elif (ch2 == 2):
        print ("$120,000")
    else:
        print ("Not a valid model!")

elif ch1 == 2:
    print ("Select a model : ")
    print ("1. Toyota Vios")
    print ("2. Toyota Camry")
    ch2 = int(input("Enter your choice (1 or 2) >> "))
    if (ch2 == 1):
        print ("$85,000")
    elif (ch2 == 2):
        print ("$140,000")
    else:
        print ("Not a valid model!")

else:
    print ("Not a valid brand!")
```

Exercise

Please submit all the exercise files on times before the class ends.

Exercise 1

Create a program called VotingAge.py that asks for the user age and check whether the user can join the club or not. (Note: The eligible age to join the club is higher than 18).

Output example

```
Enter your age >> 6
You are not eligible to join the club

Enter your age >> 20
You are eligible to join the club
```

Exercise 2

Create a program called MyTranslator.py that asks for a number in digit and translates that number into a word in your native language. The valid number is between 0 and 4 only. Display proper error message if the number is out of range.

Output example

```
Enter a number from 0 to 4 >> 2
TWO

Enter a number from 0 to 4 >> 0
ZERO

Enter a number from 0 to 4 >> 6
Out of range! Valid number is from 0 to 4 only!
```

Exercise 3

Create a program called MyMax.py that ask for three number and uses function to return the maximum of three numbers.

Output example

```
Enter first number >> 5
Enter second number >> 6
Enter third number >> 4
Maximum number is 6

Enter first number >> 9
Enter second number >> 5
Enter third number >> 6
Maximum number is 9
```

Exercise 4

Create a program called CalcCircle.py that ask user whether the user wants to calculate area of a circle or volume of a sphere. The program has two function which one function responsible to calculate the area of a circle while the other function is responsible to calculate the volume of a sphere and display the answer in two decimal places. Below is the formula for both calculations.

Output example

```
(1) Calculate area of circle
(2) Calculate volume of sphere

Enter your option >> 1

Enter the radius of the circle >> 3
The area of the circle is 28.27

(1) Calculate area of circle
(2) Calculate volume of sphere

Enter your option >> 2

Enter the radius of the circle >> 3
The area of the circle is 113.09
```
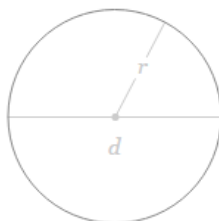
Circle

$$A = \pi r^2$$

r Radius

$$V = (4/3)\pi r^3$$

- The End -