Intro to Python – Lesson 12

We will review the remaining exercises from the IF Statements we were working on yesterday. Complete these problems and make note of any issues for discussion.

Look at the following video on more complex IF statements using AND / OR operators for multiple conditions.

https://www.youtube.com/watch?v=UDm5_Omq9f4

Here are some additional exercises that you can use for practice.

1. As part of the input for a program, the user enters a customer's marital status as S, M, W or D, and their current age. If the status is M, the user must enter the marriage date. If the status is W or D and the age is greater than 40, display a message that reads "Better get into a relationship quick". The program must display the literal Single, Married, Widowed, or Divorced.

2. Design a program that will prompt the user to enter a student ID number, and a student grade. The program will then match the exam score to a letter grade and display the letter grade on the screen. The letter grades are to be determined as follows: 90 and above – A; 80 to 89 – B; 70 to 79 – C; 60 to 69 – D; and below 60 – F.

3. Enter a balance due and a credit limit for a customer. If the customer is under the credit limit calculate the payment due at 10% of the balance, otherwise calculate the payment due as 10% of the balance + the amount they are over the credit limit. If the customer is under their credit limit, the status is assigned a value of OK. If not, the status is assigned the value "OVER". Also, if they are over their credit limit by more than $1,000.00, concatenate the word "CREDIT CHECK" after the status.

4. A home mortgage authority required their customers pay a deposit on a home loan according to the following schedule:

Loan Amount	Deposit Required
Less than $25,000	5% of the loan amount
$25,000 to $49,999	$1,250 plus 10% of loan over $25,000
$50,000 to $100,000	$5,000 plus 25% of loan over $50,000

Loans more than $100,000 are not allowed. Design a program that will allow the user to enter the loan amount requested and display the required deposit.

5. Museum Price Challenge. Let's assume that we have a museum that has the following policy for the admission price based on a full price ticket of $22.50.

   - The museum is closed on Mondays.
   - Everyone gets half price discount on Tuesday and Thursdays.
   - If you are age between 13 and 20 inclusive, you will get a 25% discount on Wednesdays.
   - If you are younger than 6, or older than 65, your admission if free.
   - If you are age between 6 and 12 inclusive, your admission is half price on the Weekend (Saturday and Sunday).

   Build the program that gives the user to input the day of the week and his/her age, then gives the user information about the pricing for him/her. Your program should only have the following patterns of output:

   1.) "We are closed on Monday."
   2.) "You get 25% / 50% price discount of $99.99 and admission price for you is $##.##!"
   3.) "You pay full price of $99.99."
   4.) “Your admission is free today.”

   Test your program with multiple days and multiple ages – before you run the program, determine what the answer should be to check for accuracy.

6. The Number Guessing Game.
   The game will generate the random integer between 1 and 20 behind the scene. The game will ask the user to guess "what number the computer came up with?" The game also tells the user that he/she has only 5 times to guess. If the user can get the right number within the 5 trials, the user wins. If the user does not, the computer wins. Every time the user input the guessed number (which may or may not be correct), the computer will give the user the hints based on the following:

   - Output "The number is higher" when the user input the number smaller than the two numbers below the correct guess.
   - Output "Close! A little higher" when the user input the number smaller than the correct guess- yet within the two number value difference.
   - Output "The number is lower" when the user input the number larger than two number above the correct guess.
   - Output "Close! A little lower" when the user input the number larger than the correct guess - yet within the two number value difference.
   - Output "You win!" when the user input the correct integer.
   - Output “The computer wins!” When the user does not guess in the 5 attempts.

See you at 1.