ASSESSMENT 2

Deadline- Thursday 5th November 2020, 11:30pm

Instruction: Do what you can do, we would have a review...Do question 1-4

5-8 is optional, do at will

Compulsory Part

1. a. Write a program that uses a for loop to print the numbers

```
8, 11, 14, 17, 20, . . . , 83, 86, 89.
```

b.Write a program that uses a for loop to print the numbers

```
100, 98, 96, . . . , 4, 2.
```

2. The Fibonacci numbers are the sequence below, where the first two numbers are 1, and each number thereafter is the sum of the two preceding numbers. Write a program that asks the user how many Fibonacci numbers to print and then prints that many.

```
1,1,2,3,5,8,13,21,34,55,89
```

3. Use a for loop to print a triangle like the one below. Allow the user to specify how high the triangle should be.

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*
**
***
****
```

4. Write a program that asks the user for a number of seconds and prints out how many minutes and seconds that is. For instance, 200 seconds is 3 minutes and 20 seconds.

```
[Hint: Use the//operator to get minutes and the % operator to
get seconds.
```

Optional Part

5. A year is a leap year if it is divisible by 4, except that years divisible by 100 are not leap years unless they are also divisible by 400. Ask the user to enter a year, and, using the // operator, determine how many leap years there have been between 1600 and that year.

6. Ask the user to enter a temperature in Celsius. The program should print a message based on the temperature:

   a. If the temperature is less than -273.15, print that the temperature is invalid because it is below absolute zero.

   b. If it is exactly -273.15, print that the temperature is absolute 0.

   c. If the temperature is between -273.15 and 0, print that the temperature is below freezing.

   d. If it is 0, print that the temperature is at the freezing point.

   e. If it is between 0 and 100, print that the temperature is in the normal range.

   f. If it is 100, print that the temperature is at the boiling point.

   g. If it is above 100, print that the temperature is above the boiling point.

7. Write a program that asks the user how many credits they have taken. If they have taken 23 or less, print that the student is a freshman. If they have taken between 24 and 53, print that they are a sophomore. The range for juniors is 54 to 83, and for seniors it is 84 and over.

8. Write a multiplication game program for kids. The program should give the player ten randomly generated multiplication questions to do. After each, the program should tell them whether they got it right or wrong and what the correct answer is.

```
Question 1: 3 x 4 = 12

Right!


Question 2: 8 x 6 = 44

Wrong.

The answer is 48.


Question 10: 7 x 7 = 49

Right.
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