CSC 120

Homework 7

Due Date: Thursday, 10/26/2017

Part 1 . Using length in loop

You will write a program to ask the user to enter their entire name. Echo their name back and then print it out reversed. It should work - WITHOUT ANY CODE CHANGES for any name. Hint start loop at end and use charAt()

Example:

Enter your name :
Mary Krueger

Your name is Mary Krueger
Reversed is : regeurK yraM

Part 2 - Leap year determinator

Here is the Wikipedia link for leap year definition http://en.wikipedia.org/wiki/Leap_year

Basically if the year is divisible by 4( think year%4==0) its a leap year UNLESS its divisible by 100 in which case its not a leap year UNLESS its also divisible by 400 , in which case it is.

Write a program that evaluates the years from 1900 to 2017 and write out the year if it is a leap year. Otherwise do not write out anything.

Hints
1. Loops can begin at any integer(think begin at 1900; test will be year <=2017)
2. Use && and || to get desired result in the if statements
3. There is nothing to write out in the case its not a leap year. If none of the conditions for a leap year are true, the loop “block” would end and you would increment, test to see if less than 2017 and then evaluate the next year.

Here is what the output should look like
1904 is a leap year
1908 is a leap year
1912 is a leap year
1916 is a leap year
1920 is a leap year
1924 is a leap year
1928 is a leap year
1932 is a leap year
1936 is a leap year
1940 is a leap year
1944 is a leap year
1948 is a leap year
1952 is a leap year
1956 is a leap year
1960 is a leap year
1964 is a leap year
1968 is a leap year
1972 is a leap year
1976 is a leap year
1980 is a leap year
1984 is a leap year
1988 is a leap year
1992 is a leap year
1996 is a leap year
2000 is a leap year
2004 is a leap year
2008 is a leap year
2012 is a leap year
2016 is a leap year

Part 3 - Test for streak

Sports fans often get excited over a team or player who is having a "hot streak." However it turns out that long runs of events, even random ones, occur more often than many people think. In this exercise you'll write a program to find the longest run of heads in a sequence of coin flips.

1. Set up Random
2. Declare and initialize the variable you will need
3. You will have a for loop that goes from 1 to 100.
4. Inside the for loop you will get a random number 0 or 1
   Print out the value in terms of heads or tails
   You will test to see if it is heads(heads =0).
   If it is heads you will increment the heads counter. Print out headsCounter.
   You will test the heads counter to see if it is greater than the maxHeadsCounter
   and if it is put the new value of the headsCounter in the maxHeadsCounter
   If it is tails you will reset the heads counter to 0 and start again.
5. End the loop
6. Print out largest streak of heads

For example, your output might start like this, indicating a longest run (so far) of 4:
Heads 1
Heads 2
Tails
Tails
Heads 1
Heads 2
Heads 3
Heads 4
Tails
Heads 1
...
.....