ECS 30 Spring 2015

Homework 2 due 5-6-2015 (May 6th, 2015) at 4:30pm
(late assignments will NOT be accepted)

Submit homeworks in the "ECS 30" homework box in 2131 Kemper Hall.
  - do NOT submit them using "handin" from your CSIF accounts
  -you can handwrite them (pencil or pen) or type them in a document; it just needs to be legible (if we can't read it, you will not get points for it)

At the top of your homeworks assignment, please include the following information:
  Your Name
  Your UC Davis ID number
  ECS 30
  Spring 2015

TA Tips:

1. These problems are from the "Review Questions" section, *not* "Programming Exercises".
2. If there are several lines of mathematical calculations, please underline or box the final solution.
3. If a command results in an error or seems invalid, write "Error" or "Invalid"
4. For explanation answers, usually 2-3 sentences maximum is sufficient for a clear explanation.

Written assignment #2: Ch. 7: 14, 15; Ch. 8: 8, 14; Ch. 9: 5, 8, 17; Ch. 10: 4, 10; Ch. 11: 4, 20

The problems are reproduced below for your convenience:

Ch.7:

14. Describe the arcs produced by each of the following calls to **DrawArc**:

    a. DrawArc(1.0, 0, 270)
    b. DrawArc(1.0, 135, -90)
    c. DrawArc(1.0, 180, -45)
    d. DrawArc(1.0, -90, 180)

    TA comment: A picture might be the easiest way to describe the shapes.

15. On a piece of graph paper, sketch an approximation of the shape that would be produced by the following statements:

    MovePen(1.0, 1.0);
    DrawArc(4.0, -15, 2 * 15);

DrawArc(4.0, 180 – 15, 2 * 15);

TA comment: You can draw a faint grid on your homework paper, no separate graph paper needed

Ch.8:

8. How would you use *RandomInteger* to generate a pseudo-random number between 1 and 100?

14. What is meant by the term *seed* in the context of random numbers?

Ch.9:
5. Given the definition
    t*ypedef enum (North, East, South, West) directionT;*
what are the internal numeric representations of the four constants?

8. What groups of characters can you assume are consecutive in the ASCII table?

17. What is the result of calling each of the following functions?
   a. *StringLength("ABCDE")*
   b. *StringLength("")*
   c. *StringLength("\a")*
   d. *IthChar("ABC", 2)*
   e. *Concat("12", ".00")*
   f. *CharToString('2')*
   g. *SubString("ABCDE", 0,3)*
   h. *SubString("ABCDE", 4,1)*
   i. *SubString("ABCDE", 3,9)*
   j. *SubString("ABCDE",3,3)*

Ch.10:
4. What is meant by the term *pseudocode*?

10. Why is it dangerous to overuse global variables?

Ch.11:
4. Write the variable declaration and ***for*** loop necessary to create and initialize the following integer array:
(TA comment: the name of the array is squares)

squares

0	1	4	9	16	25	36	49	64	81	100
0	1	2	3	4	5	6	7	8	9	10

20. Assuming that the base address for the array is 1000 and that values of type *int* require two bytes of memory, draw a diagram that shows the address of each element in the array declared as follows:
    int rectangular[2][3];