

# ICS 103, Term 093

## Computer Programming in C

### HW# 1

Due date: Monday, July 19, 2010

- Q.1.** The equation of a line can be represented by  $y = a x + b$ , where  $a$  and  $b$  are real numbers. Write a C program that does the following:
- Asks the user to enter the equations of two lines by entering the coefficients  $a$  and  $b$  and reads them. Then, prints the two entered line equations.
  - Prints whether the two lines intersect or not. If they intersect at one point, then print the point of intersection. If the two lines are equal, print that the two lines are equal.

*Sample executions of the program are shown below:*

```
Enter the coefficients of the first line: 2 3
The first line equation is: Y = 2.0 X +3.0
Enter the coefficients of the second line: -0.5 7
The second line equation is: Y = -0.5 X +7.0
The two lines intersect at the point (1.6,6.2)
Press any key to continue . . .
```

```
Enter the coefficients of the first line: 2 2
The first line equation is: Y = 2.0 X +2.0
Enter the coefficients of the second line: 2 6
The second line equation is: Y = 2.0 X +6.0
The two lines are parallel and do not intersect...
Press any key to continue . . .
```

```
Enter the coefficients of the first line: 2 -2
The first line equation is: Y = 2.0 X -2.0
Enter the coefficients of the second line: 2 -2
The second line equation is: Y = 2.0 X -2.0
The two lines are equal...
Press any key to continue . . .
```

- Q.2.** Numbers represented in hexadecimal representation have the base 16 and the digits (0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F). Write a C program that asks the user to enter a decimal number and displays its hexadecimal representation. Assume that the decimal number is in the range 0-65535.

*Sample executions of the program are shown below:*

```
Enter a decimal number (0-65535): 100
Number in Hexadecimal is 0064
Press any key to continue . . .
```

```
Enter a decimal number (0-65535): 25
Number in Hexadecimal is 0019
Press any key to continue . . .
```

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```
Enter a decimal number (0-65535): 65535
Number in Hexadecimal is FFFF
Press any key to continue . . .
```

*This homework is to be done by a group of two students. The solution should be well organized and your program should be well documented. Submit a soft copy of your solution in a zip file. Your solution should be submitted in a word file that contains the following items:*

- i) Your names and IDs*
- ii) Homework number*
- iii) Problem statement for each question*
- iv) Your solution along with the code for each question*
- v) Discussion of what worked and what did not work in your programs. Include snapshots that demonstrate the working parts of your programs. If things did not work and you attempted to solve them, mention that and write about the difficulty that you have faced.*

*The soft copy should also contain the source code files (i.e. .c) for each question separately.*