## **16.216: ECE Application Programming**

Fall 2013

## Lecture 7: Key Questions September 18, 2013

1. **Example:** What does the following code print?

```
int main() {
   int x = 3;
   int y = 7;

if (x > 2)
       x = x - 2;
   else
      x = x + 2;

if ((y % 2) == 1)
   {
      y = -x;
      if ((x != 0) && (y != -1))
           y = 0;
   }
   printf("x = %d, y = %d\n", x, y);
   return 0;
}
```

2. Discuss how to use if statements to check that a value falls within a desired range.

- 3. **Example:** Write a short code sequence that does each of the following:
- a. Given int x, check its value. If x is more than 5 and less than or equal to 10, print x

b. Prompt for and read temperature as input (type double). If temp is 90 or higher, print "It's too hot!" If temp is 32 or lower, print "It's freezing!" In all other cases, print "It's okay"

- c. Read 3 int values and print error if input problem
  - If fewer than 3 values read, print error message with number of values
  - Example: Error: only 2 inputs read correctly

4. Describe the basic format of a switch statement, including its general usage, the use of case and default, and the use of the break statement.

5. Describe a situation in which you might not want to use a break statement at the end of a given case.

6. **Example:** Given the code below:

```
int main() {
     char grd;
     printf("Enter Letter Grade: ");
     scanf("%c",&grd);
     printf("You are ");
     switch (grd) {
     case 'A' :
           printf("excellent\n");
           break;
     case 'B':
           printf("good\n");
           break;
     case 'C' :
           printf("average\n");
           break;
     case 'D' :
           printf("poor\n");
           break;
     case 'F' :
           printf("failing\n");
           break;
     default :
           printf("incapable of reading directions\n");
           break;
      }
     return 0;
}
```

What does the program print if the user inputs:

- a. A
- b. B+
- c. c
- d. X
- 7. How could we easily change each case to recognize both upper and lowercase inputs?