

EECE.2160: ECE Application Programming

Key Questions

Conditional statements (Lectures 7, 8, & 9)

QUESTIONS:

1. Explain the basics of program debugging.
2. Explain the basic form of an `if` statement.
3. Describe how the expression in `if (<expression>)` is evaluated and show how conditions are evaluated, including multiple conditions in the same expression.
4. Describe how the statement—the actual code to be executed if the condition is true—is written for an `if` statement.
5. Show how multiple `if` statements can be nested together (`if/else if/else`).
6. Discuss how to use `if` statements to check that a value falls within a desired range.
7. 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.
8. Describe a situation in which you might not want to use a `break` statement at the end of a given `case`.

EXAMPLES:

1. 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;  
}
```

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3. 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

4. How could we easily change each case to recognize both upper and lowercase inputs?