EECE.2160: ECE Application Programming
Key Questions
printf(), scanf(), debugging basics (Lectures 5 & 6)

QUESTIONS:

1. (Review) Describe the use of `printf()` to print numeric values and characters.

2. Describe the use of `scanf()` for reading input values into variables.

3. How does `scanf()` handle whitespace and other characters in format string?

4. What is the purpose of the `scanf()` return value?

5. Explain the basics of program debugging (breakpoints, single-stepping, etc).

EXAMPLES:

1. Show the output of each of the following short programs:

a.
```c
#include <stdio.h>
void main()
{
    int i=2, j=3, k, m;
    k = j * i;
    m = i + j;
    printf("%d %d %d %d\n", i, j, k, m);
}
```

b.
```c
#include <stdio.h>
void main() {
    double f, g;
    f = 1.0 / 4.0;
    g = f * 20;
    printf("f = %lf,\ng = %.2lf\n", f, g);
}
```

c.
```c
#include <stdio.h>
void main() {
    int a = 5, b = 2;
    printf("Output%doesn't%dmake%dsense", a, b, a + b);
}
```

2. Assume you have the following variables: `int i; double d; char c;`
   If your program contained each of the following calls to scanf(), what values would be read
   into the appropriate variables, given user input?

a. Input: `34 5.7`
   ```
   scanf("%d%lf", &i, &d)
   ```

b. Input: `34 5.7`
   ```
   scanf("%d        %lf", &i, &d)
   ```

c. Input: `34 5.7`
   ```
   scanf("%lf%d", &d, &i)
   ```

d. Input: `34 5.7`
   ```
   scanf("%d%c", &i, &c)
   ```

e. Input: `34 5.7`
   ```
   scanf("%d %c", &i, &c)
   ```