

16.216: ECE Application Programming

Spring 2012

Lecture 22: Key Questions

March 23, 2012

1. **Example:** What does the following program print? (Review)

```
#include <stdio.h>

int f(int a, int b);           // Function prototype

int main() {
    int x = 1;
    int y = 2;
    int result1, result2, result3;

    result1 = f(x, y);
    result2 = f(y, result1);
    result3 = f(result1, result2);

    printf("x = %d, y = %d\n", x, y);
    printf("Result 1: %d\n", result1);
    printf("Result 2: %d\n", result2);
    printf("Result 3: %d\n", result3);

    return 0;
}

int f(int a, int b)           // Function definition
{
    int i;                    // Loop index
    int r = 0;                // Result

    for (i = 0; i < a; i++)
        r += b;

    return r;
}
```

2. **Example:** Write a function to do each of the following:
 - a. Prints a series of `LINE_LENGTH` dashes on a single line, where `LINE_LENGTH` is a predefined constant (using `#define`)
 - b. Reads a value from the console input and returns 1 if the value is even, 0 if it's odd
 - c. Takes four numbers as arguments and returns their average

3. Explain what a pointer is, and how we can use them in C.

4. Explain the use of passing function arguments by address.