

EECE.2160: ECE Application Programming

Spring 2016

Lecture 17: Key Questions

March 4, 2016

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

```
int f(int *a, int *b);

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)
{
    int copyB = *b;
    while (*a > 1) {
        *b += copyB;
        (*a)--;
    }
    return *b;
}
```

2. Write a function that:

- Given two integer arguments, x and y , store the quotient and remainder of x / y into locations specified by arguments q and r , respectively.

- Uses pointers to swap the values of two double-precision variables

PE3: Functions

This exercise functions on the “change problem”—write a program that will, given an amount of change to be returned, determine the minimum number of coins required to fulfill that amount. In this specific problem, the amount is \$2.00 or less, and the coins available are half dollars, quarters, dimes, nickels, and pennies.

Use the space below and on the following page to draw a flowchart for this program.

Under what circumstances do you use functions? Identify the best opportunity to use a function in this program, and draw a flowchart that incorporates the function, as well as calls to that function.