

EECE.2160: ECE Application Programming

Fall 2018

Lecture 18: Key Questions

October 17, 2018

QUESTIONS:

1. Explain what a pointer is, and how we can use them in C.
2. Explain the use of passing function arguments by address.

EXAMPLES:

1. Write a function to do each of the following. Note that only the function name is listed—you must determine the return type and argument list.
 - a. `printLine()`: Takes an integer, `length`, as an argument and prints “length” dashes on a single line

1 (continued)

b. `checkEvenOdd()` : Reads an integer value from the console input (i.e., an integer typed by the user as input) and returns 1 if the value is even, 0 if it's odd

c. `avgFour()` : Takes four double-precision numbers as arguments and returns their average

2. What does the following program print?

```
#include <stdio.h>
#include <math.h>
void get_r_theta(double a, double b,
                double *adr_r, double *adr_th);

void main()
{
    double x,y,h,r,th;
    printf("Enter x, y components of vector: ");
    scanf("%lf %lf",&x,&y);
    get_r_theta(x,y,&r,&th);
    printf("Vector with x=%lf and y=%lf
           has r=%lf, theta=%lf\n",x,y,r,th);
}

void get_r_theta(double a, double b,
                double *adr_r, double *adr_th) {
    double sum;
    sum = pow(a,2)+pow(b,2); //or a*a+b*b;
    *adr_r = sqrt(sum);
    *adr_th = atan2(y,x);
}
```