16.216: ECE Application Programming
Fall 2011

Lecture 18: PE3
October 19, 2011

Today's exercise involves the following code:

```c
/*
 * 16.216: ECE Application Programming, University of Massachusetts Lowell
 * Instructor: Dr. Michael Geiger
 *
 * 10/19/11: Programming Exercise 3
 * Program is intended to give students practice with loops
 *
 * Given a series of points, calculate the total distance traveled between
 *   all points. Note that, given a pair of coordinates (x_1, y_1) and
 *   (x_2, y_2) the distance between them is:
 *       sqrt((x_2 - x_1)^2 + (y_2 - y_1)^2)
 * Points will be given in the form:
 *   <letter> <x coordinate> <y coordinate>
 */

#include <stdio.h>
#include <math.h>           // Used for sqrt() function

int main() {

    /* PROGRAM SHOULD BE STRUCTURED AS FOLLOWS:
            --First, program should read the number of points to be entered
                --> Ensure this number falls within an appropriate range
            --Program should then read all points and keep a running sum
              of the total distance traveled
                --> If a point is entered incorrectly, it must not be allowed
                    to update the total distance. However, that point does
                    count against the total number of points read in.
                    (For example, if the user enters 10 as the number of
                    points, and 2 of those values are entered incorrectly,
                    your program shouldn't skip those two and end up trying
                    to read a total of 12 points.)
            --After the total distance is calculated, print it (using
                    precision 2)
            --The user should then be asked if he/she would like to enter
              another series of points.
                --> If the answer is 'Y', repeat the steps above
                    --> If the answer is 'N', exit the program
                    --> If the answer is neither 'Y' nor 'N', print an error
                            and repeat the prompt
    */

    return 0;
}
```

Use this space to draw a flow chart describing the overall flow of the program.

Use this space to draw any smaller flow charts you may want to describe the various steps of the program in more detail.

Use the following space to hand-write your code (if necessary) or take additional notes.

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