

Department of Computer Science and Engineering
University of Notre Dame

CSE 232 - Advanced Programming
Fall 2004

Assignment 4

Reading:

Read sections 3.1 through 3.9 of chapter 3 of the textbook. Review all class notes. It is again recommended that you read the summary at the end of each chapter, and that you do the self-review exercises.

Problem 1:

Write a program that reads values of resistors from a data file and then produces a table that lists, for each resistor : the current through the resistor, the voltage across the resistor, and its power consumption. The output should then display the average power consumption for all resistors. The battery rating is 12V with an internal resistance of 3.7 Ω . Refer to class notes for a full description of this problem.

The data file is `<classdir>/data/resistors.dat` (where `<classdir>` stands for the class directory). It contains a sentinel value of -1 (all resistor values are strictly positive). Use input redirection to read in the data from the file..

Problem 2:

Write a program that prompts the user for the coordinates of a point in a cartesian system, and then finds its corresponding polar coordinates, as well as the quadrant the point is in, or the axis that it is on, or the origin, as the case may be.

You must write functions for each of the tasks described above, as well as a function to display the results. Place the funtions and their prototypes in the main program.

Problem 3:

Do problem 3.30 page 244 of the textbook. Just write one program, but use the hint provided in part c. Display the numbers 10 per line..

Due date:

Friday 9 / 17 / 04, at 2 am.

Make sure each of your programs contains your name in the comment section. You must place the source codes (programs) for the three programs, in your personal dropbox. Do not submit any executables. Use the same file naming convention as in previous homeworks. Make sure you use the g++ compiler.