

School of Computer Science, University of Windsor
60-141: Introduction to Algorithms and Programming II
Term: Summer 2014 (July-August)
Instructor: Dr. Asish Mukhopadhyay

Assignment 4

Posted: 24 th July, 2014

Due: 3rd August, 2014, 11:59pm

Preamble: This assignment has been designed to consolidate your understanding of random access files.

Grading Scheme: The problem is worth 10 points, 2 for program documentation, 2 for effort, 6 for correctness. Mail your solution to parti@uwindsor.ca before the due date (First try to upload it on the course website hosted on CLEW). The submission should have the Assignment number, your name and student ID on it as well as on the subject line of the e-mail, with an attachment that contains a script file and a source file.

Credits: The problem and its description is from your textbook, chapter 11, Exercise 11.12.

Problem: As a preparation for solving this problem, read carefully the sections on random-access files and, in particular, the case study of Section 11.9. The problem below is a variation on this case-study. As some of you may not have the latest edition of the text book, I am reproducing the problem below.

The owner of a hardware store needs to keep an inventory of the tools he has, how many of each he has and the cost of each. You are required to write a C-program that can keep track of this inventory, beginning with an initialization of a file "hardware.dat" to 100 empty records. Your program should have the following capabilities:

- (1) input data concerning each tool
- (2) list all your tools
- (3) delete the record for a tool that is no longer in the inventory
- (4) update any information in the file.

The record number should be the tool identification number as shown in the data table below. Use

the information in this table to initialize the inventory.

Record #	Tool Name	Quantity	Cost
3	Electric Sander	7	57.98
17	Hammer	76	11.99
24	Jig Saw	21	11.00
39	Lawn Mower	3	79.50
56	Power Saw	18	99.99
68	Screw Driver	106	6.99
77	Sledge Hammer	11	21.50
83	Wrench	34	7.50

Your program should have the following functions:

```
void initializeFile(FILE *);  
void inputData(FILE *);  
int userMenu(void);  
void listTools(FILE *);  
void updateRecord(FILE *);  
void insertRecord(FILE *);  
void deleteRecord(FILE *);
```