ffCPT 244 DATA STRUCTURES

ASSIGNMENT 5 v1

A random access program.

OUTPUT:

Your program must be capable of printing the database, or a single record from the database, or updating the database.

INPUT:  
Input to this program is a pair of files provided by the instructor: a data file in structures (rnd) and an index file(ind). The index file records consists of two-integer structures.  Make sure you create backups of these files because each test of the program will alter the data file. The data file will consist of records stored in objects similar to those described in program four.  Be sure every field is of the right size and type.

PROCESSING:  
Your program should offer the user the following choices:  
LIST THE FILE  
SEARCH THE FILE  
ADD A RECORD  
DELETE A RECORD  
EXIT THE PROGRAM

On LIST THE FILE you should clear the screen and list all records in your database to the data window with appropriate column headings and formatting.

On SEARCH THE FILE prompt the user for the cust id, use a binary search on the index, and then if found, print that record on the screen with column headings, using the same code as the list capability. If the record is not found the words "RECORD NOT IN DATABASE" should appear on the screen.

On ADD A RECORD your program should prompt the user for each field needed and add the information to both the data file and the index table. Get the id first and make sure the record does not already exist. Incorporate your data validation methods from assignment four into this program in order to add properly validated new records.

On DELETE A RECORD your program should prompt for the customer id, then delete the entry from the index table or print a message stating that the record does not exist.

When exiting the program do not rewrite your index file to the disk. Remember, if your program makes a mistake with the data file you must have fresh copies of the original file available to start over.  When you turn in your program the files mentioned in your open statements must be accessible.  You must test all menu choices for their appropriateness.

**Unlike assignment 3 you are not to load all the records into a table.  Load only the index.  Data records should be brought into the program one at a time on an as-needed basis.  Use the information found in unit seven.  Do not rewrite the index file: this will make it easier for you to test often simply by recopying your .rnd file.**

**You must include and use the following functions at a minimum:**Functions which receive a string to act as a prompt and return one of the following: int, char, double.  
A function which is passed two pointers, one to access a prompt and one to receive a string from the keyboard.  
Functions that return a boolean value,  One which tests a string to see if it is valid to convert to an integer, the other to convert to a floating point number.  
A function that will receive a single string and test that string to see if it is a valid state abreviation.  
A function that will receive either a string or a three-integer structure (your choice)  This function will return a boolean indicating whether the arguement is a calendar date.