AP Computer Science

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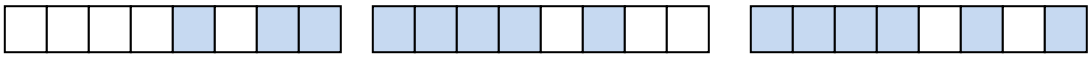
Assignment 11/1011_2/13_8/B_{16}

Binary **Ones Comp** **Twos Comp**



List Manager

Create your own list management program

Lists, lists, lists!

Playlists, friend lists, to do lists, password lists, they go on and on and on…

Fortunately, now that you are learning the art of software development, you are going to create a list manager!

Think of some sort of entity that you are going to keep track of in a list.

Examples include;

Colleges you are applying to, friends name and phone numbers and addresses, concerts attended, local restaurants, encryption methodologies, U2 songs, ski mountains, to do list, etc.

String*Arrays*ArrayList*Client Server*Artificial Intelligence*Inheritance*Files*Video Games*Short circuit evaluation*

* Dynamic Memory *Big O Notation*Stacks *Extreme Programming*Selection Sort*Insertion Sort*Waterfall Model

1. Develop a class that implements the Comparable interface

    a. This class must have at least 5 fields or data elements
    b. While it is good OO design to have the variables private and the methods public, you may allow public variables for convenience
    c. Use good variable and method names (Charles, HiKC is not a good variable name!!arghhhhhhhhhh!!!)
    d. Provide at least 2 constructors!!!!
    e. Your compareTo method must be written to sort the instances of this class with some complexity.
        i. For example, you can't just have a compareTo method that compares names alphabetically
        ii. If you want to be able to sort on multiple criteria, you may provide multiple classes that implement Comparator
        iii. In this case, at least one of your classes that implement Comparator must have some sort of complexity
    f. Comment your class

2. Develop another class that allows you to manage a list of your first class. This will have an ArrayList inside it and have methods that will;

    a. Read in data from a text file into the ArrayList, making an object for each "record" read in and copying each "field" into that record (this should happen each time the program starts)
    b. Display the list
    c. Sort the list according to the compareTo method or multiple sorts using Comparator objects (May use Collections.sort here)
    d. Edit a record in the list (Update the fields)
    e. Delete a record in the list
    f. Save the list back to the text file (should prompt user if they attempt to exit program without saving)
    g. Archive the list to a separate file name for safety (when working with files, it is ALWAYS a good idea to save a backup)

3. You may use Swing or console for this project

4. BONUS: Encrypt your data using Blowfish encryption

Project Name	**Assign 11 – List Manager**
Class 1 Name	Restaurant.java (Example)
Class 2 Name	RestManager.java (Example)
Class 3 Name	Possible Comparator Classes (Optional)

RestManager.java

```
public static ArrayList<Restaurant> list = new ArrayList<Restaurant>();

public static void main() {

//Has a menu which allows control of ArrayList
}
```

Rubric	
Entity Class	
-compareTo	**20**
-good variable names with at least 5 data fields	**10**
main class or Frame for GUI people	
-reads from text file	**30**
-sorts based on compareTo	**15**
-edits	**15**
-adds	**15**
-deletes	**15**
-displays	**15**
-saves	**15**
-archives	**15**
-comments and variable names	**10**
TOTAL	**145**
BONUS	**20**

Recursion*Linear Search*Binary Search*Grid World Case Study*File Processing *nlogn*Hangman