

Assignment 9: C-Strings, String Objects, and Classes

[1] **Objectives:** The main purpose of this assignment is to make sure you are familiar with C-string, String class, and classes in general. The old C-strings are being used a lot in the existing applications, so it is important to know how it works. Feel free to use c-strings or string class. In addition, it is important that you know how to use functions to structure your program. If you know how to read from a file, you can write our own code to deal with the file. If not, we are providing one for you below.

[2] **Description:** In this assignment you are going to build a simple computer application for a company to keep track of their employees. This application needs to keep track of all employees the company has. The user of the application should be able to, search by name, search by ID, and print a list of all employees.

- a) Define a structure for “employee”, with the following members:
 - Employee first name, array of character of size 30,
 - Last name, array of character of size 30,
 - A double for hourly salary rate
 - An integer for employee ID

- b) Define a class called “company”, with the following members:
 - An array of all the employees.
 - An integer for the number of employees;
 - insert(), takes names and salary and adds the employee into the company
 - search() searches by employee ID and prints out info
 - search() searches by last name, prints out info
 - print(), prints all employees of the company

Restrictions:

- The search function must be overloaded (see company class above).
- Must define a structure and a class as specified.
- You can choose the type of strings to us.
- You can use the readIn() function (below) or not.
- You must implement all member fields of the class as "private".
- You may assume the maximum number of employees is 100.

[3] **Input:** Since we are not completely done with the chapter on files, I am giving you a function that will get the data into the company object. The test input file will also be provided.

```
void readIn(company& comp){
    char fname[NAME_SIZE], lname[NAME_SIZE];
    int id;
    double salary;
    comp.init(); // initialize the array to empty
    ifstream myfile ("prog9in.txt");
    if (myfile.is_open()){
        myfile >> id >> fname >> lname >> salary;
        while (!myfile.eof()){
```

```

        comp.insert(id, fname, lname, salary);
        myfile >> id >> fname >>lname >> salary;
    }
    myfile.close();
}
else cout << "Unable to open file";
}

```

[4] **Output:** See the sample output below.

```

Select your option:
1. Search employee by last name
2. Search employee by ID
3. Print list of all employees
4. Exit

-> 3

      First Name      Last Name      Emp ID      Salary Rate
      Jane           Price          101          7.50
      Thomas         Bell           102          7.50
      Sara            Hughes         103          7.50
      Fred            Wood           104          10.00
      Gerald          Alexander      109          10.00
      Kathy           Baker          201          25.50
      Patricia        Davis          202          25.25
      Bonnie          Morgan         203          50.00
      Donald          Carter         210          60.00
      Jane            Carter         211          61.00
      Christopher     Garcia         220          60.00
-----

Select your option:
1. Search employee by last name
2. Search employee by ID
3. Print list of all employees
4. Exit

-> 1
Enter the employee's last name
-> Carter
Name: Donald Carter, ID: 210, salary: $60.00
Name: Jane Carter, ID: 211, salary: $61.00
-----

Select your option:
1. Search employee by last name
2. Search employee by ID
3. Print list of all employees
4. Exit

-> 1
Enter the employee's last name
-> David
David not found.

```

```
-----  
    Select your option:  
    1. Search employee by last name  
    2. Search employee by ID  
    3. Print list of all employees  
    4. Exit  
  
-> 2  
Enter ID to search  
-> 201  
Name: Kathy Baker, ID:201, salary: $25.50  
  
-----  
    Select your option:  
    1. Search employee by last name  
    2. Search employee by ID  
    3. Print list of all employees  
    4. Exit  
  
-> 2  
Enter ID to search  
-> 200  
200 not found.  
  
-----  
    Select your option:  
    1. Search employee by last name  
    2. Search employee by ID  
    3. Print list of all employees  
    4. Exit  
->
```

[5] **Deadline:** Monday, April 18, 2016.