CS5334.251/252, Advanced Information Processing, Spring, 2020
Programming Project

Issued: Wednesday, 04/8/2020
Due: Midnight, Sunday, 05/10/2020 (Note: that will be four days after the final exam so that you have more time to finish the project. The class home/project submission access will be closed midnight of 5/10/2020).

This is a group project. Each group has two persons. The project is intended to enhance your basic understanding and programming skills of web based information processing. For each group, only one submission is needed. Please specify clearly the names of the two group members.

1 Introduction

The class demo program is a simple job search application. We have discussed in details of the demo program. In particular we discussed details of the basic ideas of the demo, including the data structures used and the rating strategies, in the Oracle ProC/C++ version of the demo program. The other three demo versions are implemented using Oracle+Java Servlets, and PHP+MySql, respectively. The basic data structures, the strategies, and the program structures, are all the same in the three demo versions.

Let's review some of the important aspects of the demo program:

(1) There is a job table, whose structure is described in class website and in class presentation d discussions. The basic job search front end (HTML code) provides search drop down menus based on discussion forum database.

(2) When a job search request is received by the web server, the server application will first format a SQL query.

(3) For some search menu choices (such as job region, state, city), the program will not add a condition in the *where* clause. Rather, it will do a rating based on the region, state, or city provided.

(4) For some other search menu choices (such as job type, job title, specialization), the program will add a condition in the *where* clause. So, for example, if the user searches for jobs with job title *analyst*, the search will only return job with job title "analyst". Those jobs with title *senior analyst*, or title *programmer analyst* will not be returned. If the user specifies search of *data administrator*, then those jobs with specialization *database development* will not be returned.

2 The project

The project asks you to expand the class demo in three different ways:

(1) Use the *job title* field as part of the ratings. For example, if the user searches for jobs with job title *analyst* specified, the search will return all jobs with related

to job title "analyst". Those jobs with title *senior analyst*, or title *programmer analyst*, and etc., will also be returned, with some rating penalty.

(2) Use the *specialization* field as part of the ratings. For example, if the user searches for jobs with job title *database administrator* specified, the search will return all jobs with related to job title "database". Those jobs with title *database development*, or anything related to database, will also be returned, with some rating penalty.

(3) Implement the *keyword* feature. The current version of the front end has such a choice, but the code was not provided. In implementing such feature, you can search the job description for the keyword, and search job table for the keyword. You can provide your own rating ideas in this feature.

You may implement this project in one of the three flavors of the class demo application. No other flavor allowed. For example, implementing using .NET framework is not allowed.

3 The main requirements

This project requires you to understand the class demo application first. A thorough understanding will facilitate your implementation.

You may feel difficult as where to start for this option of the project. This section provides some hints about this.

There is no need of modifying any tables used by the class demo application. However, if you feel the need of modifying any tables, please justify it and document the modification clearly.

4 Project report and hand-in

Your project report must include the following:

(1) Project description. This is a very important part of your project. A sloppy description may hurt your grade, even if your actual implementation is excellent. Your description has to include at least the following components.

- An itemized description about what features are implemented or not implemented.
- For each implemented feature, what special techniques/skills are used.
- A *README* file that clearly instructs how to compile and run your program.
- A complete URL that access/test your project.

(2) Source program.

a. The whole program must be well-commented. For instance, important functions must be concisely commented about the parameters needed, the main duty performed, values returned, and etc.

b. As your implementation is on the department Linux virtual machine new-firebird.cs.txstate.edu, your do not have to upload your source code. Leave them on your own directory and document it clearly where it is in your project description. I will test it from that directory if needed. Just upload your project description through class homework/project submission panel.

c. **You do not have to hand in hard-copy of your source code or project description**.

(3) No email submissions of your project is accepted.

(4) You shouldn't modify anything of your source code/files after project submission. Any changes will result in severe penalty.

(5) A thread will be created on class forum. You should post in that thread the two group members of your group.