

## CPSC 304

### Cover Page for Project Part 3

**Date: Nov 23, 2020**

**Project Group Number on Canvas: 17**

#### Group Members:

| Name         | Student Number | Alias (Userid) | Preferred E-mail Address  |
|--------------|----------------|----------------|---------------------------|
| Eric Burton  | 40650146       | q7y9a          | erkhul6@gmail.com         |
| Anthony Mak  | 10617009       | s0l2b          | anthonymak2000@gmail.com  |
| Charles Qian | 20075164       | a2k1b          | charlesqian.ubc@gmail.com |

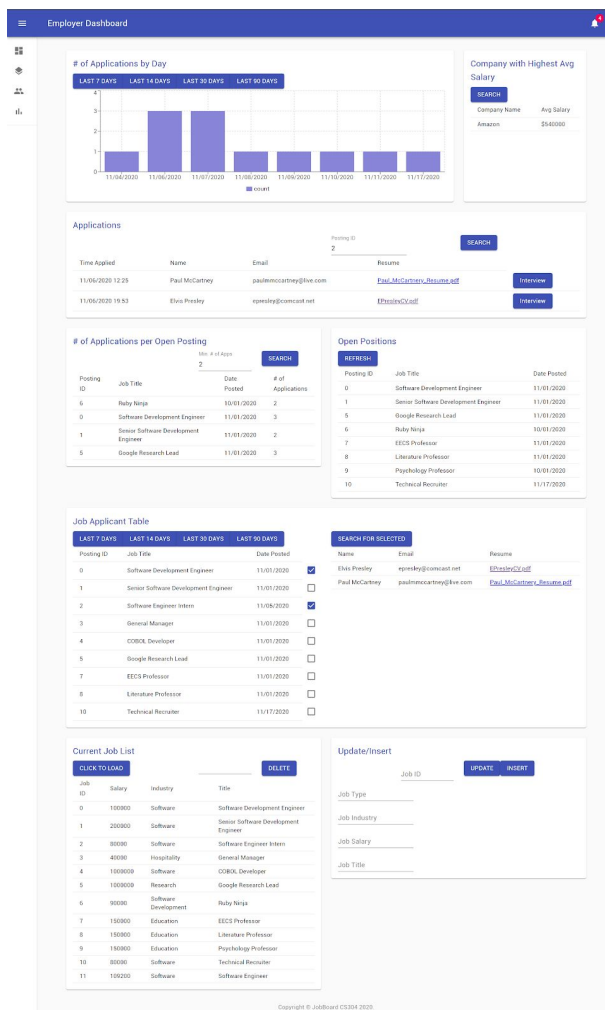
By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

# Project Description

Our final project is a one page job board application built using React, Node, Express and MySQL. This application models the Employer side interactions of a dashboard for a job board. The employer is able to create and update job postings for job seekers to apply to. The dashboard gives the employer the ability to easily query our database to find out information on applicants, such as their name, email and resume.

Our dashboard also provides various interfaces for the employer to evaluate how their job postings are performing. We also provide various charts and tables to show aggregated data on how many applications are being sent in per day to their postings. In short, our dashboard is intended to be an all-in-one solution for employers to view and manage their job postings, streamlining the hiring process.



## Schema

Our project's final schema did not differ greatly from the schema we turned in for Milestone 2. Some minor changes were made to some of the attributes, such as changing jobDescription to jobTitle. We felt these attributes were a better fit for how our application would be used.

For this project, we did not interact with all of the tables in the given schema, as our dashboard was focused on the Employer perspective. Therefore, the operations that are allowed are slightly different from a JobSeeker type user.

## SQL Queries Used

Queries used are assigned to the sql constant with comments in the server.js file in the root folder. The various types can be found by searching the type of the query (ie. join, nested aggregation).

The SQL DDL statements to create and load the tables is called "init.sql" in the root folder of the code.

## Installation Steps

Installation steps and requirements are noted in the README file in the project repo.

# Query Checklist and Sample Outputs

## 1.Insert

### Update/Insert

Job ID

UPDATE

INSERT

Job Type

Job Industry

Job Salary

Job Title

The user is able to enter the following information about their job: type, industry, salary, title. Then, with a given ID, they can insert that job into our database.

| Current Job List |         |                      |                                      |
|------------------|---------|----------------------|--------------------------------------|
| CLICK TO LOAD    |         | DELETE               |                                      |
| Job ID           | Salary  | Industry             | Title                                |
| 0                | 100000  | Software             | Software Development Engineer        |
| 1                | 200000  | Software             | Senior Software Development Engineer |
| 2                | 80000   | Software             | Software Engineer Intern             |
| 3                | 40000   | Hospitality          | General Manager                      |
| 4                | 1000000 | Software             | COBOL Developer                      |
| 5                | 1000000 | Research             | Google Research Lead                 |
| 6                | 90000   | Software Development | Ruby Ninja                           |
| 7                | 150000  | Education            | EECS Professor                       |
| 8                | 150000  | Education            | Literature Professor                 |
| 9                | 150000  | Education            | Psychology Professor                 |
| 10               | 80000   | Software             | Technical Recruiter                  |
| 11               | 250000  | Software             | Software Development Manager         |

| Current Job List |         |                      |                                      |
|------------------|---------|----------------------|--------------------------------------|
| CLICK TO LOAD    |         | DELETE               |                                      |
| Job ID           | Salary  | Industry             | Title                                |
| 0                | 100000  | Software             | Software Development Engineer        |
| 1                | 200000  | Software             | Senior Software Development Engineer |
| 2                | 80000   | Software             | Software Engineer Intern             |
| 3                | 40000   | Hospitality          | General Manager                      |
| 4                | 1000000 | Software             | COBOL Developer                      |
| 5                | 1000000 | Research             | Google Research Lead                 |
| 6                | 90000   | Software Development | Ruby Ninja                           |
| 7                | 150000  | Education            | EECS Professor                       |
| 8                | 150000  | Education            | Literature Professor                 |
| 9                | 150000  | Education            | Psychology Professor                 |
| 10               | 80000   | Software             | Technical Recruiter                  |
| 11               | 250000  | Software             | Software Development Manager         |
| 12               | 125000  | Software             | Junior Software Development Engineer |

Before and after we insert with the ID 12, type Engineer, industry Software, salary 125000, and title Junior Software Development Engineer.

## 2. Delete

Current Job List

CLICK TO LOAD  DELETE

| Job ID | Salary  | Industry             | Title                                |
|--------|---------|----------------------|--------------------------------------|
| 0      | 100000  | Software             | Software Development Engineer        |
| 1      | 200000  | Software             | Senior Software Development Engineer |
| 2      | 80000   | Software             | Software Engineer Intern             |
| 3      | 40000   | Hospitality          | General Manager                      |
| 4      | 1000000 | Software             | COBOL Developer                      |
| 5      | 1000000 | Research             | Google Research Lead                 |
| 6      | 90000   | Software Development | Ruby Ninja                           |
| 7      | 150000  | Education            | EECS Professor                       |
| 8      | 150000  | Education            | Literature Professor                 |
| 9      | 150000  | Education            | Psychology Professor                 |
| 10     | 80000   | Software             | Technical Recruiter                  |
| 11     | 250000  | Software             | Software Development Manager         |

The user is able to input the job ID they wish to delete.

Current Job List

CLICK TO LOAD  DELETE

| Job ID | Salary  | Industry             | Title                                |
|--------|---------|----------------------|--------------------------------------|
| 0      | 100000  | Software             | Software Development Engineer        |
| 1      | 200000  | Software             | Senior Software Development Engineer |
| 2      | 80000   | Software             | Software Engineer Intern             |
| 3      | 40000   | Hospitality          | General Manager                      |
| 4      | 1000000 | Software             | COBOL Developer                      |
| 5      | 1000000 | Research             | Google Research Lead                 |
| 6      | 90000   | Software Development | Ruby Ninja                           |
| 7      | 150000  | Education            | EECS Professor                       |
| 9      | 150000  | Education            | Psychology Professor                 |
| 10     | 80000   | Software             | Technical Recruiter                  |
| 11     | 250000  | Software             | Software Development Manager         |

This is what the job list looked like after we deleted the job with ID 8 (see above for before).

### 3. Update

#### Update/Insert

Job ID

UPDATE

INSERT

Job Type

Job Industry

Job Salary

Job Title

Users are able to insert the type, industry, salary, and title of the job they would like to update with the given job ID.

| Current Job List |         |                      |                                      |
|------------------|---------|----------------------|--------------------------------------|
| CLICK TO LOAD    |         | DELETE               |                                      |
| Job ID           | Salary  | Industry             | Title                                |
| 0                | 100000  | Software             | Software Development Engineer        |
| 1                | 200000  | Software             | Senior Software Development Engineer |
| 2                | 80000   | Software             | Software Engineer Intern             |
| 3                | 40000   | Hospitality          | General Manager                      |
| 4                | 1000000 | Software             | COBOL Developer                      |
| 5                | 1000000 | Research             | Google Research Lead                 |
| 6                | 90000   | Software Development | Ruby Ninja                           |
| 7                | 150000  | Education            | EECS Professor                       |
| 8                | 150000  | Education            | Literature Professor                 |
| 9                | 150000  | Education            | Psychology Professor                 |
| 10               | 80000   | Software             | Technical Recruiter                  |
| 11               | 250000  | Software             | Software Development Manager         |

| Current Job List |         |                      |                                      |
|------------------|---------|----------------------|--------------------------------------|
| CLICK TO LOAD    |         | DELETE               |                                      |
| Job ID           | Salary  | Industry             | Title                                |
| 0                | 100000  | Software             | Software Development Engineer        |
| 1                | 200000  | Software             | Senior Software Development Engineer |
| 2                | 80000   | Software             | Software Engineer Intern             |
| 3                | 40000   | Hospitality          | General Manager                      |
| 4                | 1000000 | Software             | COBOL Developer                      |
| 5                | 1000000 | Research             | Google Research Lead                 |
| 6                | 90000   | Software Development | Ruby Ninja                           |
| 7                | 150000  | Education            | EECS Professor                       |
| 9                | 150000  | Education            | Psychology Professor                 |
| 10               | 80000   | Software             | Technical Recruiter                  |
| 11               | 225000  | Software             | Software Engineer Manager            |

The job list after we update the 11th job to a salary of 225,000 and title to Software Engineer Manager.

## 4. Selection

| LAST 7 DAYS |  |  |  | LAST 14 DAYS                         |  |  |  | LAST 30 DAYS |  |  |  | LAST 90 DAYS             |  |  |  |
|-------------|--|--|--|--------------------------------------|--|--|--|--------------|--|--|--|--------------------------|--|--|--|
| Posting ID  |  |  |  | Job Title                            |  |  |  | Date Posted  |  |  |  |                          |  |  |  |
| 0           |  |  |  | Software Development Engineer        |  |  |  | 11/01/2020   |  |  |  | <input type="checkbox"/> |  |  |  |
| 1           |  |  |  | Senior Software Development Engineer |  |  |  | 11/01/2020   |  |  |  | <input type="checkbox"/> |  |  |  |
| 2           |  |  |  | Software Engineer Intern             |  |  |  | 11/05/2020   |  |  |  | <input type="checkbox"/> |  |  |  |
| 3           |  |  |  | General Manager                      |  |  |  | 11/01/2020   |  |  |  | <input type="checkbox"/> |  |  |  |
| 4           |  |  |  | COBOL Developer                      |  |  |  | 11/01/2020   |  |  |  | <input type="checkbox"/> |  |  |  |
| 5           |  |  |  | Google Research Lead                 |  |  |  | 11/01/2020   |  |  |  | <input type="checkbox"/> |  |  |  |
| 7           |  |  |  | EECS Professor                       |  |  |  | 11/01/2020   |  |  |  | <input type="checkbox"/> |  |  |  |
| 8           |  |  |  | Literature Professor                 |  |  |  | 11/01/2020   |  |  |  | <input type="checkbox"/> |  |  |  |

The user is able to select for job postings posted in the last X days using the buttons above. This also displays the posting ID and associated Job Title as well as their date posted.

```
[
  RowDataPacket {
    id: 0,
    title: 'Software Development Engineer',
    date: '11/01/2020'
  },
  RowDataPacket {
    id: 1,
    title: 'Senior Software Development Engineer',
    date: '11/01/2020'
  },
  RowDataPacket {
    id: 2,
    title: 'Software Engineer Intern',
    date: '11/05/2020'
  },
  RowDataPacket { id: 3, title: 'General Manager', date: '11/01/2020' },
  RowDataPacket { id: 4, title: 'COBOL Developer', date: '11/01/2020' },
  RowDataPacket {
    id: 5,
    title: 'Google Research Lead',
    date: '11/01/2020'
  },
  RowDataPacket { id: 7, title: 'EECS Professor', date: '11/01/2020' },
  RowDataPacket {
    id: 8,
    title: 'Literature Professor',
    date: '11/01/2020'
  }
]
```

Data returned from the database.



## 5. Projection

### Open Positions

| Posting ID | Job Title                            | Date Posted |
|------------|--------------------------------------|-------------|
| 0          | Software Development Engineer        | 11/01/2020  |
| 1          | Senior Software Development Engineer | 11/01/2020  |
| 5          | Google Research Lead                 | 11/01/2020  |
| 6          | Ruby Ninja                           | 10/01/2020  |
| 7          | EECS Professor                       | 11/01/2020  |
| 8          | Literature Professor                 | 11/01/2020  |
| 9          | Psychology Professor                 | 10/01/2020  |

This is a table projecting the posting ID, job title and Date posted attributes of all currently open positions. To provide a better user experience, this table is loaded when the page is loaded and does not require any user input.

## 6. Join

### Applications

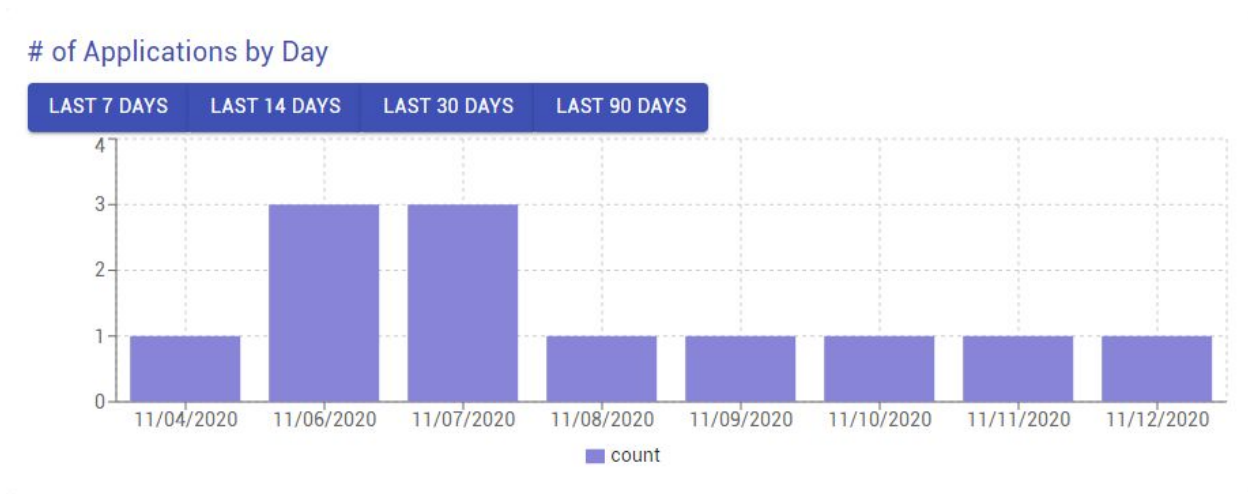
|              |      |            |        |
|--------------|------|------------|--------|
|              |      | Posting ID | SEARCH |
| Time Applied | Name | Email      | Resume |

Applications table before any user interaction. This component allows the user to specify a posting ID and will grab all the applications associated with that posting ID and display various attributes associated with the Job Seeker applying to the position. The query will do a join between 3 tables (Apply, Application, JobSeeker) to grab the requested information.

| Applications     |                |                         |  |           |
|------------------|----------------|-------------------------|--|-----------|
|                  |                |                         | Posting ID<br>2                            | SEARCH    |
| Time Applied     | Name           | Email                   | Resume                                     |           |
| 11/06/2020 12:25 | Paul McCartney | paulmmccartney@live.com | <a href="#">Paul_McCartnery_Resume.pdf</a> | Interview |
| 11/06/2020 19:53 | Elvis Presley  | epresley@comcast.net    | <a href="#">EPresleyCV.pdf</a>             | Interview |

After a user inputs a posting ID of 2 and presses the search button.

## 7. Aggregation with Group By



This is a chart displaying the aggregated counts of applications to all postings grouped by day. The user is able to select how many days to look back with the buttons above.

```
[
  RowDataPacket { date: '11/04/2020', count: 1 },
  RowDataPacket { date: '11/06/2020', count: 3 },
  RowDataPacket { date: '11/07/2020', count: 3 },
  RowDataPacket { date: '11/08/2020', count: 1 },
  RowDataPacket { date: '11/09/2020', count: 1 },
  RowDataPacket { date: '11/10/2020', count: 1 },
  RowDataPacket { date: '11/11/2020', count: 1 },
  RowDataPacket { date: '11/12/2020', count: 1 }
]
```

Data returned from the database.

## 8. Aggregation with Having

### # of Applications per Open Posting

Min. # of Apps

SEARCH

| Posting ID | Job Title | Date Posted | # of Applications |
|------------|-----------|-------------|-------------------|
|------------|-----------|-------------|-------------------|

This table shows a list of currently open postings and the aggregated count of applications to them. The user can specify a minimum number of applications required to show up in the table.

### # of Applications per Open Posting

Min. # of Apps  
2

SEARCH

| Posting ID | Job Title                            | Date Posted | # of Applications |
|------------|--------------------------------------|-------------|-------------------|
| 6          | Ruby Ninja                           | 10/01/2020  | 2                 |
| 0          | Software Development Engineer        | 11/01/2020  | 3                 |
| 1          | Senior Software Development Engineer | 11/01/2020  | 2                 |
| 5          | Google Research Lead                 | 11/01/2020  | 3                 |

The table after the user specified a minimum of 2 applications.

## 9. Nested Aggregation with Group By

### Company with Highest Avg Salary

SEARCH

| Company Name | Avg Salary |
|--------------|------------|
|--------------|------------|

This component displays a nested aggregation with group by to compare and return the company with the highest average salary.

### Company with Highest Avg Salary

SEARCH

| Company Name | Avg Salary |
|--------------|------------|
| Amazon       | \$1000000  |

UI after the user clicks the search button.

## 10. Division

### Job Applicant Table

LAST 7 DAYS

LAST 14 DAYS

LAST 30 DAYS

LAST 90 DAYS

| Posting ID | Job Title                            | Date Posted |                                     |
|------------|--------------------------------------|-------------|-------------------------------------|
| 0          | Software Development Engineer        | 11/01/2020  | <input checked="" type="checkbox"/> |
| 1          | Senior Software Development Engineer | 11/01/2020  | <input type="checkbox"/>            |
| 2          | Software Engineer Intern             | 11/05/2020  | <input checked="" type="checkbox"/> |
| 3          | General Manager                      | 11/01/2020  | <input type="checkbox"/>            |
| 4          | COBOL Developer                      | 11/01/2020  | <input type="checkbox"/>            |
| 5          | Google Research Lead                 | 11/01/2020  | <input type="checkbox"/>            |
| 7          | EECS Professor                       | 11/01/2020  | <input type="checkbox"/>            |
| 8          | Literature Professor                 | 11/01/2020  | <input type="checkbox"/>            |

SEARCH FOR SELECTED

| Name | Email | Resume |
|------|-------|--------|
|------|-------|--------|

This overall UI uses parts of the UI from the selection query, which returns a list of jobs posted in the last X days. The user can then select a list of jobs and press the “Search for Selected” button, which returns a list of applicants who have applied to all of the selected jobs.

### Job Applicant Table

LAST 7 DAYS

LAST 14 DAYS

LAST 30 DAYS

LAST 90 DAYS

| Posting ID | Job Title                            | Date Posted |                                     |
|------------|--------------------------------------|-------------|-------------------------------------|
| 0          | Software Development Engineer        | 11/01/2020  | <input checked="" type="checkbox"/> |
| 1          | Senior Software Development Engineer | 11/01/2020  | <input type="checkbox"/>            |
| 2          | Software Engineer Intern             | 11/05/2020  | <input checked="" type="checkbox"/> |
| 3          | General Manager                      | 11/01/2020  | <input type="checkbox"/>            |
| 4          | COBOL Developer                      | 11/01/2020  | <input type="checkbox"/>            |
| 5          | Google Research Lead                 | 11/01/2020  | <input type="checkbox"/>            |
| 7          | EECS Professor                       | 11/01/2020  | <input type="checkbox"/>            |
| 8          | Literature Professor                 | 11/01/2020  | <input type="checkbox"/>            |

SEARCH FOR SELECTED

| Name           | Email                   | Resume                                     |
|----------------|-------------------------|--|
| Elvis Presley  | epresley@comcast.net    | <a href="#">EPresleyCV.pdf</a>             |
| Paul McCartney | paulmmccartney@live.com | <a href="#">Paul_McCartnery_Resume.pdf</a> |

After pressing “Search for selected”.