CPSC 304 Project Cover Page

Milestone #: 4

Date: April 5, 2023

Group Number: 71

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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

Job Portal Database

Project Description

Our final project is a website for a job portal system built using PHP, SQL, HTML and CSS. The main domain of the application includes companies posting jobs and job seekers searching and applying for jobs. The system models relevant information such as contact details, education, and skills for employers to evaluate, and job positions, salary/wage, and application deadlines for the applicants to consider. The "applies" relationship between jobs and applicants is the main function of the database.

Our application provides multiple different pages, directed to both job applicants and companies using this system, and they can access them directly from the navigation bar on the home page. This allows both sides to easily find resources that match their needs. On the applicant side of the webpage, users are able to create accounts and browse offered jobs that match their preferences, as well as find data on jobs (such as which category has the highest salary or which company offers both remote and in person work options) through displayed tables. From the company pages, companies can create accounts in the system to make job postings for the users to assess.

Description of Final Schema Differences

- For Job1 and Branch, we removed ON UPDATE CASCADE since oracle does not support this action
- For Job1, we changed ON DELETE SET NULL to ON DELETE CASCADE, since if a company is deleted, it would make more sense to delete any job postings with it
- For Job1, we made companyID not null, since it doesn't make sense for a job without a company to be posted
- We changed the remote field in Job1 to be type varchar since jobs nowadays aren't exactly remote or not, they could be hybrid, or require on site work but remains online, etc. so we changed it to varchar to better represent that
- Changed any dates to just be a string, since our project does not use the dates besides for informative purposes, we switched to a string (aka varchar) to avoid needless complexity
- Changed wage for parttime and fulltime jobs to be an integer since it makes more sense since its a numeric option
- Added postal code to branch and job_has_location since that's needed for location
- Added ON DELETE CASCADE to FullTimeJob, PartTimeJob, InternshipJob, Employs, Applies, and Requires
- Changed from ON DELETE SET NULL to ON DELETE CASCADE for Branch because it does not make sense for a branch to exist if a company is deleted

Schemas and Data After Running Script

Company (CompanyID: integer, Name: string, NumberOfEmployees: integer)

COMPANYID	NAME	NUMBEROFEMPLOYEES
1	Amazon	1541000
2	Aritzia	6569
3	PepsiCo	315000
4	Apple	164000
5	SAP	111961
6	Coke	10900
7	TD	1456
8	UBC	1200
9	Tom Ford	200

Job1(JobID: integer, ApplicationDeadline: string, Remote: string, PositionName: string, StartDate: date, **CompanyID**: integer)

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
4	2023-06-30	no	Graphic Designer	2023-09-01	4
5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
12	2023-10-15	no	Legal Assistant	2023-12-01	2
13	2023-10-31	yes	Product Manager	2024-01-15	3
14	2023-11-15	no	Sales Representative	2024-02-01	4
15	2023-12-01	yes	Software Developer	2024-02-01	5
16	2023-11-21	yes	Legal Assistantr	2024-07-01	6
17	2022-10-21	yes	Software Developer	2024-03-04	6
18	2023-10-31	no	Software Developer	2024-03-01	7
19	2023-11-11	no	Sales Representative	2023-03-21	8

Job2(PositionName: string, JobCategory: string)

POSITIONNAME	JOBCATEGORY
Salesmen	Sales
Software Engineer	IT
Marketing Manager	Marketing
Graphic Designer	Design
Customer Support Representative	CustomerService
Accountant	Finance
Web Developer	IT
Human Resources Manager	HR
Social Media Specialist	Marketing
Office Manager	Administration
Data Analyst	IT
Legal Assistant	Legal
Product Manager	Management
Sales Representative	Sales
Software Developer	IT

FullTimeJob (**JobID**: integer, Salary: integer)

JOBID	SALARY
1	50000
2	70000
3	50000
4	30000
5	36000
16	38000
17	115000
18	95000
19	36000

PartTimeJob (**JobID**: integer, HoursPerWeek: integer, Wage: integer)

JOBID	HOURSPERWEEK	WAGE
6	15	17
7	20	30
8	20	35
9	7	23
10	10	19

InternshipJob (**JobID**: integer, Duration: integer, Wage: integer)

JOBID	DURATION	WAGE
11	8	17
12	12	21
13	8	28
14	9	19
15	16	32

HiringManager (Email: string, PhoneNumber: string, Name: string)

EMAIL	PHONENUMBER	NAME
smith@ubc.ca	7781234567	John Smith
sharon@outlook.com	1234567890	Sharon Lee
oliver@gmail.com	6874706123	Oliver Jones
jon@hotmail.com	42810274208	Jon Williams
emma@yahoo.com	138297382	Emma Brown

Location1(Country: string, PostalCode: string, Province: string)

COUNTRY	POSTALCODE	PROVINCE
Canada	V6C 2G8	British Columbia
Canada	V3N 2N7	British Columbia
United States of America	90001	California
Canada	T2R 1M4	Alberta
Canada	N6A 3K7	Ontario

Location3(Country: string, PostalCode: string, City: string)

COUNTRY	POSTALCODE	CITY
Canada	V6C 2G8	Vancouver
Canada	V3N 2N7	Burnaby
United States of America	90001	Los Angeles
Canada	T2R 1M4	Calgary
Canada	N6A 3K7	London

Location4(Country: string, PostalCode: string, Addy: string)

COUNTRY	POSTALCODE	ADDY
Canada	N6A 3K7	1151 Richmond St
Canada	T2R 1M4	1030 10 Ave SW
Canada	V3N 2N7	8098 11th Ave
Canada	V6C 2G8	291 Burrard Street
United States of America	90001	6908 S Central Ave

Branch (BranchName: string, NumberOfEmployees: integer, **CompanyID**: integer, **Country**: string, **Province**: string, City: string, **Addy**: string, **PostalCode**: string)

BRANCHNAME	NUMBEROFEMPLOYEES	COMPANYID	COUNTRY	PROVINCE	CITY	ADDY	POSTALCODE
Vancouver Branch	50	3	Canada	British Columbia	Vancouver	291 Burrard Street	V6C 2G8
Burnaby Branch	35	1	Canada	British Columbia	Burnaby	8098 11th Ave	V3N 2N7
LA Branch	46	2	United States of America	California	Los Angeles	6908 S Central Ave	90001
Calgary Branch	28	4	Canada	Alberta	Calgary	1030 10 Ave SW	T2R 1M4
London Branch	62	5	Canada	Ontario	London	1151 Richmond St	N6A 3K7

Applicant (UserID: integer, Email: string, Name: string, Addy: string, PhoneNumber: string)

USERID	EMAIL	NAME	ADDY	PHONENUMBER
1	johnsmiths@hotmail.com	John Smiths	4621 Flinderation Road	(569)-898-4344
2	bob@gmail.com	Bob Echo	1772 New York Avenue	(677)-442-6726
3	govind@hotmail.com	Govind Nuur	996 Perine Street	(837)-763-6568
4	lilavati@gmail.com	Lilavati Rajani	3282 Union Street	(707)-207-4888
5	neoneela@hotmail.com	Neo Neela	4621 Flinderation Road	(676) 952-0954

Skill (SkillID: integer, SkillName: string, SkillLevel: integer)

SKILLID	SKILLNAME	SKILLLEVEL
1	Teamwork	5
2	Communication	4
3	Problem Solving	5
4	Leadership	3
5	Time Management	4

University of British Columbia, Vancouver
Department of Computer Science

Education (NameOfInstitution: string, Major: string, Degree: string)

NAMEOFINSTITUTION	MAJOR	DEGREE
Stanford University	Computer Science	PHD
University College London	Psychology	Doctorate
University of British Columbia	Marketing	Bachelor
University of Toronto	Cognitive Science	Bachelor
Washington State University	Chemical Engineering	Master

Employs (**CompanyID**: integer, **Email**: string)

COMPANYID	EMAIL
1	smith@ubc.ca
2	sharon@outlook.com
3	oliver@gmail.com
4	jon@hotmail.com
5	emma@yahoo.com

Applies (Status: string, DateApplied: date, **UserID**: integer, **JobID**: integer)

STATUS	DATEAPPLIED	USERID	JOBID
Applied	2023-02-28	1	2
Applied	2023-03-01	2	3
Applied	2023-02-28	3	5
Applied	2023-02-27	4	7
Applied	2023-03-01	5	12

Requires (**JobID**: integer, **SkillID**: integer)

JOBID	SKILLID
1	2
2	3
3	1
4	5
5	4

Job_Has_Location (**JobID**: integer, **Country**: string, **Province**: string, **City**: string, **Addy**: string, PostalCode: string)

JOBID	COUNTRY	PROVINCE	CITY	ADDY	POSTALCODE
1	Canada	British Columbia	Vancouver	291 Burrard Street	V6C 2G8
2	Canada	British Columbia	Burnaby	8098 11th Ave	V3N 2N7
3	United States of America	California	Los Angeles	6908 S Central Ave	90001
4	Canada	Alberta	Calgary	1030 10 Ave SW	T2R 1M4
5	Canada	Ontario	London	1151 Richmond St	N6A 3K7

Applicant_Has_Skill (**UserID**: integer, **SkillID**: integer)

USERID	SKILLID
1	1
1	2
3	1
4	5
5	3

___

Applicant_Has_Education (**UserID**: integer, **NameOfInstitution**: string, **Major**: string, **Degree**: string, YearStarted: integer, YearGraduated: integer)

USERID	NAMEOFINSTITUTION	MAJOR	DEGREE	YEARSTARTED	YEARGRADUATED
1	University of British Columbia	Marketing	Bachelor	2001	2005
2	University of British Columbia	Marketing	Bachelor	2004	2008
1	University of Toronto	Cognitive Science	Bachelor	2016	2021
3	Stanford University	Computer Science	PHD	2016	2020
3	University College London	Psychology	Doctorate	2010	2013

All SQL Queries Used

	File Name (in frontend folder)	Line Number
INSERT	company_postjob.php	321 and 338
DELETE	company_account.php	448
UPDATE	applicant_account.php	381
SELECTION	applicant_browsejobs.php	673
PROJECTION	otherinfo.php	535, 568 and 698
JOIN	applicant_browsejobs.php	703
Aggregation with GROUP BY	applicant_browsejobs.php	587
Aggregation with HAVING	applicant_browsejobs.php	602
Nested Aggregation with GROUP BY	applicant_browsejobs.php	655
DIVISION	applicant_browsejobs.php	643

Screenshots of Queries using GUI

INSERT

Inserting a job requires that the company exist, as well as it inserts into Job1 and Job2

Before:

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
4	2023-06-30	no	Graphic Designer	2023-09-01	4
5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
12	2023-10-15	no	Legal Assistant	2023-12-01	2
13	2023-10-31	yes	Product Manager	2024-01-15	3
14	2023-11-15	no	Sales Representative	2024-02-01	4
15	2023-12-01	yes	Software Developer	2024-02-01	5
16	2023-11-21	yes	Legal Assistantr	2024-07-01	6
17	2022-10-21	yes	Software Developer	2024-03-04	6
18	2023-10-31	no	Software Developer	2024-03-01	7
19	2023-11-11	no	Sales Representative	2023-03-21	8

Job2

POSITIONNAME	JOBCATEGORY
Salesmen	Sales
Software Engineer	IT
Marketing Manager	Marketing
Graphic Designer	Design
Customer Support Representative	CustomerService
Accountant	Finance
Web Developer	IT
Human Resources Manager	HR
Social Media Specialist	Marketing
Office Manager	Administration
Data Analyst	IT
Legal Assistant	Legal
Product Manager	Management
Sales Representative	Sales
Software Developer	IT

Company (just for reference for foreign key constraint)

COMPANYID	NAME	NUMBEROFEMPLOYEES
1	Amazon	1541000
2	Aritzia	6569
3	PepsiCo	315000
4	Apple	164000
5	SAP	111961
6	Coke	10900
7	TD	1456
8	UBC	1200
9	Tom Ford	200

During: User inputs values and clicks post

Home   Applicant   Company   Other Info

Post a New Job

— Job Info —

Job ID (Number) [Required Field]: 58

Application Deadline (yyyy--mm--dd): 2023-06-01

Remote (yes/no): yes

Position Name [Required Field]: Infastructure Analyst

Start Date (yyyy--mm--dd): 2023-07-01

Company ID (Number) [Required Field]: 1

Job Category: IT

Post

After:

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
4	2023-06-30	no	Graphic Designer	2023-09-01	4
5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
12	2023-10-15	no	Legal Assistant	2023-12-01	2
13	2023-10-31	yes	Product Manager	2024-01-15	3
14	2023-11-15	no	Sales Representative	2024-02-01	4
15	2023-12-01	yes	Software Developer	2024-02-01	5
16	2023-11-21	yes	Legal Assistantr	2024-07-01	6
17	2022-10-21	yes	Software Developer	2024-03-04	6
18	2023-10-31	no	Software Developer	2024-03-01	7
19	2023-11-11	no	Sales Representative	2023-03-21	8
58	2023-06-01	yes	Infrastructure Analyst	2023-07-01	1

Job2

POSITIONNAME	JOBCATEGORY
Salesmen	Sales
Software Engineer	IT
Marketing Manager	Marketing
Graphic Designer	Design
Customer Support Representative	CustomerService
Accountant	Finance
Web Developer	IT
Human Resources Manager	HR
Social Media Specialist	Marketing
Office Manager	Administration
Data Analyst	IT
Legal Assistant	Legal
Product Manager	Management
Sales Representative	Sales
Software Developer	IT
Infrastructure Analyst	IT

Company

COMPANYID	NAME	NUMBEROFEMPLOYEES
1	Amazon	1541000
2	Aritzia	6569
3	PepsiCo	315000
4	Apple	164000
5	SAP	111961
6	Coke	10900
7	TD	1456
8	UBC	1200
9	Tom Ford	200

DELETE

Deleting a company deletes affects many other tables, such as Job1, FulltimeJob, Applies etc.

Before:

Company

COMPANYID	NAME	NUMBEROFEMPLOYEES
1	Amazon	1541000
2	Aritzia	6569
3	PepsiCo	315000
4	Apple	164000
5	SAP	111961
6	Coke	10900
7	TD	1456
8	UBC	1200
9	Tom Ford	200

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
4	2023-06-30	no	Graphic Designer	2023-09-01	4
5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
12	2023-10-15	no	Legal Assistant	2023-12-01	2
13	2023-10-31	yes	Product Manager	2024-01-15	3
14	2023-11-15	no	Sales Representative	2024-02-01	4
15	2023-12-01	yes	Software Developer	2024-02-01	5
16	2023-11-21	yes	Legal Assistantr	2024-07-01	6
17	2022-10-21	yes	Software Developer	2024-03-04	6
18	2023-10-31	no	Software Developer	2024-03-01	7
19	2023-11-11	no	Sales Representative	2023-03-21	8

Fulltime job

JOBID	SALARY
1	50000
2	70000
3	50000
4	30000
5	36000
16	38000
17	115000
18	95000
19	36000

Partime job

JOBID	HOURSPERWEEK	WAGE
6	15	17
7	20	30
8	20	35
9	7	23
10	10	19

Internship

JOBID	DURATION	WAGE
11	8	17
12	12	21
13	8	28
14	9	19
15	16	32

Applies

STATUS	DATEAPPLIED	USERID	JOBID
Applied	2023-02-28	1	2
Applied	2023-03-01	2	3
Applied	2023-02-28	3	5
Applied	2023-02-27	4	7
Applied	2023-03-01	5	12

Requires

JOBID	SKILLID
1	2
2	3
3	1
4	5
5	4

Branch

BRANCHNAME	NUMBEROFEMPLOYEES	COMPANYID	COUNTRY	PROVINCE	CITY	ADDY	POSTALCODE
Vancouver Branch	50	3	Canada	British Columbia	Vancouver	291 Burrard Street	V6C 2G8
Burnaby Branch	35	1	Canada	British Columbia	Burnaby	8098 11th Ave	V3N 2N7
LA Branch	46	2	United States of America	California	Los Angeles	6908 S Central Ave	90001
Calgary Branch	28	4	Canada	Alberta	Calgary	1030 10 Ave SW	T2R 1M4
London Branch	62	5	Canada	Ontario	London	1151 Richmond St	N6A 3K7

During:

University of British Columbia, Vancouver
Department of Computer Science

After:

Company

COMPANYID	NAME	NUMBEROFEMPLOYEES
2	Aritzia	6569
3	PepsiCo	315000
4	Apple	164000
5	SAP	111961
6	Coke	10900
7	TD	1456
8	UBC	1200
9	Tom Ford	200

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
4	2023-06-30	no	Graphic Designer	2023-09-01	4
5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
12	2023-10-15	no	Legal Assistant	2023-12-01	2
13	2023-10-31	yes	Product Manager	2024-01-15	3
14	2023-11-15	no	Sales Representative	2024-02-01	4
15	2023-12-01	yes	Software Developer	2024-02-01	5
16	2023-11-21	yes	Legal Assistantr	2024-07-01	6
17	2022-10-21	yes	Software Developer	2024-03-04	6
18	2023-10-31	no	Software Developer	2024-03-01	7
19	2023-11-11	no	Sales Representative	2023-03-21	8

Fulltime job

JOBID	SALARY
1	50000
3	50000
4	30000
5	36000
16	38000
17	115000
18	95000
19	36000

ParttimeJob

JOBID	HOURSPERWEEK	WAGE
7	20	30
8	20	35
9	7	23
10	10	19

InternshipJob

JOBID	DURATION	WAGE
12	12	21
13	8	28
14	9	19
15	16	32

Employs

COMPANYID	EMAIL
2	sharon@outlook.com
3	oliver@gmail.com
4	jon@hotmail.com
5	emma@yahoo.com

Applies

STATUS	DATEAPPLIED	USERID	JOBID
Applied	2023-03-01	2	3
Applied	2023-02-28	3	5
Applied	2023-02-27	4	7
Applied	2023-03-01	5	12

Requires

JOBID	SKILLID
1	2
3	1
4	5
5	4

Branch

BRANCHNAME	NUMBEROFEMPLOYEES	COMPANYID	COUNTRY	PROVINCE	CITY	ADDY	POSTALCODE
Vancouver Branch	50	3	Canada	British Columbia	Vancouver	291 Burrard Street	V6C 2G8
LA Branch	46	2	United States of America	California	Los Angeles	6908 S Central Ave	90001
Calgary Branch	28	4	Canada	Alberta	Calgary	1030 10 Ave SW	T2R 1M4
London Branch	62	5	Canada	Ontario	London	1151 Richmond St	N6A 3K7

UPDATE
Update account information

Before:

Applicant

USERID	EMAIL	NAME	ADDY	PHONENUMBER
1	johnsmiths@hotmail.com	John Smiths	4621 Flinderation Road	(569)-898-4344
2	bob@gmail.com	Bob Echo	1772 New York Avenue	(677)-442-6726
3	govind@hotmail.com	Govind Nuur	996 Perine Street	(837)-763-6568
4	lilavati@gmail.com	Lilavati Rajani	3282 Union Street	(707)-207-4888
5	neoneela@hotmail.com	Neo Neela	4621 Flinderation Road	(676) 952-0954

During:

After:

Applicant

USERID	EMAIL	NAME	ADDY	PHONENUMBER
1	johnsmiths@hotmail.com	John Smiths	281 Confederation St.	(569)-898-4344
2	bob@gmail.com	Bob Echo	1772 New York Avenue	(677)-442-6726
3	govind@hotmail.com	Govind Nuur	996 Perine Street	(837)-763-6568
4	lilavati@gmail.com	Lilavati Rajani	3282 Union Street	(707)-207-4888
5	neoneela@hotmail.com	Neo Neela	4621 Flinderation Road	(676) 952-0954

SELECTION

The user can select a job category they would like to see all job postings for

Before:

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
4	2023-06-30	no	Graphic Designer	2023-09-01	4
5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
12	2023-10-15	no	Legal Assistant	2023-12-01	2
13	2023-10-31	yes	Product Manager	2024-01-15	3
14	2023-11-15	no	Sales Representative	2024-02-01	4
15	2023-12-01	yes	Software Developer	2024-02-01	5
16	2023-11-21	yes	Legal Assistantr	2024-07-01	6
17	2022-10-21	yes	Software Developer	2024-03-04	6
18	2023-10-31	no	Software Developer	2024-03-01	7
19	2023-11-11	no	Sales Representative	2023-03-21	8

Job2

POSITIONNAME	JOBCATEGORY
Salesmen	Sales
Software Engineer	IT
Marketing Manager	Marketing
Graphic Designer	Design
Customer Support Representative	CustomerService
Accountant	Finance
Web Developer	IT
Human Resources Manager	HR
Social Media Specialist	Marketing
Office Manager	Administration
Data Analyst	IT
Legal Assistant	Legal
Product Manager	Management
Sales Representative	Sales
Software Developer	IT

During:

After/end of during:

Job ID	Position Name	Job Category	Job is Remote	Job Start Date	Application Deadline	Company ID
1	Salesmen	Sales	no	2023-09-01	2023-05-23	3
14	Sales Representative	Sales	no	2024-02-01	2023-11-15	4
19	Sales Representative	Sales	no	2023-03-21	2023-11-11	8

PROJECTION

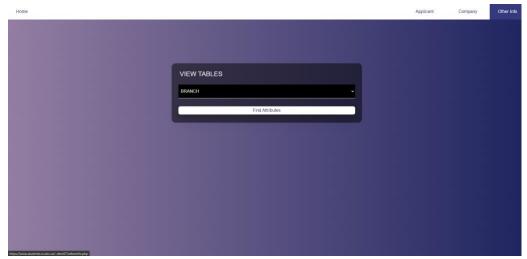User selects a table and selects any number of columns they would like

Before:

Branch

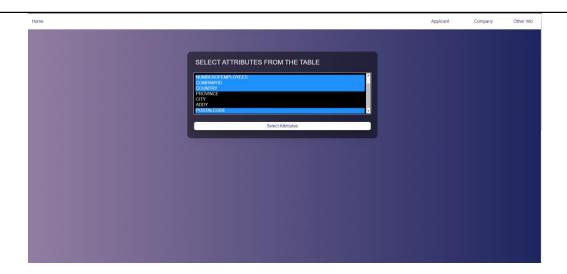| BRANCHNAME	NUMBEROFEMPLOYEES	COMPANYID	COUNTRY	PROVINCE	CITY	ADDY	POSTALCODE
Vancouver Branch	50	3	Canada	British Columbia	Vancouver	291 Burrard Street	V6C 2G8
Burnaby Branch	35	1	Canada	British Columbia	Burnaby	8098 11th Ave	V3N 2N7
LA Branch	46	2	United States of America	California	Los Angeles	6908 S Central Ave	90001
Calgary Branch	28	4	Canada	Alberta	Calgary	1030 10 Ave SW	T2R 1M4
London Branch	62	5	Canada	Ontario	London	1151 Richmond St	N6A 3K7

During:

University of British Columbia, Vancouver
Department of Computer Science

After:

JOIN

User can select a companyID, and find the name and all job postings of that company
This is a join on job1, job2, and company

Before:

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
4	2023-06-30	no	Graphic Designer	2023-09-01	4
5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
12	2023-10-15	no	Legal Assistant	2023-12-01	2
13	2023-10-31	yes	Product Manager	2024-01-15	3
14	2023-11-15	no	Sales Representative	2024-02-01	4
15	2023-12-01	yes	Software Developer	2024-02-01	5
16	2023-11-21	yes	Legal Assistantr	2024-07-01	6
17	2022-10-21	yes	Software Developer	2024-03-04	6
18	2023-10-31	no	Software Developer	2024-03-01	7
19	2023-11-11	no	Sales Representative	2023-03-21	8

Job2

POSITIONNAME	JOBCATEGORY
Salesmen	Sales
Software Engineer	IT
Marketing Manager	Marketing
Graphic Designer	Design
Customer Support Representative	CustomerService
Accountant	Finance
Web Developer	IT
Human Resources Manager	HR
Social Media Specialist	Marketing
Office Manager	Administration
Data Analyst	IT
Legal Assistant	Legal
Product Manager	Management
Sales Representative	Sales
Software Developer	IT

Company

COMPANYID	NAME	NUMBEROFEMPLOYEES
1	Amazon	1541000
2	Aritzia	6569
3	PepsiCo	315000
4	Apple	164000
5	SAP	111961
6	Coke	10900
7	TD	1456
8	UBC	1200
9	Tom Ford	200

During:

After/end of during:

GROUP BY

The user can click a button that will show every job category, and how many job postings are on there
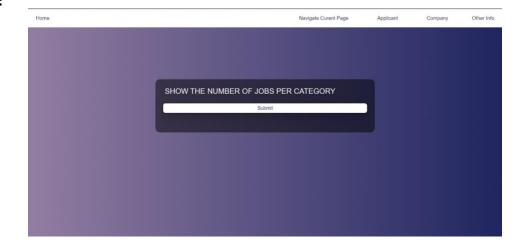
Before:

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
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5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
12	2023-10-15	no	Legal Assistant	2023-12-01	2
13	2023-10-31	yes	Product Manager	2024-01-15	3
14	2023-11-15	no	Sales Representative	2024-02-01	4
15	2023-12-01	yes	Software Developer	2024-02-01	5
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17	2022-10-21	yes	Software Developer	2024-03-04	6
18	2023-10-31	no	Software Developer	2024-03-01	7
19	2023-11-11	no	Sales Representative	2023-03-21	8

Job2

POSITIONNAME	JOBCATEGORY
Salesmen	Sales
Software Engineer	IT
Marketing Manager	Marketing
Graphic Designer	Design
Customer Support Representative	CustomerService
Accountant	Finance
Web Developer	IT
Human Resources Manager	HR
Social Media Specialist	Marketing
Office Manager	Administration
Data Analyst	IT
Legal Assistant	Legal
Product Manager	Management
Sales Representative	Sales
Software Developer	IT

During:

Home		Navigate Curent Page	Applicant	Company	Other Info

SHOW THE NUMBER OF JOBS PER CATEGORY

Submit

After/During:

Found Number of Jobs grouped by category:

Job Category	Number of Jobs in Category
Sales	3
CustomerService	1
Marketing	2
HR	1
Administration	1
Legal	1
IT	6
Finance	1
Design	1
Management	1

AGGREGATION WITH HAVING
The user can click a button that will show every company that is hiring more than 1 employee

Before:

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
4	2023-06-30	no	Graphic Designer	2023-09-01	4
5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
9	2023-08-15	yes	Social Media Specialist	2023-11-01	4
10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
12	2023-10-15	no	Legal Assistant	2023-12-01	2
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19	2023-11-11	no	Sales Representative	2023-03-21	8

Company

COMPANYID	NAME	NUMBEROFEMPLOYEES
1	Amazon	1541000
2	Aritzia	6569
3	PepsiCo	315000
4	Apple	164000
5	SAP	111961
6	Coke	10900
7	TD	1456
8	UBC	1200
9	Tom Ford	200

During:

After/end of during:

Found employers looking for more than 1 employee:

Employer	Number of employees being hired
PepsiCo	3
Amazon	3
SAP	3
Apple	3
Coke	2
Aritzia	3

NESTED AGGREGATION WITH GROUP BY
The user can click a button to find the job category with the highest average salary

Before:

Job1

JOBID	APPLICATIONDEADLINE	REMOTE	POSITIONNAME	STARTDATE	COMPANYID
1	2023-05-23	no	Salesmen	2023-09-01	3
2	2023-06-15	yes	Software Engineer	2023-09-01	1
3	2023-05-31	yes	Marketing Manager	2023-08-15	2
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5	2023-06-30	yes	Customer Support Representative	2023-08-15	5
6	2023-06-30	no	Accountant	2023-08-01	1
7	2023-07-15	yes	Web Developer	2023-10-01	2
8	2023-07-31	no	Human Resources Manager	2023-09-15	3
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10	2023-09-01	no	Office Manager	2023-11-15	5
11	2023-09-30	yes	Data Analyst	2024-01-01	1
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Job2

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Salesmen	Sales
Software Engineer	IT
Marketing Manager	Marketing
Graphic Designer	Design
Customer Support Representative	CustomerService
Accountant	Finance
Web Developer	IT
Human Resources Manager	HR
Social Media Specialist	Marketing
Office Manager	Administration
Data Analyst	IT
Legal Assistant	Legal
Product Manager	Management
Sales Representative	Sales
Software Developer	IT

Salary

JOBID	SALARY
1	50000
2	70000
3	50000
4	30000
5	36000
16	38000
17	115000
18	95000
19	36000

University of British Columbia, Vancouver
Department of Computer Science

During:

After/end of during:

The job sector with the highest average salary in current job postings is: IT

DIVISION

The user can click a button that will find all companies that are hiring for both in person and remote positions
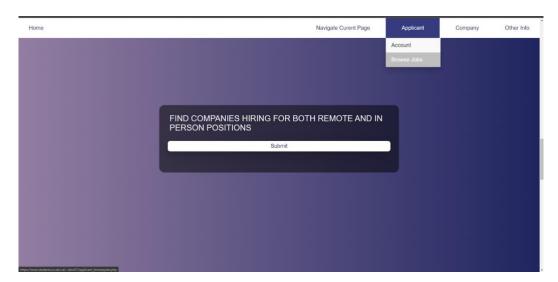
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COMPANYID	NAME	NUMBEROFEMPLOYEES
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4	Apple	164000
5	SAP	111961
6	Coke	10900
7	TD	1456
8	UBC	1200
9	Tom Ford	200

Job1

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19	2023-11-11	no	Sales Representative	2023-03-21	8

During:

After: