University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: _____4___

Date: _____November 25, 2022_____

Group Number: _____15_____

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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

Link to our Repository:

A short description of the final project, and what it accomplished

ApplyDay
We have created a job application platform for job seekers, HR recruiters and companies. A company can make a job posting and assign it to a recruiter. A recruiter works for a company and has access to all the applications for a specific posting. It is accomplished using Java Swing library with JDBC as the relational database.

A company can create a new job posting or update an existing job posting with the relevant information.

A recruiter who works for a company can see the applications for that job posting
A recruiter can see applicant stats such as names of applicants with more than 2 previous internship experiences, and people who have applied to all job postings.

An applicant can log in and see all of their applications and view all job postings.
An applicant can filter job postings by job type such as Internship, FullTime, All to show all.
x
An applicant can see job postings stats such as average pay for each job type.
An applicant can see the number of above average pay postings in each job type for each company's postings.

A description of how your final schema differed from the schema you turned in
   ● **If the final schema differed, explain why**

We have added new attributes, title and content, to the CoverLetter entity as we have forgotten to do so for the previous milestones. We also changed the Referral entity's primary key's name to referralID from employeeID to account for the fact that the same employee may make multiple referrals.

We added jobType to JobPostings Table to distinguish between Internship and FullTime job postings for easier development down the road to develop SQL queries, which allowed user to filter job postings by type.

Screenshots that show what data is present in each relation after the SQL script is run

JobLocation Relation

	LOCATION	VISAREQUIREMENT
1	Mountain View, CA, USA	1
2	Calgary, AB, Canada	0
3	Menlo Park, CA, USA	1
4	Seattle, WA, USA	1
5	Vancouver, BC, Canada	0

ApplicationHasWork Relation

	APPLICANTID	APPLICATIONID	COMPANYNAME	JOBTITLE
1	2201	12201	Google	Software Engineering Intern
2	2201	12201	Nuro	Software Engineering Intern
3	2202	12202	SAP	Software Engineering Intern
4	2203	12203	Meta	QA Intern
5	2204	12204	Amazon	Software Engineering Intern
6	2205	12205	Netflix	Product Management Intern

WorkExperience Relation

	APPLICANTID	COMPANYNAME	JOBTITLE	STARTDATE	ENDDATE	DESCRIPTION
1	2201	Google	Software Engineering Intern	2022-05-02	2022-08-31	worked on different google services
2	2201	Nuro	Software Engineering Intern	2021-05-02	2021-08-31	worked self driving technologies
3	2201	RobinHood	Site Reliability Engineering Intern	2020-05-02	2020-08-31	worked on web services
4	2202	SAP	Software Engineering Intern	2022-01-02	2022-08-31	created full stack application
5	2202	RobinHood	Site Reliability Engineering Intern	2020-05-02	2020-08-31	worked on web services
6	2202	Netflix	Software Engineering Intern	2021-05-02	2021-08-31	worked self driving technologies
7	2203	Meta	QA Intern	2022-05-02	2022-08-21	created auto test suits
8	2204	Amazon	Software Engineering Intern	2022-06-02	2022-08-31	worked on Alexa services
9	2205	Netflix	Product Management Intern	2022-05-02	2022-08-31	worked with PM to carryout daily scrums

ApplicationHasEducation Relation

	APPLICANTID	APPLICATIONID	SCHOOLNAME	DEGREE
1	2201	12201	The University of British Columbia	Bachelor of Science
2	2202	12202	Simon Fraser University	Bachelor of Science
3	2203	12203	Queen's University	Bachelor of Arts
4	2204	12204	The University of Toronto	Bachelor of Applied Science
5	2205	12205	The University of British Columbia	Bachelor of Science

Education Relation

	APPLICANTID	SCHOOLNAME	DEGREE	MAJOR	GPA	ENDDATE	STARTDATE
1	2201	The University of British Columbia	Bachelor of Science	Computer Science	80	2024-05-30	2017-09-06
2	2202	Simon Fraser University	Bachelor of Science	Computer Science	85	2023-05-30	2019-09-06
3	2203	Queen's University	Bachelor of Arts	Psychology	90	2023-05-31	2017-09-06
4	2204	The University of Toronto	Bachelor of Applied Science	Electrical Engineering	70	2023-05-30	2017-09-06
5	2205	The University of British Columbia	Bachelor of Science	Biology	82	2024-05-30	2021-09-09

JobInfo Relation

	POSITIONNAME	COMPANYID	SALARY
1	Software Engineer Intern	871270	50000
2	Software Engineer	280953	170000
3	Warehouse Assistant	423880	140000
4	Machine Learning Researcher	325431	60000
5	Supply Chain Program Manager	325431	80000
6	Account Executive	325431	100000
7	AI Engineer Intern	325431	60000
8	Partner Support Specialist	325431	110000

JobRecruiter Relation

Recruiter Relation

ReferralBonus Relation

Application Relation

	APPLICATIONID	STATUS	DATESUBMITTED	APPLICANTID	REFERRALID	JOBID	COVERLETTERID
1	12201	submitted	2022-10-01	2201	200001	487382	382720
2	12202	rejected	2022-11-01	2202	200002	479134	592781
3	12206	rejected	2022-11-01	2201	<null>	479134	592781
4	12203	in progress	2022-09-01	2203	200003	390839	672091
5	12207	in progress	2022-09-01	2201	<null>	390839	672091
6	12204	hired	2022-08-24	2204	200004	478762	187930
7	12205	withdrawn	2022-09-16	2205	200005	583093	593819
8	555555	submitted	2022-09-16	2201	200005	583093	593819
9	111111	submitted	2022-09-16	2205	<null>	129683	593819
10	222222	submitted	2022-09-16	2205	<null>	478762	593819
11	333333	submitted	2022-09-16	2205	<null>	888643	593819
12	444444	submitted	2022-09-16	2205	<null>	111998	593819

CoverLetterRelation

	COVERLETTERID	TITLE	CONTENT	APPLICANTID
1	382720	coverletter for SDE intern	Dear Hiring Manager… <omitted>	2201
2	592781	coverletter for QA intern	I believe I have accumulated… <omitted>	2202
3	672091	coverletter for my dream job	I'm confident that I'm a great fit… <omitted>	2203
4	187930	coverletter for job I like	Please consider me as the candidate… <omitted>	2204
5	593819	coverletter general	I assert that I am the best applicant… <omitted>	2205

Applicant Relation

	USERID		ADDRESS	PASSWORD	PHONENUMBER	EMAIL	REQUIREVISASPONSOR
1	2201	Danny Hu	101 Bay Street Toronto Ontario Canada	Ca123456	6050402238	dannyhuo06@ubc.ca	1
2	2202	Mike Simpson	5621 West Street, Kingston, Ontario, Canada	Canada223	6040402238	ms56226@ubc.ca	1
3	2203	Jason Doo	101 1st Ave, Vancouver, British Columbia, Canada	Password0011	6043321123	jason5542@ubc.ca	1
4	2204	Chirs Mullen	5621 West Street, Kingston, Ontario, Canada	Password2333	7780402238	mullen56226@ubc.ca	0
5	2205	David Thompson	5621 West Street, Kingston, Ontario, Canada	Password2003	6050455238	dt503226@ubc.ca	0

JobPosting Relation

(had to split in half since it wouldn't fit, two screenshots below should be placed next to each other horizontally as one table/relation)

	JOBID	DATEPOSTED	DEADLINE	POSITIONNAME	COMPANYID	COMPANYNAME	RECRUITERID	JOBTYPE
1	487382	2022-10-01	2022-10-31	Software Engineer Intern	871270	Netflix	100000	Internship
2	479134	2022-09-30	2022-10-07	Software Engineer	280953	Meta	100001	Internship
3	390839	2022-10-07	2022-11-07	Warehouse Assistant	423880	Amazon	100002	FullTime
4	666666	2022-10-07	2022-11-07	Warehouse Assistant	423880	Amazon	100002	FullTime
5	583093	2022-10-20	2022-11-01	Machine Learning Researcher	325431	Google	100004	Internship
6	129683	2022-10-20	2022-11-01	Supply Chain Program Manager	325431	Google	100004	FullTime
7	478762	2022-10-20	2022-11-01	Account Executive	325431	Google	100004	FullTime
8	888643	2022-10-20	2022-11-01	AI Engineer Intern	325431	Google	100004	Internship
9	111998	2022-10-20	2022-11-01	Partner Support Specialist	325431	Google	100004	FullTime

Referral Relation

	REFERRALID	NAMEOFEMPLOYEE	APPLICATIONID	COMPANYID
1	200001	Mike Ross	12201	871270
2	200002	Josh Armstrong	12202	280953
3	200003	Jeff Bezos	12203	423880
4	200004	Dan Green	12204	325431
5	200005	Chi Apachi	12205	325431

Company Relation

	COMPANYID	NAME	ADDRESS	PASSWORD
1	325431	Google	1600 Amphitheatre Parkway, Mountain View, CA 94043, USA	password123
2	423880	Amazon	410 Terry Ave. N, Seattle, WA 98109, USA	password123
3	280953	Meta	1 Hacker Way, Menlo Park, CA 94025, USA	sdjkfhsjf8jnfd
4	871270	Netflix	100 Winchester Circle, Los Gatos, CA 95032, USA	f2j59gdj3i9
5	16498	Apple	One Apple Park Way, Cupertino, CA 95014, USA	9kmjdikc8982j

A copy of the schema below + A list of all SQL queries used

DatabsetSetup queries

```
DROP TABLE JobLocation;
DROP TABLE ApplicationHasWork;
DROP TABLE WorkExperience;
DROP TABLE ApplicationHasEducation;
DROP TABLE Education;
DROP TABLE JobInfo;
DROP TABLE JobRecruiter;
DROP TABLE Recruiter;
DROP TABLE ReferralBonus;
DROP TABLE Application;
```

```sql
DROP TABLE CoverLetter;
DROP TABLE Applicant;
DROP TABLE JobPosting;
DROP TABLE Referral;
DROP TABLE Company;

CREATE TABLE Applicant(
                        userID INTEGER PRIMARY KEY,
                        name varchar2(200) NOT NULL,
                        address varchar2(200),
                        password varchar2(200) NOT NULL,
                        phoneNumber varchar2(200),
                        email varchar2(200) UNIQUE NOT NULL,
                        requireVisaSponsor INTEGER
);

CREATE TABLE JobPosting(
                        jobID INTEGER PRIMARY KEY,
                        datePosted DATE,
                        deadline DATE NOT NULL,
                        positionName varchar2(100),
                        companyID INTEGER NOT NULL,
                        companyName varchar2(100),
                        recruiterID INTEGER NOT NULL,
                        jobType varchar2(100) NOT NULL,
                        skills varchar2(500),
                        location varchar2(100),
                        education varchar2(100),
                        startDate DATE,
                        endDate DATE
);


CREATE TABLE JobLocation(
                        location varchar2(80) PRIMARY KEY,
                        visaRequirement INTEGER NOT NULL
);

CREATE TABLE Company(
                        companyID INTEGER PRIMARY KEY,
                        name varchar2(80) NOT NULL,
                        address varchar2(80) NOT NULL,
                        password varchar2(80) NOT NULL
);

CREATE TABLE ReferralBonus(
                        companyID INTEGER PRIMARY KEY,
                        signOnBonus INTEGER NOT NULL,
```

```sql
                           FOREIGN KEY (companyID) REFERENCES
Company(companyID) ON DELETE CASCADE
);

CREATE TABLE JobInfo(
                     positionName varchar2(100),
                     companyID INTEGER NOT NULL,
                     salary INTEGER,
                     PRIMARY KEY (positionName, companyID),
                     FOREIGN KEY (companyID) REFERENCES Company(companyID)
ON DELETE CASCADE
);

CREATE TABLE CoverLetter(
                       coverLetterID INTEGER PRIMARY KEY,
                       title varchar2(80) NOT NULL,
                       content CLOB,
                       applicantID INTEGER NOT NULL,
                       FOREIGN KEY (applicantID) REFERENCES
Applicant(userID) on DELETE CASCADE
);

CREATE TABLE Recruiter(
                       recruiterID INTEGER PRIMARY KEY,
                       name varchar2(80) NOT NULL,
                       password varchar2(80) NOT NULL,
                       companyID INTEGER NOT NULL,
                       FOREIGN KEY (companyID) REFERENCES Company(companyID)
ON DELETE CASCADE
);

CREATE TABLE JobRecruiter(
                         recruiterID INTEGER PRIMARY KEY,
                         location varchar2(50) NOT NULL,
                         FOREIGN KEY (recruiterID) REFERENCES
Recruiter(recruiterID) ON DELETE CASCADE
);

CREATE TABLE Referral(
                       referralID INTEGER PRIMARY KEY,
                       nameOfEmployee varchar2(50) NOT NULL,
                       applicationID INTEGER NOT NULL,
                       companyID INTEGER NOT NULL,
                       FOREIGN KEY (companyID) REFERENCES Company(companyID)
ON DELETE CASCADE
);

CREATE TABLE Application(
                         applicationID INTEGER PRIMARY KEY,
```

```sql
                                    status varchar2(20) NOT NULL,
                                    dateSubmitted DATE NOT NULL,
                                    applicantID INTEGER NOT NULL,
                                    referralID INTEGER,
                                    jobID INTEGER NOT NULL,
                                    coverLetterID INTEGER,
                                    FOREIGN KEY (applicantID) REFERENCES
Applicant(userID) ON DELETE CASCADE,
                                    FOREIGN KEY (referralID) REFERENCES
Referral(referralID) ON DELETE SET NULL,
                                    FOREIGN KEY (jobID) REFERENCES JobPosting(jobID) ON
DELETE CASCADE,
                                    FOREIGN KEY (coverLetterID) REFERENCES
CoverLetter(coverLetterID) ON DELETE SET NULL
);

CREATE TABLE WorkExperience(
                                    applicantID INTEGER,
                                    companyName varchar2(80),
                                    jobTitle varchar2(80),
                                    startDate DATE NOT NULL,
                                    endDate DATE,
                                    description varchar2(200),
                                    PRIMARY KEY (applicantID, companyName,
jobTitle),
                                        FOREIGN KEY (applicantID) REFERENCES
Applicant(userID) ON DELETE CASCADE
);

CREATE TABLE Education(
                                    applicantID INTEGER,
                                    schoolName varchar2(50),
                                    degree varchar2(50),
                                    major varchar2(50) NOT NULL,
                                    gpa INTEGER NOT NULL,
                                    endDate DATE,
                                    startDate DATE NOT NULL,
                                    PRIMARY KEY (applicantID, schoolName, degree),
                                        FOREIGN KEY (applicantID) REFERENCES
Applicant(userID) ON DELETE CASCADE
);

CREATE TABLE ApplicationHasWork(
                                    applicantID INTEGER,
                                    applicationID INTEGER,
                                    companyName varchar2(80),
                                    jobTitle varchar2(80),
                                    PRIMARY KEY (applicantID, applicationID,
companyName, jobTitle),
```

```sql
                                        FOREIGN KEY (applicantID) REFERENCES
Applicant(userID) ON DELETE CASCADE,
                                        FOREIGN KEY (applicationID) REFERENCES
Application(applicationID) ON DELETE CASCADE,
                                        FOREIGN KEY (applicantID, companyName,
jobTitle) REFERENCES WorkExperience(applicantID, companyName, jobTitle) ON
DELETE CASCADE
);

CREATE TABLE applicationHasEducation(
                                        applicantID INTEGER,
                                        applicationID INTEGER,
                                        schoolName varchar2(80),
                                        degree varchar2(80),
                                        PRIMARY KEY (applicantID,
applicationID, schoolName, degree),
                                                FOREIGN KEY (applicantID)
REFERENCES Applicant(userID) ON DELETE CASCADE,
                                                FOREIGN KEY (applicationID)
REFERENCES Application(applicationID) ON DELETE CASCADE,
                                                FOREIGN KEY (applicantID,
schoolName, degree) REFERENCES Education(applicantID, schoolName, degree) ON
DELETE CASCADE
);

--insert applicant
INSERT INTO Applicant VALUES(2201, 'Danny Hu', '101 Bay Street Toronto Ontario
Canada', 'Ca123456', '6050402238', 'dannyhuo06@ubc.ca', 1);
INSERT INTO Applicant VALUES (2202, 'Mike Simpson', '5621 West Street,
Kingston, Ontario, Canada', 'Canada223', '6040402238', 'ms56226@ubc.ca', 1);
INSERT INTO Applicant VALUES (2203, 'Jason Doo', '101 1st Ave, Vancouver,
British Columbia, Canada', 'Password0011', '6043321123', 'jason5542@ubc.ca',
1);
INSERT INTO Applicant VALUES (2204, 'Chirs Mullen', '5621 West Street,
Kingston, Ontario, Canada', 'Password2333', '7780402238',
'mullen56226@ubc.ca', 0);
INSERT INTO Applicant VALUES (2205, 'David Thompson', '5621 West Street,
Kingston, Ontario, Canada', 'Password2003', '6050455238', 'dt503226@ubc.ca',
0);

--insert jobPosting
INSERT INTO JobPosting VALUES (487382, '20221001', '20221031', 'Software
Engineer Intern', 871270, 'Netflix', 100000, 'Internship', 'Full-stack
development using Python and C++', 'Mountain View, CA, USA', 'Bachelor''s in
Computer Science', '20221105', '20231105');
INSERT INTO JobPosting VALUES (479134, '20220930', '20221007', 'Software
Engineer', 280953, 'Meta', 100001, 'Internship', 'Capable of developing both
SQL and NoSQL databases', 'Seattle, WA, USA', 'Master''s in Computer Science',
'20221015', '20231105');
```

```sql
INSERT INTO JobPosting VALUES (390839, '20221007', '20221107', 'Warehouse
Assistant', 423880, 'Amazon', 100002, 'FullTime', 'Can carry heavy boxes up to
50 lbs', 'Menlo Park, CA, USA', 'No requirement', '20201130', NULL);
INSERT INTO JobPosting VALUES (666666, '20221007', '20221107', 'Warehouse
Assistant', 423880, 'Amazon', 100002, 'FullTime', 'Can carry heavy boxes up to
50 lbs', 'Menlo Park, CA, USA', 'No requirement', '20201130', NULL);
INSERT INTO JobPosting VALUES (583093, '20221020', '20221101', 'Machine
Learning Researcher', 325431, 'Google', 100004, 'Internship', 'Strong
experience in machine learning', 'Calgary, AB, Canada', 'PhD in Computer
Science', '20221114', '20231105');
INSERT INTO JobPosting VALUES (129683, '20221020', '20221101', 'Supply Chain
Program Manager', 325431, 'Google', 100004, 'FullTime', 'Experience with
Supply/Demand Planning and Accounting/Finance', 'Calgary, AB, Canada', 'Any
Bachelor''s', '20221114', NULL);
INSERT INTO JobPosting VALUES (478762, '20221020', '20221101', 'Account
Executive', 325431, 'Google', 100004, 'FullTime', 'Experience in media,
marketing or advertising, with a focus on programmatic media sales', 'Calgary,
AB, Canada', 'Any Bachelor''s', '20221114', NULL);
INSERT INTO JobPosting VALUES (888643, '20221020', '20221101', 'AI Engineer
Intern', 325431, 'Google', 100004, 'Internship', 'Experience in coding
languages, data structures, algorithms, and software design', 'Calgary, AB,
Canada', 'Bachelor''s in Computer Science', '20221114', '20231105');
INSERT INTO JobPosting VALUES (111998, '20221020', '20221101', 'Partner
Support Specialist', 325431, 'Google', 100004, 'FullTime', 'Experience with
the Darwin benefits system', 'Calgary, AB, Canada', 'No requirement',
'20221114', NULL);

--insert jobLocation
INSERT INTO JobLocation VALUES ('Mountain View, CA, USA', 1);
INSERT INTO JobLocation VALUES ('Calgary, AB, Canada', 0);
INSERT INTO JobLocation VALUES ('Menlo Park, CA, USA', 1);
INSERT INTO JobLocation VALUES ('Seattle, WA, USA', 1);
INSERT INTO JobLocation VALUES ('Vancouver, BC, Canada', 0);

--insert company
INSERT INTO Company VALUES (325431, 'Google', '1600 Amphitheatre Parkway,
Mountain View, CA 94043, USA', 'password123');
INSERT INTO Company VALUES (423880, 'Amazon', '410 Terry Ave. N, Seattle, WA
98109, USA', 'password123');
INSERT INTO Company VALUES (280953, 'Meta', '1 Hacker Way, Menlo Park, CA
94025, USA', 'sdjkfhsjf8jnfd');
INSERT INTO Company VALUES (871270, 'Netflix', '100 Winchester Circle, Los
Gatos, CA 95032, USA', 'f2j59gdj3i9');
INSERT INTO Company VALUES (016498, 'Apple', 'One Apple Park Way, Cupertino,
CA 95014, USA', '9kmjdikc8982j');

--insert referralBonus
INSERT INTO ReferralBonus VALUES (325431, 1000);
INSERT INTO ReferralBonus VALUES (423880, 5000);
```

```sql
INSERT INTO ReferralBonus VALUES (280953, 2000);
INSERT INTO ReferralBonus VALUES (871270, 4000);
INSERT INTO ReferralBonus VALUES (016498, 500);

--insert jobInfo
INSERT INTO JobInfo VALUES ('Software Engineer Intern', 871270, 50000);
INSERT INTO JobInfo VALUES ('Software Engineer', 280953, 170000);
INSERT INTO JobInfo VALUES ('Warehouse Assistant', 423880, 140000);
INSERT INTO JobInfo VALUES ('Machine Learning Researcher', 325431, 60000);
INSERT INTO JobInfo VALUES ('Supply Chain Program Manager', 325431, 80000);
INSERT INTO JobInfo VALUES ('Account Executive', 325431, 100000);
INSERT INTO JobInfo VALUES ('AI Engineer Intern', 325431, 60000);
INSERT INTO JobInfo VALUES ('Partner Support Specialist', 325431, 110000);

--insert coverLetter
INSERT INTO CoverLetter VALUES (382720, 'coverletter for SDE intern', 'Dear
Hiring Manager… <omitted>', 2201);
INSERT INTO CoverLetter VALUES (592781, 'coverletter for QA intern', 'I
believe I have accumulated… <omitted>', 2202);
INSERT INTO CoverLetter VALUES (672091, 'coverletter for my dream job', 'I''m
confident that I''m a great fit… <omitted>', 2203);
INSERT INTO CoverLetter VALUES (187930, 'coverletter for job I like', 'Please
consider me as the candidate… <omitted>', 2204);
INSERT INTO CoverLetter VALUES (593819, 'coverletter general', 'I assert that
I am the best applicant… <omitted>', 2205);

--insert recruiter
INSERT INTO Recruiter VALUES (100000, 'John Smith', 'johnsmith123', 871270);
INSERT INTO Recruiter VALUES (100001, 'Alice Lee', 'topsecret', 280953);
INSERT INTO Recruiter VALUES (100002, 'Hannah Jackson', 'hannahjackson2345',
423880);
INSERT INTO Recruiter VALUES (100003, 'Jay Hua', '9939494ffadfs', 016498);
INSERT INTO Recruiter VALUES (100004, 'Bob Wilkinson', 'password', 325431);

--insert jobRecruiter
INSERT INTO JobRecruiter VALUES (100000, 'Mountain View, CA, USA');
INSERT INTO JobRecruiter VALUES (100001, 'Seattle, WA, USA');
INSERT INTO JobRecruiter VALUES (100002, 'Menlo Park, CA, USA');
INSERT INTO JobRecruiter VALUES (100003, 'Los Gatos, CA, USA');
INSERT INTO JobRecruiter VALUES (100004, 'Calgary, AB, Canada');

--insert referral
INSERT INTO Referral VALUES (200001, 'Mike Ross', 012201, 871270);
INSERT INTO Referral VALUES (200002, 'Josh Armstrong', 012202, 280953);
INSERT INTO Referral VALUES (200003, 'Jeff Bezos', 012203, 423880);
INSERT INTO Referral VALUES (200004, 'Dan Green', 012204, 325431);
INSERT INTO Referral VALUES (200005, 'Chi Apachi', 012205, 325431);

--insert application
```

```sql
INSERT INTO Application VALUES (012201, 'submitted', '20221001', 2201, 200001,
487382, 382720);
INSERT INTO Application VALUES (012202, 'rejected', '20221101', 2202, 200002,
479134, 592781);
INSERT INTO Application VALUES (012206, 'rejected', '20221101', 2201, NULL,
479134, 592781);
INSERT INTO Application VALUES (012203, 'in progress', '20220901', 2203,
200003, 390839, 672091);
INSERT INTO Application VALUES (012207, 'in progress', '20220901', 2201, NULL,
390839, 672091);
INSERT INTO Application VALUES (012204, 'hired', '20220824', 2204, 200004,
478762, 187930);
INSERT INTO Application VALUES (012205, 'withdrawn', '20220916', 2205, 200005,
583093, 593819);
INSERT INTO Application VALUES (555555, 'submitted', '20220916', 2201, 200005,
583093, 593819);
INSERT INTO Application VALUES (111111, 'submitted', '20220916', 2205, NULL,
129683, 593819);
INSERT INTO Application VALUES (222222, 'submitted', '20220916', 2205, NULL,
478762, 593819);
INSERT INTO Application VALUES (333333, 'submitted', '20220916', 2205, NULL,
888643, 593819);
INSERT INTO Application VALUES (444444, 'submitted', '20220916', 2205, NULL,
111998, 593819);


--insert WorkExperience
INSERT INTO WorkExperience VALUES (2201, 'Google', 'Software Engineering
Intern', '20220502', '20220831', 'worked on different google services');
INSERT INTO WorkExperience VALUES (2201, 'Nuro', 'Software Engineering
Intern', '20210502', '20210831', 'worked self driving technologies');
INSERT INTO WorkExperience VALUES (2201, 'RobinHood', 'Site Reliability
Engineering Intern', '20200502', '20200831', 'worked on web services');
INSERT INTO WorkExperience VALUES (2202, 'SAP', 'Software Engineering Intern',
'20220102', '20220831', 'created full stack application');
INSERT INTO WorkExperience VALUES (2202, 'RobinHood', 'Site Reliability
Engineering Intern', '20200502', '20200831', 'worked on web services');
INSERT INTO WorkExperience VALUES (2202, 'Netflix', 'Software Engineering
Intern', '20210502', '20210831', 'worked self driving technologies');
INSERT INTO WorkExperience VALUES (2203, 'Meta', 'QA Intern', '20220502',
'20220821', 'created auto test suits');
INSERT INTO WorkExperience VALUES (2204, 'Amazon', 'Software Engineering
Intern', '20220602', '20220831', 'worked on Alexa services');
INSERT INTO WorkExperience VALUES (2205, 'Netflix', 'Product Management
Intern', '20220502', '20220831', 'worked with PM to carryout daily scrums');

--insert education
INSERT INTO Education VALUES (2201, 'The University of British Columbia',
'Bachelor of Science', 'Computer Science', 80, '20240530', '20170906');
```

```sql
INSERT INTO Education VALUES (2202, 'Simon Fraser University', 'Bachelor of
Science', 'Computer Science', 85, '20230530', '20190906');
INSERT INTO Education VALUES (2203, 'Queen''s University', 'Bachelor of Arts',
'Psychology', 90, '20230531', '20170906');
INSERT INTO Education VALUES (2204, 'The University of Toronto', 'Bachelor of
Applied Science', 'Electrical Engineering', 70, '20230530', '20170906');
INSERT INTO Education VALUES (2205, 'The University of British Columbia',
'Bachelor of Science', 'Biology', 82, '20240530', '20210909');

--insert applicationHasWork
INSERT INTO ApplicationHasWork VALUES (2201, 12201, 'Google', 'Software
Engineering Intern');
INSERT INTO ApplicationHasWork VALUES (2201, 12201, 'Nuro', 'Software
Engineering Intern');
INSERT INTO ApplicationHasWork VALUES (2202, 12202, 'SAP', 'Software
Engineering Intern');
INSERT INTO ApplicationHasWork VALUES (2203, 12203, 'Meta', 'QA Intern');
INSERT INTO ApplicationHasWork VALUES (2204, 12204, 'Amazon', 'Software
Engineering Intern');
INSERT INTO ApplicationHasWork VALUES (2205, 12205, 'Netflix', 'Product
Management Intern');

--insert applicationHasEducation
INSERT INTO ApplicationHasEducation VALUES (2201, 12201, 'The University of
British Columbia', 'Bachelor of Science');
INSERT INTO ApplicationHasEducation VALUES (2202, 12202, 'Simon Fraser
University', 'Bachelor of Science');
INSERT INTO ApplicationHasEducation VALUES (2203, 12203, 'Queen''s
University', 'Bachelor of Arts');
INSERT INTO ApplicationHasEducation VALUES (2204, 12204, 'The University of
Toronto', 'Bachelor of Applied Science');
INSERT INTO ApplicationHasEducation VALUES (2205, 12205, 'The University of
British Columbia', 'Bachelor of Science');
```

Query used in DatabseConnectionHandler

```sql
-- DELETE JobPosting
DELETE
FROM JobPosting posting
WHERE posting.jobID = 20221001;

-- check login credentials SELECT
SELECT COUNT(*) AS count
FROM APPLICANT
WHERE userID = 2201
 AND password = 'Ca123456';

-- checkRecruiterLogin SELECT
SELECT COUNT(*) AS count
```

```sql
from Recruiter
WHERE recruiterID = ?
 AND password = ?

-- checkCompanyLogin SELECT
SELECT COUNT(*) AS count
from Company
WHERE companyID = ?
 AND password = ?

-- selectAllJobPosting using JOIN
select posting.*, info.salary, jl.visaRequirement
from JobPosting posting
        JOIN JobInfo info on info.companyID = posting.companyID
   AND info.positionName = posting.positionName
        JOIN JobLocation jl on posting.location = jl.location;

-- selectJobPostingsByCompanyID using JOIN
select posting.*, info.salary, jl.visaRequirement
from JobPosting posting
        JOIN JobInfo info on info.companyID = posting.companyID
   AND info.positionName = posting.positionName
        JOIN JobLocation jl on posting.location = jl.location
WHERE posting.companyID = 325431;

-- selectJobPostingsByType using JOIN
SELECT posting.*, info.salary, jl.visaRequirement
from JobPosting posting
        JOIN JobInfo info on info.companyID = posting.companyID
   AND info.positionName = posting.positionName
        JOIN JobLocation jl on posting.location = jl.location
WHERE posting.jobType = 'Internship';

-- selectJobPostingByJobID using JOIN
select posting.*, info.salary, jl.visaRequirement
from JobPosting posting
        JOIN JobInfo info on info.companyID = posting.companyID
   AND info.positionName = posting.positionName
        JOIN JobLocation jl on posting.location = jl.location
WHERE posting.jobID = 487382;

-- selectApplicationsByApplicantID using PROJECTION
SELECT application.applicationID as applicationID,
       application.applicantID   as applicantID,
       application.jobID,
       posting.positionName       as positionName,
       c.name                     as companyName,
       application.status         AS status,
       application.dateSubmitted as dateSubmitted,
```

```sql
       application.referralID,
       application.coverLetterID
FROM Application application,
     JobPosting posting,
     Company c
WHERE applicantID = 2201
 AND application.jobID = posting.jobID
 AND posting.companyID = c.companyID;

-- selectApplicationsByCompanyID using PROJECTION
SELECT application.applicationID as applicationID,
       application.applicantID   as applicantID,
       application.jobID,
       posting.positionName      as positionName,
       posting.companyName,
       application.status        AS status,
       application.dateSubmitted as dateSubmitted,
       application.referralID,
       application.coverLetterID
FROM Application application,
     JobPosting posting
WHERE application.jobID = posting.jobID
 AND posting.companyID = 325431;

-- UPDATE applicant query
UPDATE Applicant
SET name               = 'Danny Wu',
    address            = '101 Bay Street Toronto Ontario Canada',
    phoneNumber        = '7789525626',
    email              = 'danny22321@gmail.com',
    requireVisaSponsor = 1
WHERE userId = 2201;

-- UPDATE work experience
SELECT *
FROM WORKEXPERIENCE;
UPDATE WorkExperience
SET startDate   = '20220101',
    endDate     = '20220530',
    description = 'worked on squid game launch'
WHERE applicantID = 2205
 AND companyName = 'Netflix'
 AND jobTitle = 'Product Management Intern';

-- UPDATE job posting
UPDATE JobPosting
SET datePosted   = ?,
    deadline     = ?,
    positionName = ?,
```

```sql
    companyID   = ?,
    companyName = ?,
    jobType     = ?,
    recruiterID = ?,
    skills      = ?,
    location    = ?,
    education   = ?,
    startDate   = ?,
    endDate     = ?
WHERE jobID = ?;

-- AGGREGATION WITH GROUP BY: find the average pay in each jobType
SELECT ROUND(AVG(info.salary), 0) AS average, posting.jobType
FROM JobInfo info,
    JobPosting posting
WHERE posting.positionName = info.positionName
 AND posting.companyID = info.companyID
GROUP BY posting.jobType;

-- AGGREGATION WITH HAVING: find applicant with more than 2 previous
internships
SELECT DISTINCT applicant.name
FROM Applicant applicant,
    Application application,
    JobPosting posting
WHERE posting.companyID = 280953
 AND application.APPLICANTID = applicant.USERID
 AND application.JOBID = posting.JOBID
 AND applicant.userID IN (SELECT exp.applicantID
                          FROM WorkExperience exp
                          GROUP BY exp.applicantID
                          HAVING COUNT(*) > 2);


-- NESTED AGGREGATION WITH GROUP BY: find the count of job postings by each
company with a salary higher than the average of all postings
SELECT companyName, COUNT(*)
FROM JobPosting p
        NATURAL JOIN JobInfo info
WHERE info.salary > (SELECT AVG(salary)
                     FROM JobPosting
                            NATURAL JOIN JobInfo)
GROUP BY companyName;

-- DIVISION: find applicants who have applied to all of a company's job
postings
SELECT company.companyID, applicant.userID, applicant.NAME
FROM Applicant applicant,
    Company company
```

```
WHERE company.COMPANYID = 325431
 AND NOT EXISTS((SELECT *
                FROM JobPosting posting
                WHERE posting.companyID = company.companyID
                  AND NOT EXISTS(SELECT *
                                 FROM Application application
                                 WHERE posting.jobID = application.jobID
                                   AND applicant.userID =
application.applicantID)));
```

Screenshots of the sample output of the queries using the GUI

- (for example, you can show what data is in your table before you run the query, and then show another screenshot after running the query, from some kind of GUI input like a button).
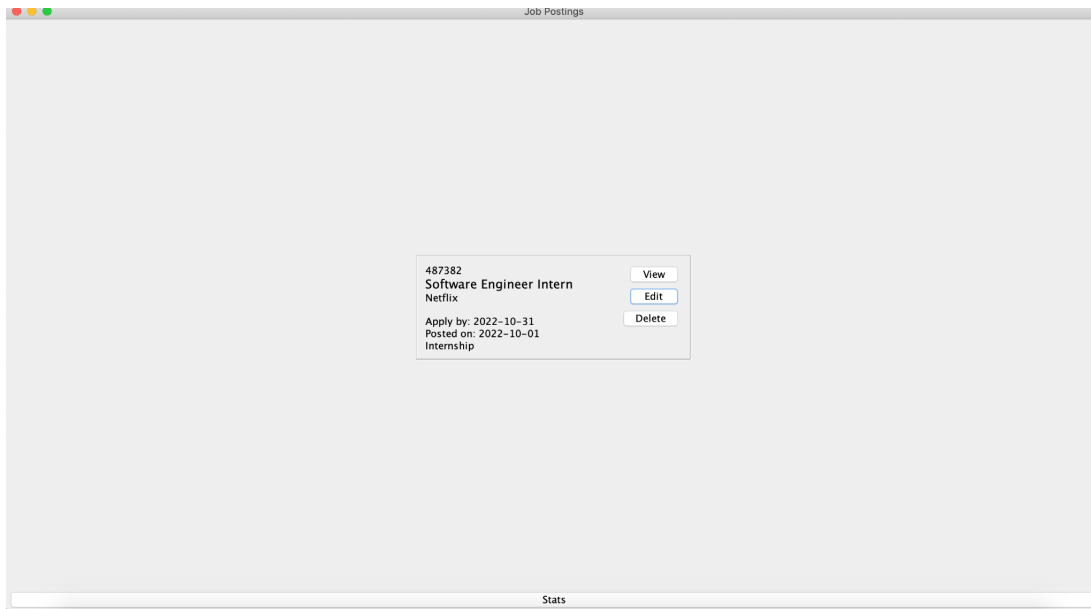
INSERT QUERY
Where to find in repository code:
https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java
On Line 94

Before inserting Job Posting/running the query:
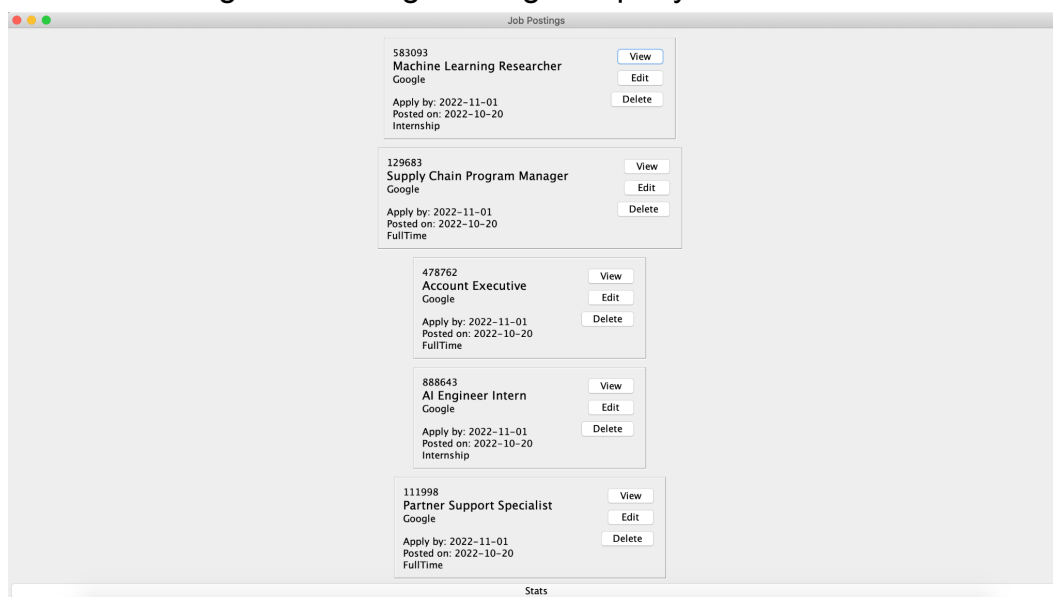
After inserting Job Posting /running the query;

- **Demo Job** was inserted
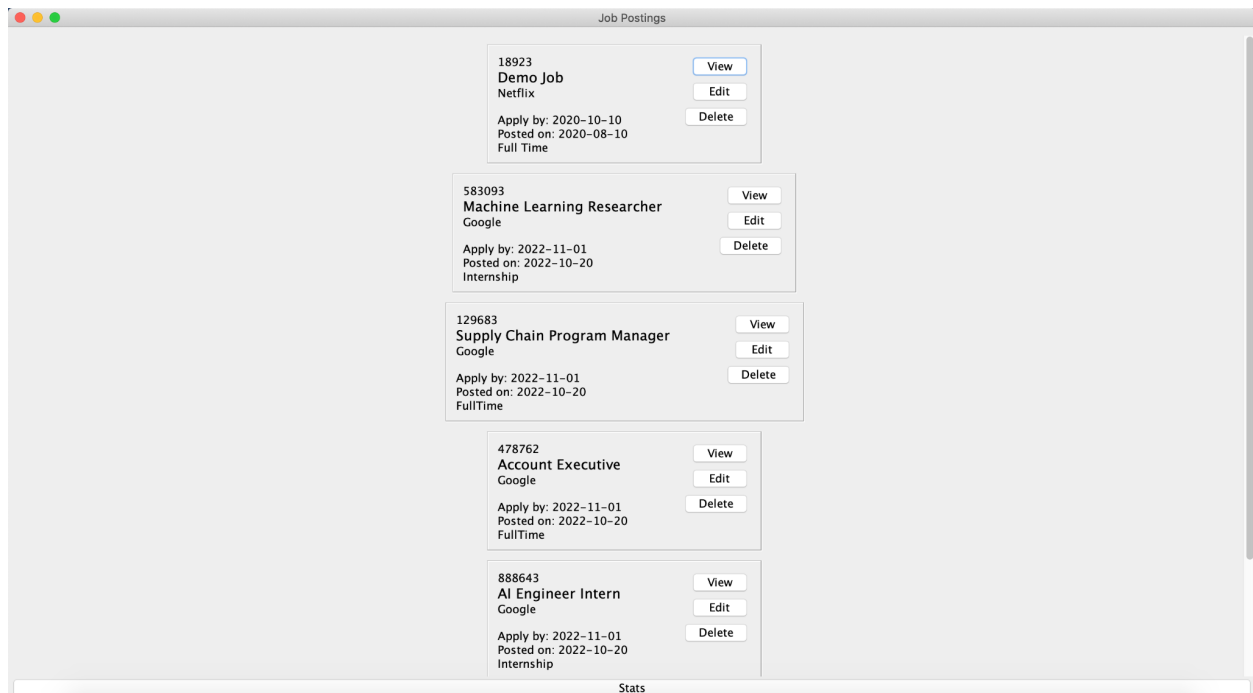
DELETE QUERY
Where to find in repository code:
https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java
On line 184

Before running delete query/deleting job posting:
Applicant view to see the submitted application for Machine Learning Researcher

Filter...

583093
Machine Learning Researcher
Google

View

Withdraw

submitted

390839
Warehouse Assistant
Amazon

View

Withdraw

in progress

479134
Software Engineer
Meta

View

Withdraw

rejected

487382
Software Engineer Intern
Netflix

View

Withdraw

submitted
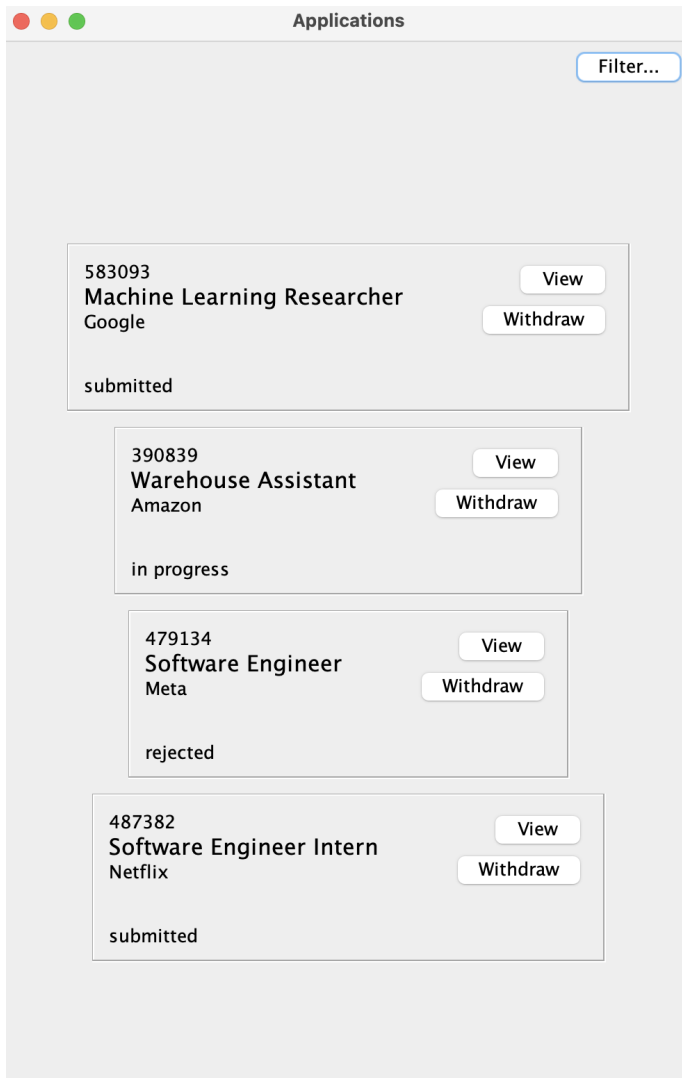
Company log in and see its job postings which also has Machine Learning
Researcher
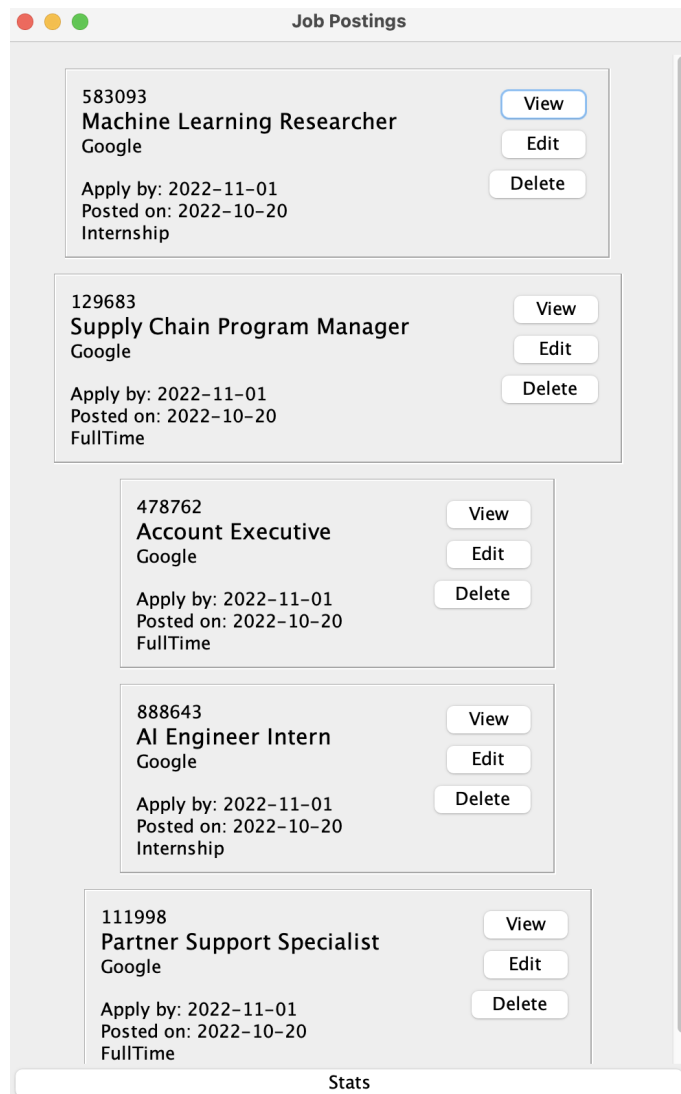
After running delete query/deleting job posting:
- Machine Learning Researcher Job Posting was deleted in Company Job
  Postings view

129683
Supply Chain Program Manager
Google

Apply by: 2022–11–01
Posted on: 2022–10–20
FullTime

View
Edit
Delete

478762
Account Executive
Google

Apply by: 2022–11–01
Posted on: 2022–10–20
FullTime

View
Edit
Delete

888643
AI Engineer Intern
Google

Apply by: 2022–11–01
Posted on: 2022–10–20
Internship

View
Edit
Delete

111998
Partner Support Specialist
Google

Apply by: 2022–11–01
Posted on: 2022–10–20
FullTime

View
Edit
Delete

Stats

- Application to Machine Learning Researcher Job Posting was also deleted in applicant 2201's applications view, since he applied to the job
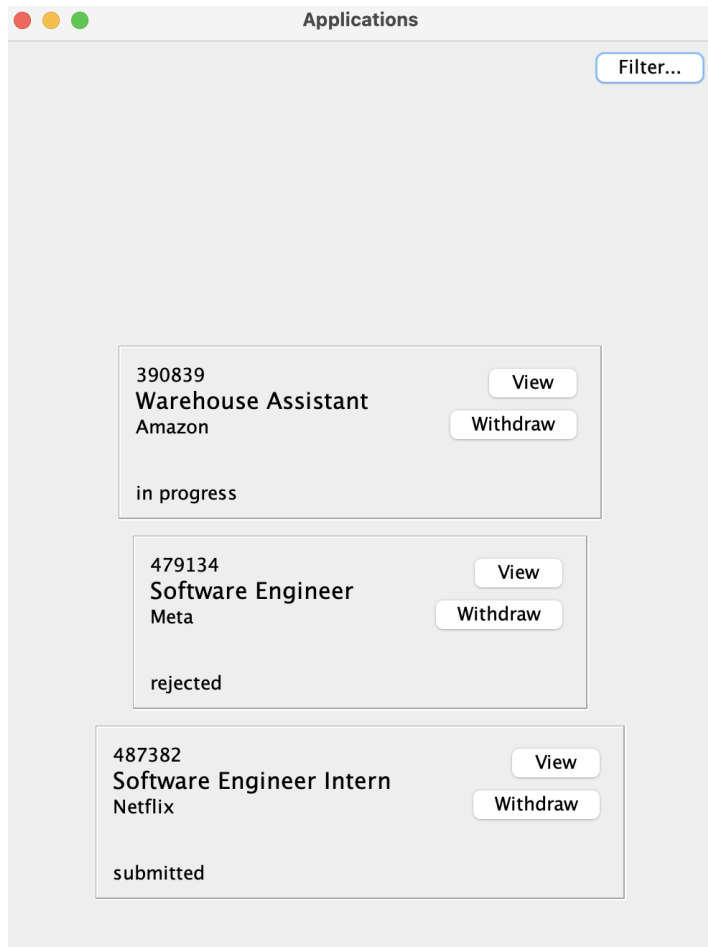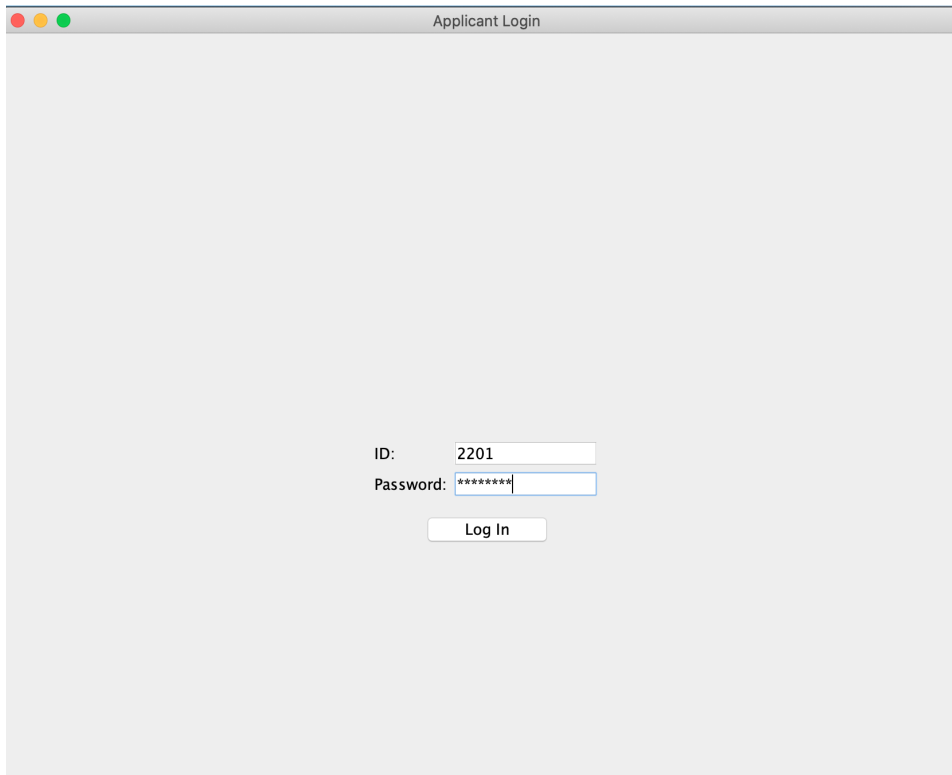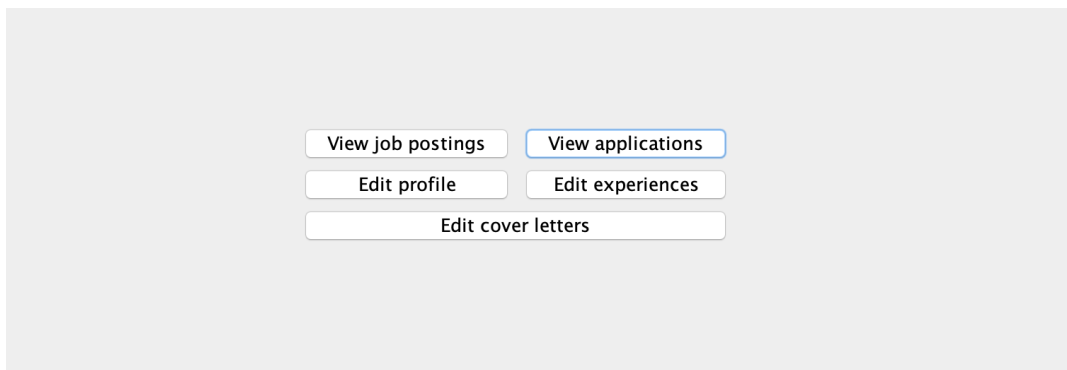

UPDATE QUERY
Where to find in repository code:
https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java
On line 632

Before running update query/updating job posting:

After running update query/updating job posting:

- In this example, name of the job posting was changed from Software Engineer Intern to Product Management intern (same job ID/posting)
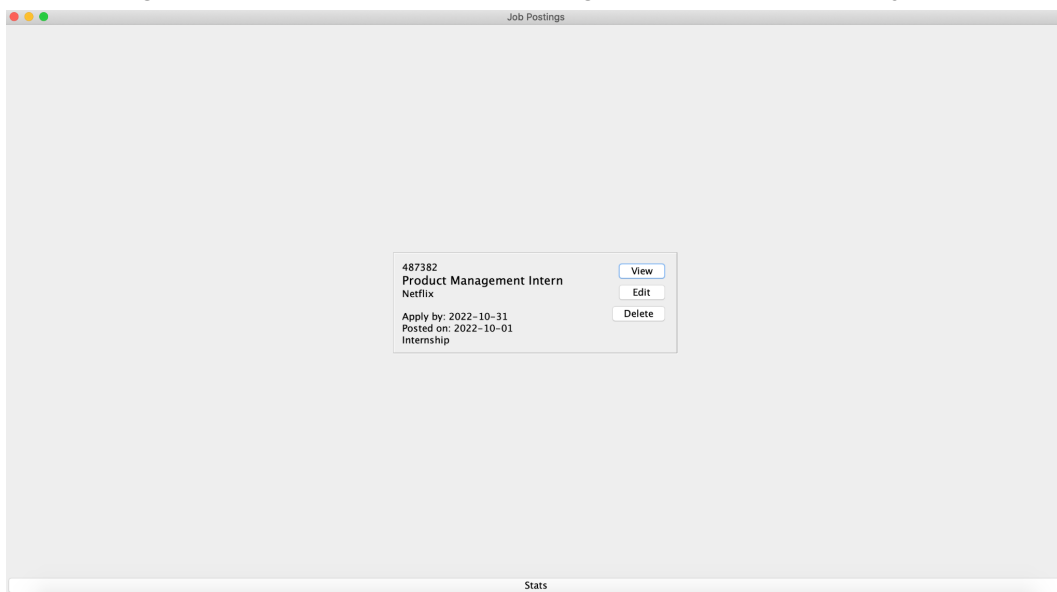
SELECTION QUERY
Where to find in repository code:

https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java
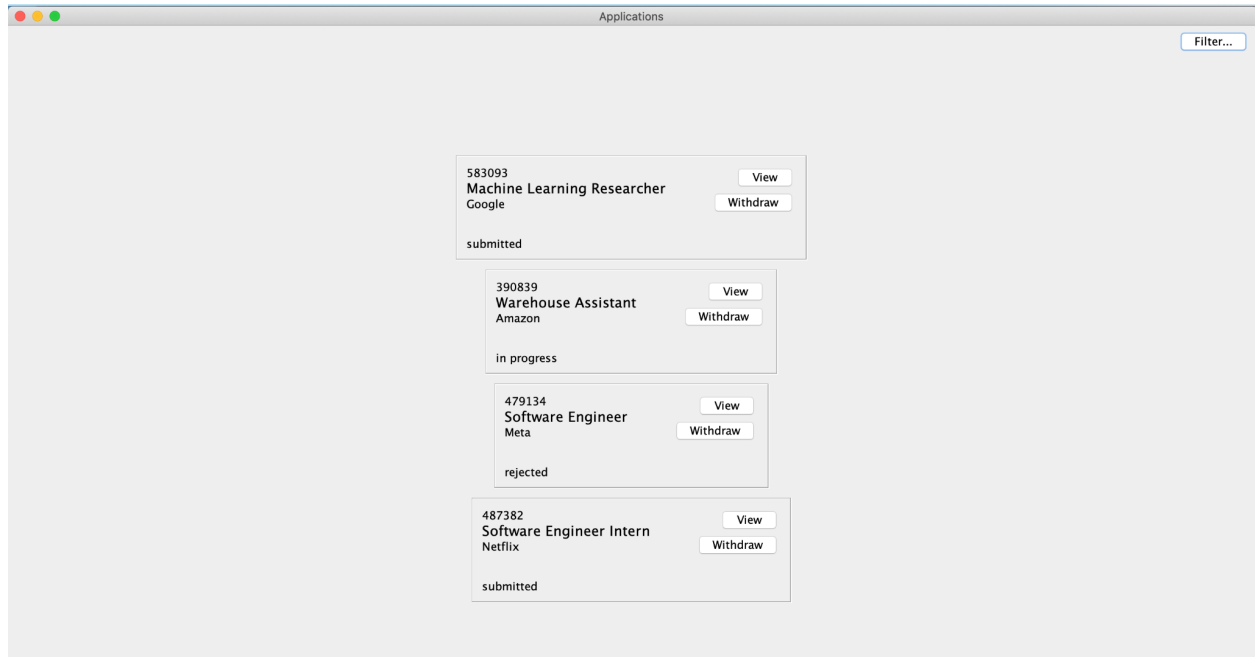
On line 257

Before running selection/select job posting by job type:
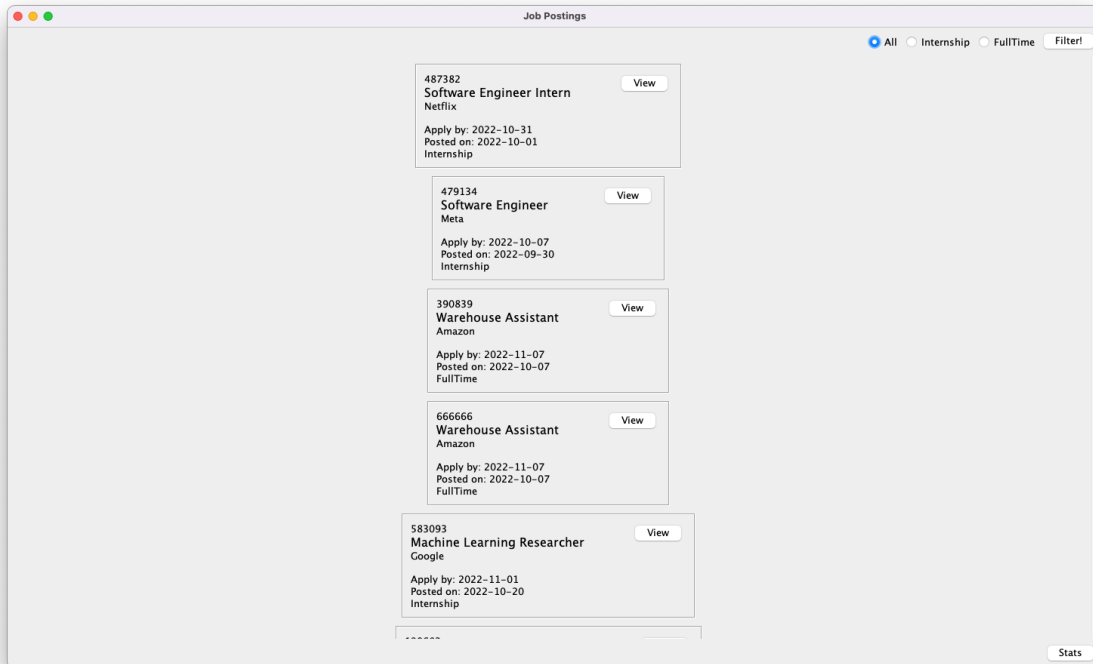
After running selection/select job posting by job type:
- In this example, job postings were filtered by the job type: FullTime and selected
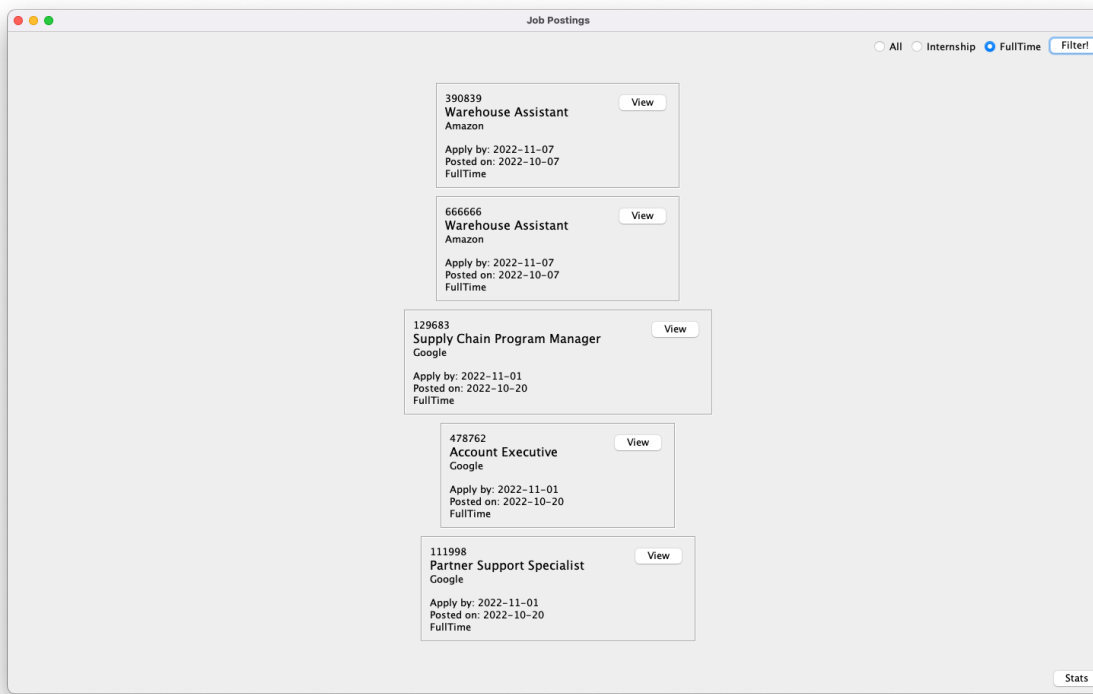
PROJECTION QUERY

Where to find in repository code:

https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java

On line 295

Before running projection:

After running projection:
- Logging into the applicant view login with the applicant ID will show/project all the applications by that specific applicantID used to login
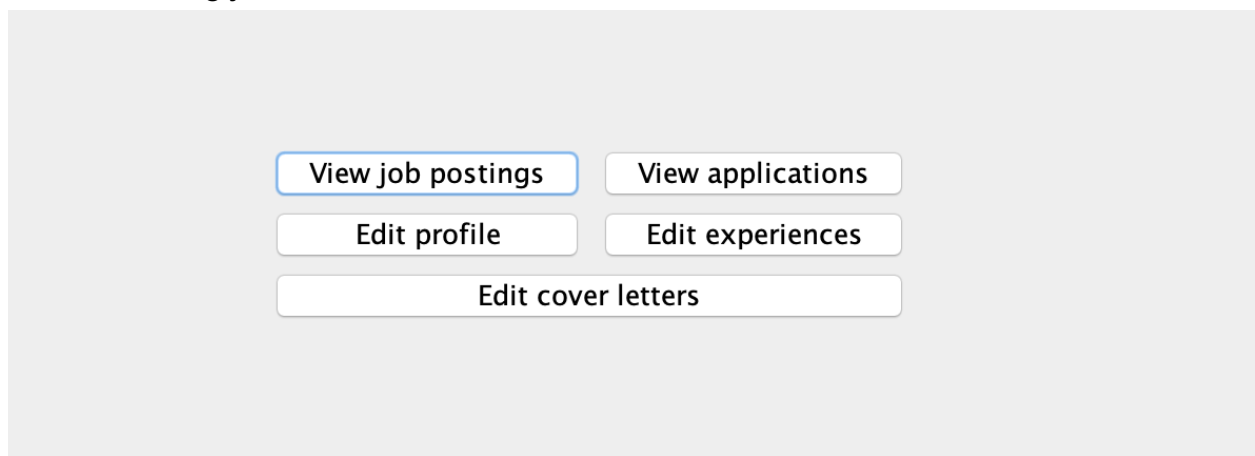
JOIN QUERY
Where to find in repository code:
https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java
On line 207

Before running join:

After running join:
- Clicking on view job postings shows all job postings where the following are joined
  - `JOIN JobInfo info on info.companyID = posting.companyID`

```
-    JOIN JobLocation jl on posting.location = jl.location
```

View Job Posting

Software Engineer   Internship
Meta   479134
Seattle, WA, USA   [Apply]
_____

2022-09-30
Apply by: 2022-10-07

Education requirement:Master's in Computer Science

_____

Skills requirement: Capable of developing both SQL and NoSQL databases

_____

Visa requirement:
Must be a citizen/permanent resident
_____

Start date: 2022-10-15
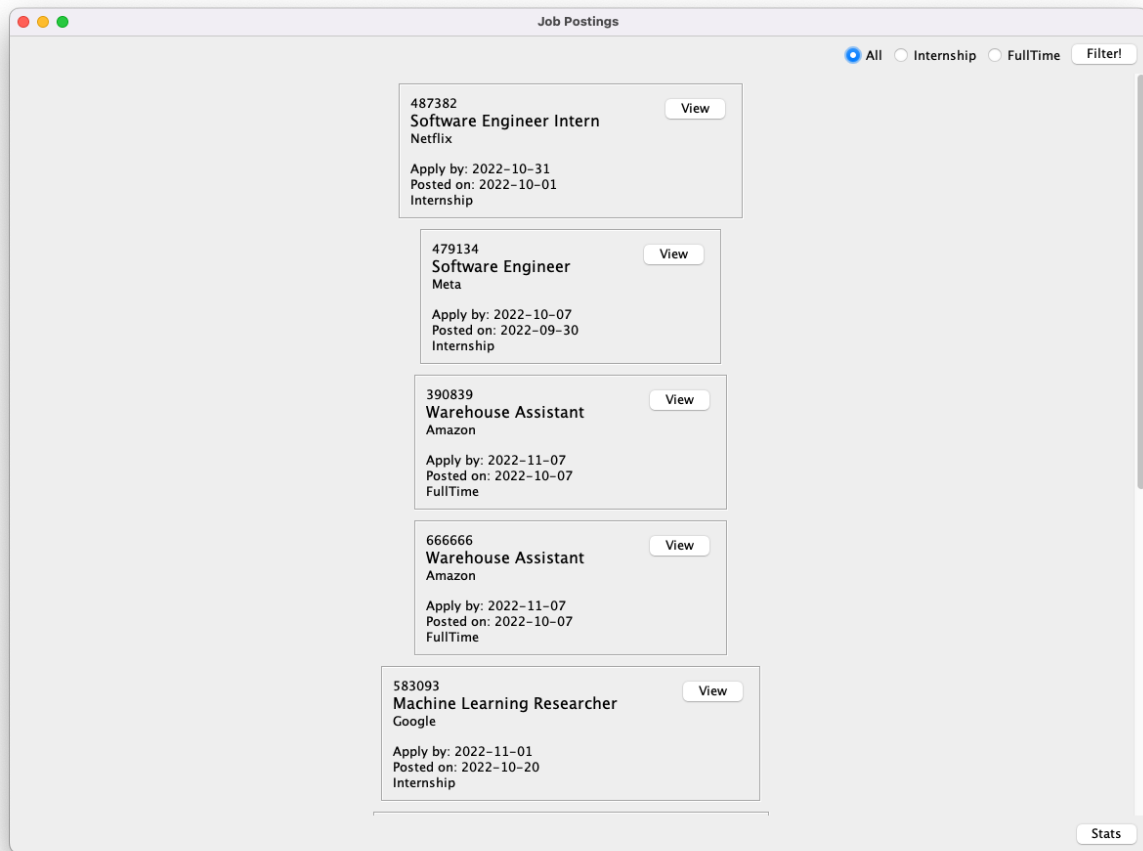End date: 2023-11-05

Salary: $170000
_____

AGGREGATION WITH GROUP BY QUERY
Where to find in repository code:
https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java
Line 495 for Aggregation with group by (average salaries by job type)

Before running:

After running:
- Pressing on the stats button at bottom will give results of aggregation with group by query (average salaries by job type)
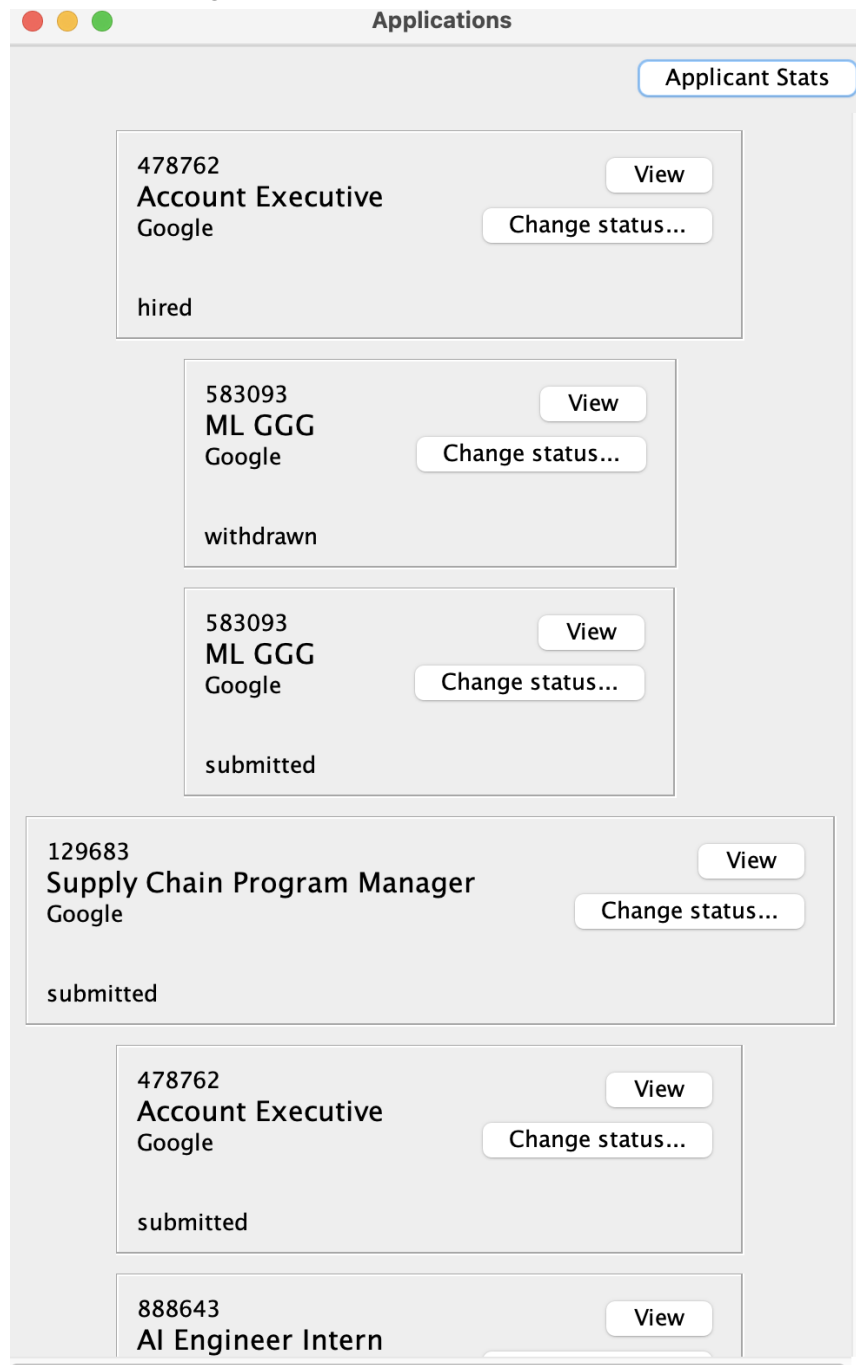

AGGREGATION WITH HAVING QUERY
Where to find in repository code:
https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java

On line 532 for aggregation with having (applicants with >2 previous internships)

Before running:

After running:
- Clicking on applicant stats button in top right of screen will give us results of aggregation with having query (applicants with >2 previous internships)

- A popup will show the stats

Applicant Stats:
List of Names of Applicants with > 2 Previous Internships: [Danny Hu]
List of Names of Applicants who have applied to all of a company's job postings: [David Thompson]
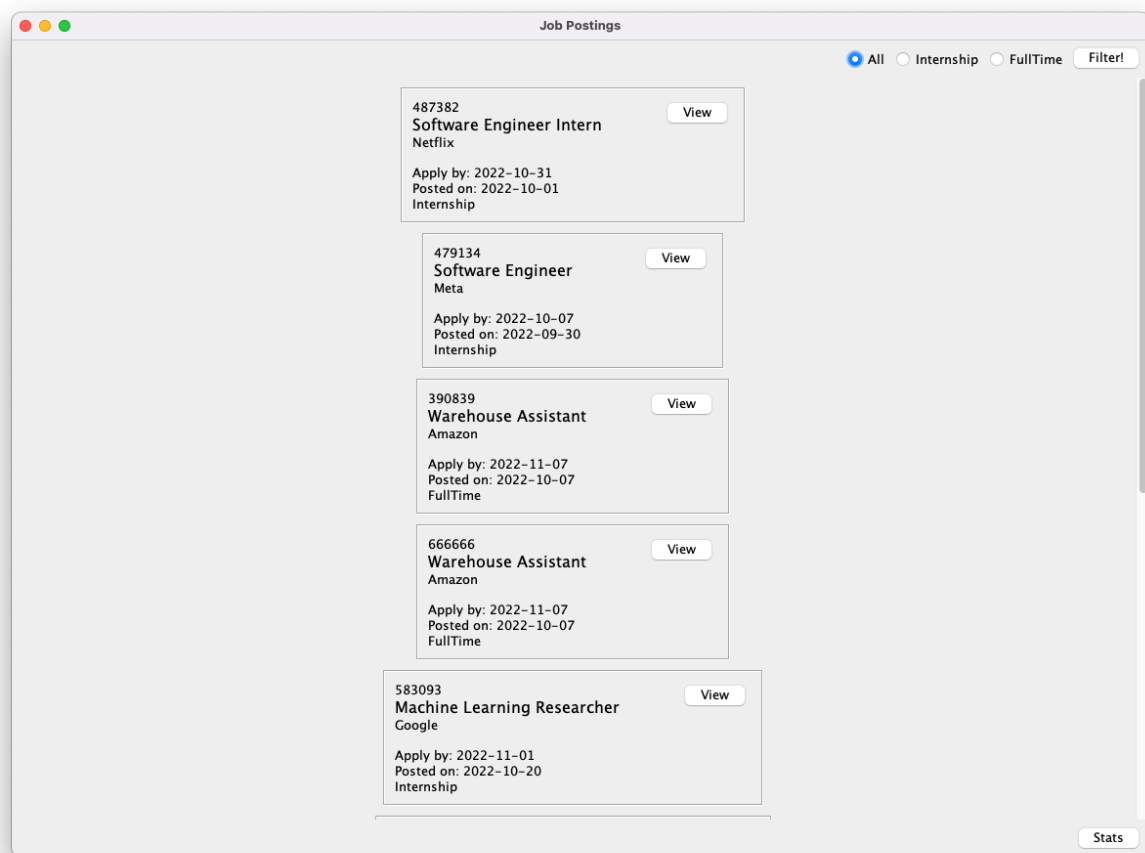
NESTED AGGREGATION WITH GROUP BY QUERY
Where to find in repository code:
https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/bl ob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java
Line 590 for nested aggregation with group by (find count of above average salaries per company)

Before running:

After running:

- Pressing on the stats button at bottom will give results of nested aggregation with group by (find count of above average salaries per company).
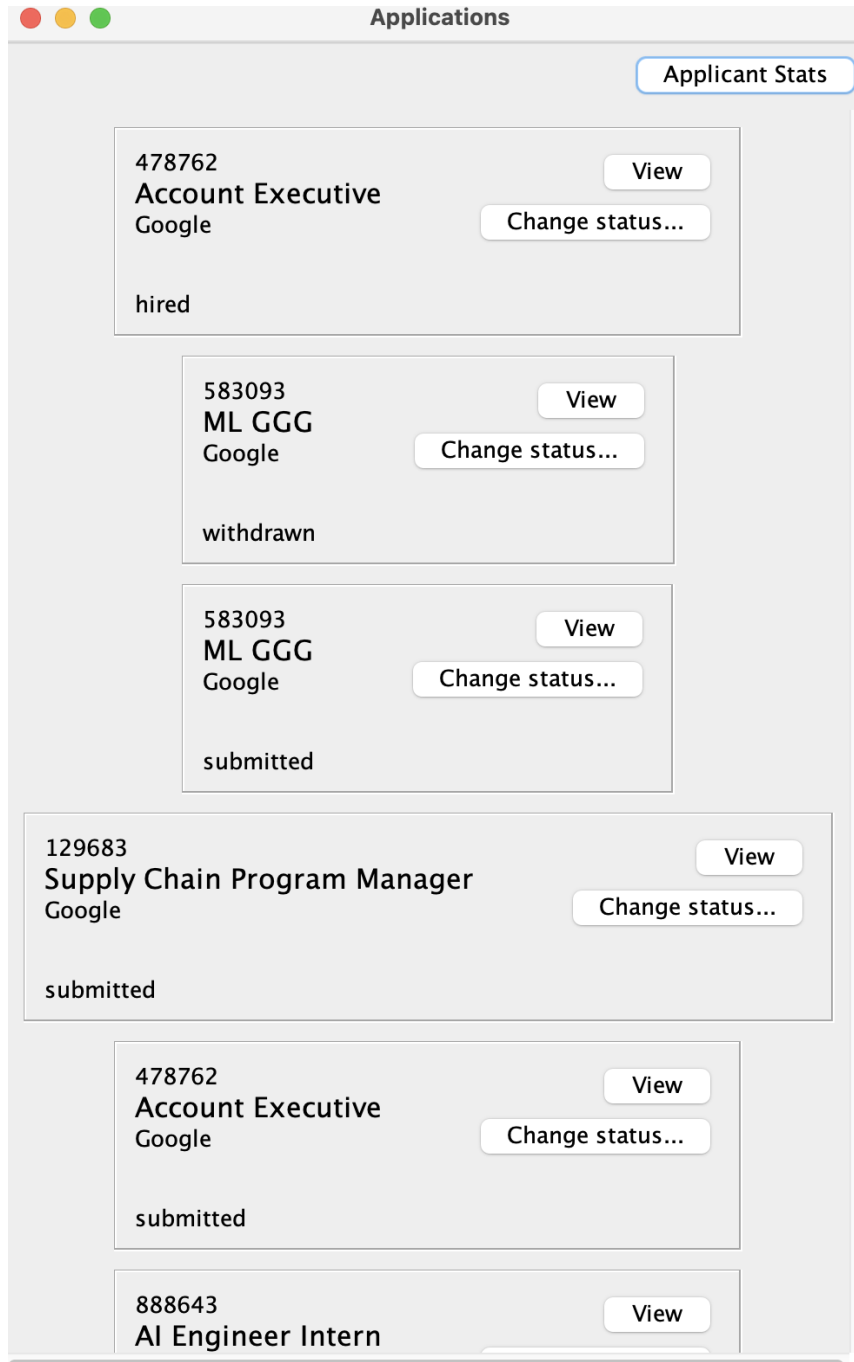

DIVISION QUERY

Where to find in repository code:

https://github.students.cs.ubc.ca/CPSC304-2022W-T1/project_f9v2b_j4f3b_z7f3b/blob/main/src/ca/ubc/cs304/database/DatabaseConnectionHandler.java

On line 563 for Division (applicants who have applied to all of a company's job postings)

Before running:

Applicant Stats

478762
Account Executive
Google

View

Change status...

hired

583093
ML GGG
Google

View

Change status...

withdrawn

583093
ML GGG
Google

View

Change status...

submitted

129683
Supply Chain Program Manager
Google

View

Change status...

submitted

478762
Account Executive
Google

View

Change status...

submitted

888643
AI Engineer Intern

View

After running:
- Clicking on applicant stats button in top right of screen will give us results of division query (applicants who have applied to all of a company's job postings)

Applicant Stats:
List of Names of Applicants with > 2 Previous Internships: [Danny Hu]
List of Names of Applicants who have applied to all of a company's job postings: [David Thompson]