Assignment 4 - Normalisation

Team: Nisarga Venkatesh
NUID: 002783878
Vinutha Prakash
NUID:002789155

Normalization eliminates data redundancy and enhances data integrity in the table. Normalization also helps to organize the data in the database. It is a multi-step process that sets the data into tabular form and removes the duplicated data from the relational tables.

Normalization organizes the columns and tables of a database to ensure that database integrity constraints properly execute their dependencies. It is a systematic technique of decomposing tables to eliminate data redundancy (repetition) and undesirable characteristics like Insertion, Update, and Deletion anomalies.

1st Normal Form (1NF)

- A table is referred to as being in its First Normal Form if the atomicity of the table is 1.
- Here, atomicity states that a single cell cannot hold multiple values. It must hold only a single-valued attribute.
- The First normal form disallows the multi-valued attribute, composite attribute, and their combinations.

Name	University	Course	Year	Undergrad_sc	work_ex	Skills
a1hooman	Northeastern U	Management I	Fall 2022	5.93 CGPA	0	Artificial Intelligence,Data Anay
Aakash6993	Northeastern U	Management I	Fall 2022	67%	32	Python,SQL,C++
Aarushi7	Northeastern U	Management I	Fall 2022	71.40%	36	Python,SQL,C++
Aashay Kedar	Northeastern U	Management I	Fall 2022	7.2 CGPA	19	Python,SQL,C++
AbhaAshapure	Northeastern U	Management I	Fall 2022	68.19%	12	Python,SQL,C++
Abhi2612	Northeastern U	Information Ma	Fall 2022	73%	0	C,Java,Javascript,HTML
abhijay22	Northeastern U	Management I	Fall 2022	6.57 CGPA	15	Python,SQL,C++
abhimalik96	Northeastern U	Information Sy	Fall 2022	8.19 CGPA	3	Javascript,Python
Abhinavsharm	Northeastern U	Management I	Fall 2022	6.71 CGPA	14	Python,SQL,C++
AbhinavSharm	Northeastern U	Management I	Fall 2022	6.71 CGPA	14	Python,SQL,C++
abhipato	Northeastern U	Information Sy	Fall 2022	67%	30	Python,SQL,C++
Abhiraj29	Northeastern U	Management I	Fall 2022	7 CGPA	48	Artificial Intelligence,Data Anay
Abhiraj29	Northeastern U	Management I	Fall 2022	7 CGPA	48	SQL,Cloud computing
abhishek-karu	Northeastern U	Management I	Fall 2022	7 CGPA	23	SQL,Cloud computing
abhishek1403	Northeastern U	Information Sy	Fall 2022	7.62 CGPA	36	Python,SQL,C++
Abirami	Northeastern U	Management I	Fall 2022	8.2 CGPA	31	Artificial Intelligence,Data Anay
acegohan	Northeastern U	Management I	Fall 2022	65%	15	Artificial Intelligence,Data Anay
Achiever1989	Northeastern U	Information Sy	Fall 2022	72%	60	Javascript,Python
Achus	Northeastern U	Information Sy	Fall 2022	7.2 CGPA	36	Javascript,Python
addy14	Northeastern U	Management I	Fall 2022	7.15 CGPA	3	Python,SQL,C++
adi666452	Northeastern U	Information Sy	Fall 2022	9.45 CGPA	4	Javascript,Python
Adi8081234	Northeastern U	Management I	Fall 2022	6.75 CGPA	1	Javascript,Python
Aditi00004	Northeastern U	Information Ma	Fall 2022	7.8 CGPA	33	C,Java,Javascript,HTML
Aditikwl	Northeastern U	Information Sy	Fall 2022	79%	6	Javascript,Python
Adityakh5	Northeastern U	Information Ma	Fall 2022	72%	60	C,Java,Javascript,HTML
AdityaSathe	Northeastern U	Information Sy	Fall 2022	9.45 CGPA	11	Javascript,Python
AdityaShri199	Northeastern U	Management I	Fall 2022	5.67 CGPA	8	C,Java,Javascript,HTML
AdityaShri199	Northeastern U	Management I	Fall 2022	5.67 CGPA	8	SQL,Cloud computing

In our table we had multiple values in the column Skills,we modified according to the 1NF form

Name	University	Course	Year	Undergrad_sc	work_ex	Skills
a1hooman	Northeastern U	Management I	Fall 2022	5.93 CGPA	0	Artificial Intelligence
a1hooman	Northeastern U	Management I	Fall 2022	5.93 CGPA	0	Data Anaytics
Aakash6993	Northeastern U	Management I	Fall 2022	67%	32	Python
Aakash6993	Northeastern U	Management I	Fall 2022	67%	32	SQL
Aakash6993	Northeastern U	Management I	Fall 2022	67%	32	C++
Abhi2612	Northeastern U	Information Ma	Fall 2022	73%	0	C
Abhi2612	Northeastern U	Information Ma	Fall 2022	73%	0	Java
Abhi2612	Northeastern U	Information Ma	Fall 2022	73%	0	Javascript
Abhi2612	Northeastern U	Information Ma	Fall 2022	73%	0	HTML
abhimalik96	Northeastern U	Information Sy	Fall 2022	8.19 CGPA	3	Javascript
abhimalik96	Northeastern U	Information Sy	Fall 2022	8.19 CGPA	3	Python
Abhiraj29	Northeastern U	Management I	Fall 2022	7 CGPA	48	Artificial Intelligence
Abhiraj29	Northeastern U	Management I	Fall 2022	7 CGPA	48	Data Anaytics
addy14	Northeastern U	Management I	Fall 2022	7.15 CGPA	3	Python
addy14	Northeastern U	Management I	Fall 2022	7.15 CGPA	3	SQL
addy14	Northeastern U	Management I	Fall 2022	7.15 CGPA	3	C++
Aditikwl	Northeastern U	Information Sy	Fall 2022	79%	6	Javascript
Aditikwl	Northeastern U	Information Sy	Fall 2022	79%	6	Python
AdityaShri1995	Northeastern U	Management I	Fall 2022	5.67 CGPA	8	SQL
AdityaShri1995	Northeastern U	Management I	Fall 2022	5.67 CGPA	8	cloud
Adityakh5	Northeastern U	Information Ma	Fall 2022	72%	60	C
Adityakh5	Northeastern U	Information Ma	Fall 2022	72%	60	Java
Adityakh5	Northeastern U	Information Ma	Fall 2022	72%	60	Javascript
Adityakh5	Northeastern U	Information Ma	Fall 2022	72%	60	HTML

Second Normal Form (2NF)

- The first condition for the table to be in Second Normal Form is that the table has to be in First Normal Form.
- The table should not possess partial dependency. The partial dependency here means the proper subset of the candidate key should give a non-prime attribute.

Before 2NF

Company ID	Company	Skills	Job_role	Location	Salary	Employment	Days Posted
1	Enhance IT	Artificial Inte	Junior Data S	San Francisc	$90000-$110	Full-time	28
2	Spectrum Lal	Artificial Inte	Part-time Re	Remote in W	$30-$50000	Part-time	30
3	Adobe	Artificial Inte	2023 Univers	San Francisc	$90000-$500	Full-time	25
4	Twitch Intera	Artificial Inte	Data Scientis	Remote in Sa	$90000-$500	Full-time	30
5	Accenture	Artificial Inte	Helpdesk Spe	Remote in Sa	$81500-$110	Full-time	24
6	Kinship	Artificial Inte	Customer Su	Hybrid remot	$90000-$110	Full-time	29
7	Robert Half	Artificial Inte	Assistant Cor	Oakland, CA	$80-$90	Contract+1	3
5	Accenture	Artificial Inte	Staff SWE, F	San Francisc	$90000-$110	Full-time	11
5	Accenture	Artificial Inte	Recruiting Co	Remote in Sa	$48000-$110	Contract	16
8	Genentech	Artificial Inte	Postdoctoral	San Francisc	$90000-$110	Full-time	18
7	Robert Half	Artificial Inte	FP&A Analys	San Francisc	$90000-$110	Internship	30
9	Cruise	Artificial Inte	Senior Execu	San Francisc	$90000-$110	Internship	4
5	Accenture	Artificial Inte	Research Eng	San Francisc	$90000-$110	Full-time	2
7	Robert Half	Artificial Inte	Senior Sourci	San Francisc	$71.45-$76.4	Contract+1	25
7	Robert Half	Artificial Inte	Paralegal	Remote in Sa	$35-$40	Contract+1	3
7	Robert Half	Artificial Inte	Senior Accou	Remote in O	$100000-$11	Internship	30
7	Robert Half	Artificial Inte	Substance Us	Oakland, CA	$25.65-$29.7	Contract+1	2
7	Robert Half	Artificial Inte	In House Cou	Remote in Sa	$90000-$110	Contract+1	4
7	Robert Half	Artificial Inte	VP/Director c	Hybrid remot	$60-$80	Full-time+2	30
7	Robert Half	Artificial Inte	Compliance A	Remote in Sa	$47.5-$55	Contract+1	14
10	Michael Page	Artificial Inte	Enterprise Ac	Remote in Sa	$150000-$16	Internship	23
7	Robert Half	Artificial Inte	Remote Exec	Remote in O	$30-$33	Contract+1	1
5	Accenture	Artificial Inte	People Opera	San Francisc	$90000-$110	Full-time	1
11	Wells Fargo	Artificial Inte	Business Ana	Hybrid remot	$90000-$110	Contract	30
12	data.ai	Artificial Inte	Customer Su	Remote in Sa	$90000-$110	Internship	17
5	Accenture	Artificial Inte	Trainee - Sof	San Francisc	$90000-$110	Full-time	30
5	Accenture	Artificial Inte	Research Sci	San Francisc	$196000-$30	Full-time	21
5	Accenture	Artificial Inte	Product Anal	San Francisc	$90000-$110	Full-time	1
5	Accenture	Artificial Inte	Policy Enforc	San Francisc	$90000-$110	Full-time	30
13	Windfall	Artificial Inte	Data Scientis	San Francisc	$90000-$110	Full-time	30
1	Enhance IT	Artificial Inte	Junior Data S	San Francisc	$35000-$110	Full-time	28
7	Robert Half	Artificial Inte	Assistant Cor	Oakland, CA	$80-$90	Contract+1	3
5	Accenture	Artificial Inte	Staff SWE, F	San Francisc	$90000-$110	Full-time	11
7	Robert Half	Artificial Inte	FP&A Analys	San Francisc	$90000-$110	Internship	30

After 2NF

Company ID	Company	Skills	Job_role	Location	MinSalary	MaxSalary	Employment	Days Posted
1	Enhance IT	Artificial Inte	Junior Data S	San Francisc	$90,000	$110,000	Full-time	28
2	Spectrum La	Artificial Inte	Part-time Re	Remote in W	$30	$50,000	Part-time	30
3	Adobe	Artificial Inte	2023 Univers	San Francisc	$90,000	$50,000	Full-time	25
4	Twitch Intera	Artificial Inte	Data Scientis	Remote in Sa	$90,000	$50,000	Full-time	30
5	Accenture	Artificial Inte	Helpdesk Spe	Remote in Sa	$81,500	$110,000	Full-time	24
6	Kinship	Artificial Inte	Customer Su	Hybrid remot	$90,000	$110,000	Full-time	29
7	Robert Half	Artificial Inte	Assistant Cor	Oakland, CA	$80	$90	Contract+1	3
5	Accenture	Artificial Inte	Staff SWE, F	San Francisc	$90,000	$110,000	Full-time	11
5	Accenture	Artificial Inte	Recruiting Co	Remote in Sa	$48,000	$110,000	Contract	16
8	Genentech	Artificial Inte	Postdoctoral	San Francisc	$90,000	$110,000	Full-time	18
7	Robert Half	Artificial Inte	FP&A Analys	San Francisc	$90,000	$110,000	Internship	30
9	Cruise	Artificial Inte	Senior Execu	San Francisc	$90,000	$110,000	Internship	4
5	Accenture	Artificial Inte	Research Eng	San Francisc	$90,000	$110,000	Full-time	2
7	Robert Half	Artificial Inte	Senior Sourc	San Francisc	$71.45	$76.45	Contract+1	25
7	Robert Half	Artificial Inte	Paralegal	Remote in Sa	$35	$40	Contract+1	3
7	Robert Half	Artificial Inte	Senior Accou	Remote in O	$100,000	$110,000	Internship	30
7	Robert Half	Artificial Inte	Substance U	Oakland, CA	$25.65	$29.70	Contract+1	2
7	Robert Half	Artificial Inte	In House Cou	Remote in Sa	$90,000	$110,000	Contract+1	4
7	Robert Half	Artificial Inte	VP/Director (	Hybrid remot	$60	$80	Full-time+2	30
7	Robert Half	Artificial Inte	Compliance A	Remote in Sa	$47.50	$55	Contract+1	14
10	Michael Pag	Artificial Inte	Enterprise Ac	Remote in Sa	$150,000	$160,000	Internship	23
7	Robert Half	Artificial Inte	Remote Exec	Remote in O	$30	$33	Contract+1	1
5	Accenture	Artificial Inte	People Opera	San Francisc	$90,000	$110,000	Full-time	1
11	Wells Fargo	Artificial Inte	Business Ana	Hybrid remot	$90,000	$110,000	Contract	30
12	data.ai	Artificial Inte	Customer Su	Remote in Sa	$90,000	$110,000	Internship	17
5	Accenture	Artificial Inte	Trainee - Sof	San Francisc	$90,000	$110,000	Full-time	30
5	Accenture	Artificial Inte	Research Sci	San Francisc	$196,000	$300,000	Full-time	21
5	Accenture	Artificial Inte	Product Anal	San Francisc	$90,000	$110,000	Full-time	1
5	Accenture	Artificial Inte	Policy Enforc	San Francisc	$90,000	$110,000	Full-time	30
13	Windfall	Artificial Inte	Data Scientis	San Francisc	$90,000	$110,000	Full-time	30
1	Enhance IT	Artificial Inte	Junior Data S	San Francisc	$35,000	$110,000	Full-time	28
7	Robert Half	Artificial Inte	Assistant Cor	Oakland, CA	$80	$90	Contract+1	3
5	Accenture	Artificial Inte	Staff SWE, F	San Francisc	$90,000	$110,000	Full-time	11
7	Robert Half	Artificial Inte	FP&A Analys	San Francisc	$90,000	$110,000	Internship	30

Third Normal Form (3NF)

- The first condition for the table to be in the Third Normal Form is that the table should be in the Second Normal Form.
- The second condition is that there should be no transitive dependency for non-prime attributes, which indicates that non-prime attributes (not a part of the candidate key) should not depend on other non-prime attributes in a table. Therefore, a transitive dependency is a functional dependency in which A → C (A determines C) indirectly, because of A → B and B → C (where it is not the case that B → A).
- The Third Normal Form ensures the reduction of data duplication. It is also used to achieve data integrity.

Before 3NF

Name	University	Course	Year	Undergrad_s	work_ex	Skills(PK)
a1hooman	Northeastern U	Management I	Fall 2022	5.93 CGPA	0	Artificial Intelligence
a1hooman	Northeastern U	Management I	Fall 2022	5.93 CGPA	0	Data Anaytics
Aakash6993	Northeastern U	Management I	Fall 2022	67%	32	Python
Aakash6993	Northeastern U	Management I	Fall 2022	67%	32	SQL
Aakash6993	Northeastern U	Management I	Fall 2022	67%	32	C++
Abhi2612	Northeastern U	Information M	Fall 2022	73%	0	C
Abhi2612	Northeastern U	Information M	Fall 2022	73%	0	Java
Abhi2612	Northeastern U	Information M	Fall 2022	73%	0	Javascript
Abhi2612	Northeastern U	Information M	Fall 2022	73%	0	HTML
abhimalik96	Northeastern U	Information Sy	Fall 2022	8.19 CGPA	3	Javascript
abhimalik96	Northeastern U	Information Sy	Fall 2022	8.19 CGPA	3	Python
Abhiraj29	Northeastern U	Management I	Fall 2022	7 CGPA	48	Artificial Intelligence
Abhiraj29	Northeastern U	Management I	Fall 2022	7 CGPA	48	Data Anaytics
addy14	Northeastern U	Management I	Fall 2022	7.15 CGPA	3	Python
addy14	Northeastern U	Management I	Fall 2022	7.15 CGPA	3	SQL
addy14	Northeastern U	Management I	Fall 2022	7.15 CGPA	3	C++
Aditikwl	Northeastern U	Information Sy	Fall 2022	79%	6	Javascript
Aditikwl	Northeastern U	Information Sy	Fall 2022	79%	6	Python
AdityaShri199	Northeastern U	Management I	Fall 2022	5.67 CGPA	8	SQL
AdityaShri199	Northeastern U	Management I	Fall 2022	5.67 CGPA	8	cloud
Adityakh5	Northeastern U	Information M	Fall 2022	72%	60	C
Adityakh5	Northeastern U	Information M	Fall 2022	72%	60	Java
Adityakh5	Northeastern U	Information M	Fall 2022	72%	60	Javascript
Adityakh5	Northeastern U	Information M	Fall 2022	72%	60	HTML

After 3NF

Name	University	Course	Year	work_ex	Skills(PK)
a1hooman	Northeastern U	Management I	Fall 2022	0	Artificial Intelligence
a1hooman	Northeastern U	Management I	Fall 2022	0	Data Anaytics
Aakash6993	Northeastern U	Management I	Fall 2022	32	Python
Aakash6993	Northeastern U	Management I	Fall 2022	32	SQL
Aakash6993	Northeastern U	Management I	Fall 2022	32	C++
Abhi2612	Northeastern U	Information M	Fall 2022	0	C
Abhi2612	Northeastern U	Information M	Fall 2022	0	Java
Abhi2612	Northeastern U	Information M	Fall 2022	0	Javascript
Abhi2612	Northeastern U	Information M	Fall 2022	0	HTML
abhimalik96	Northeastern U	Information Sy	Fall 2022	3	Javascript
abhimalik96	Northeastern U	Information Sy	Fall 2022	3	Python
Abhiraj29	Northeastern U	Management I	Fall 2022	48	Artificial Intelligence
Abhiraj29	Northeastern U	Management I	Fall 2022	48	Data Anaytics
addy14	Northeastern U	Management I	Fall 2022	3	Python
addy14	Northeastern U	Management I	Fall 2022	3	SQL
addy14	Northeastern U	Management I	Fall 2022	3	C++
Aditikwl	Northeastern U	Information Sy	Fall 2022	6	Javascript
Aditikwl	Northeastern U	Information Sy	Fall 2022	6	Python
AdityaShri199	Northeastern U	Management I	Fall 2022	8	SQL
AdityaShri199	Northeastern U	Management I	Fall 2022	8	cloud
Adityakh5	Northeastern U	Information M	Fall 2022	60	C
Adityakh5	Northeastern U	Information M	Fall 2022	60	Java
Adityakh5	Northeastern U	Information M	Fall 2022	60	Javascript
Adityakh5	Northeastern U	Information M	Fall 2022	60	HTML
acegohan	Northeastern U	Management I	Fall 2022	15	Artificial Intelligence
acegohan	Northeastern U	Management I	Fall 2022	15	Data Anaytics
Achiever1989	Northeastern U	Information Sy	Fall 2022	60	Javascript
Achiever1989	Northeastern U	Information Sy	Fall 2022	60	Python
Achus	Northeastern U	Information Sy	Fall 2022	36	Javascript
Achus	Northeastern U	Information Sy	Fall 2022	36	Python
adi666452	Northeastern U	Information Sy	Fall 2022	4	Javascript,Python

Name	Undergrad_score
a1hooman	5.93 CGPA
a1hooman	5.93 CGPA
Aakash6993	67%
Aakash6993	67%
Aakash6993	67%
Abhi2612	73%
Abhi2612	73%
Abhi2612	73%
Abhi2612	73%
abhimalik96	8.19 CGPA
abhimalik96	8.19 CGPA
Abhiraj29	7 CGPA
Abhiraj29	7 CGPA
addy14	7.15 CGPA
addy14	7.15 CGPA
addy14	7.15 CGPA
Aditikwl	79%
Aditikwl	79%
AdityaShri199	5.67 CGPA
AdityaShri199	5.67 CGPA
Adityakh5	72%
Adityakh5	72%
Adityakh5	72%
Adityakh5	72%
acegohan	78%
acegohan	78%
Achiever1989	7 CGPA
Achiever1989	7 CGPA
Achus	7 CGPA
Achus	9.1 CGPA
adi666452	9.1 CGPA

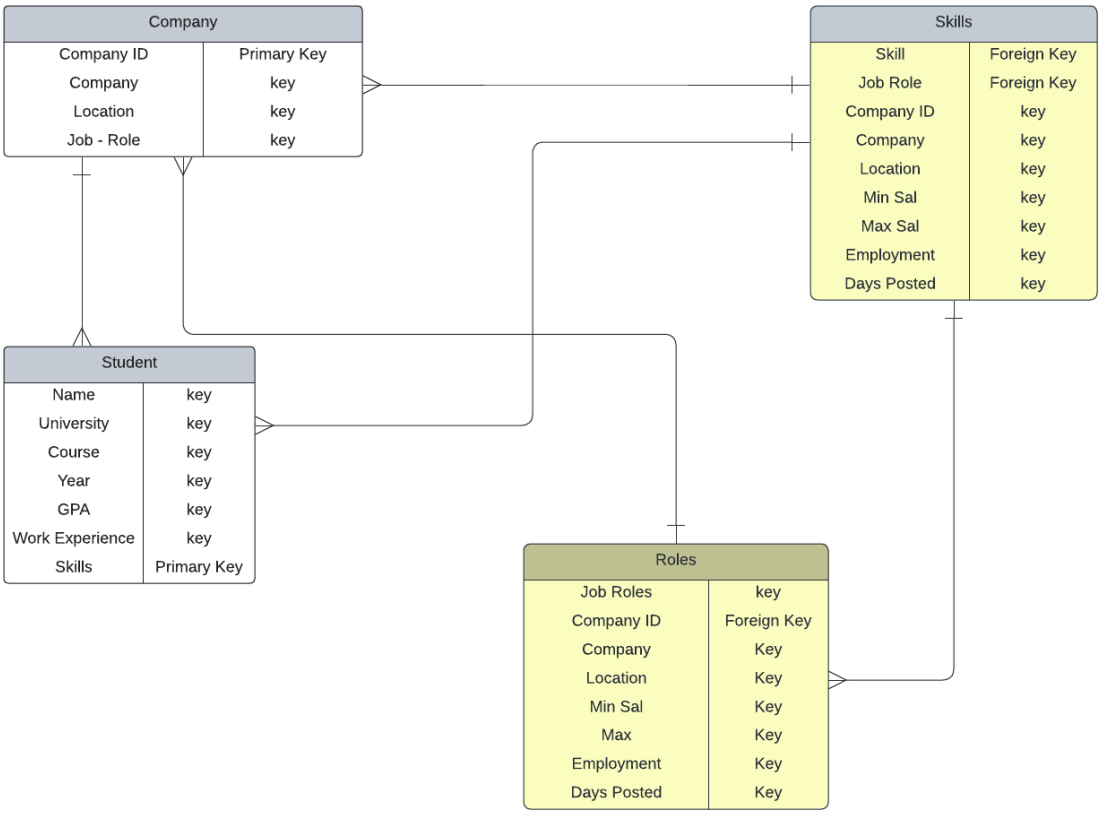

Fig: ER diagram

Use Cases:

1. Use Case: List the number of job openings in the Boston location.
   Description: The user is looking for job positions at Boston Location.
   Actors: User.
   Precondition: The user must have access to the SQL server.
   Steps:
   Actor action – User queries about a number of jobs to order.
   System Responses – An order is made for the Roles that match the Employment in Boston location in the Roles and Company table.
   Alternate Path: There are no job openings in Boston.
   Error: No rows selected.

```
CREATE View Boston_Jobs as
SELECT r.Employment, r.Days_posted, c.Location
FROM Roles r
INNER JOIN company c ON r.companyID = c.companyID
WHERE c.Location LIKE 'Boston%';

Select * from Boston_Jobs;
```

2. Use Case: List the companies using artificial intelligence.
Description: The user is looking for companies using artificial intelligence.
Actors: User.
Precondition: The user must have access to the SQL server.
Steps:
Actor action – User queries about companies' number of skills of artificial intelligence.
System Responses – An order is made for the skills that match the company in the Skills and Company table.
Alternate Path: There is no company using artificial intelligence.

```
CREATE VIEW Skills_ArtificialIntelligence as
SELECT sk.Skills,sk.company,c.Location
From Skills sk
RIGHT JOIN company c ON sk.CompanyID=c.CompanyID
WHEREsk.skills='Artificial Intelligence';

Select * from Skills_ArtificialIntelligence;
```

3. Use Case: List the companies that posted jobs for less than 10 days.
Description: The user is looking for companies that posted jobs for less than 10 days.
Actors: User.
Precondition: The user must have access to the SQL server.
Steps:
Actor action – User queries about companies that posted jobs for less than 10 days.
System Responses – An order is made for the skills table that matches the company in the Skills and Company table.
Alternate Path: There is no company posted salary within 10days.

```
CREATE VIEW jobs_posted as
SELECT sk.Skills,sk.company,c.Location,sk.Days_posted
FROM Skills sk
RIGHT JOIN company c ON sk.CompanyID=c.CompanyID
WHERE sk.Days_posted<11;

Select * from jobs_posted;
```

4. Use Case: List the number of job openings in Robert Half
Description: The user is looking for Robert Half job opening.
Actors: User.

Precondition: The user must have access to the SQL server.
Steps:
Actor action – User queries about Robert Half job openings.
System Responses – An order is made skills table that matches the company in the Skills and Company table.
Alternate Path: There is no job openings in for Robert Half.

```
CREATE VIEW company_Robert as
SELECT sk.Skills,sk.company,c.Location
FROM Skills sk
RIGHT JOIN company c ON sk.CompanyID=c.CompanyID
WHERE sk.Company = 'Robert Half';

Select * from company_Robert;
```

5. Use Case: List the number of companies which has Contract job openings.
Description: The user is looking for contract job positions at all Location.
Actors: User.
Precondition: The user must have access to the SQL server.
Steps:
Actor action – User queries about several jobs to order.
System Responses – An order is made for the companies that match the Employment in all locations in the Skills and Company table based on CompanyID.
Alternate Path: There are no contract employment job openings.
Error: No rows selected.

```
CREATE VIEW Employment_Contract as
SELECT c.Company,c.Location,sk.Job_role,sk.Employment
FROM company c
INNER JOIN Skills sk ON c.CompanyID=sk.CompanyID
WHERE sk.Employment='Contract';

Select * from Employment_Contract;
```

6. Use Case: List the number of companies which offers Minimum wage salary.
Description: The user is looking for all the Minimum wage job positions at all Location.
Actors: User.
Precondition: The user must have access to the SQL server.
Steps:
Actor action – User queries about several jobs to order.
System Responses – An order is made for the companies that match the

Minimum wage criteria at all locations in the Roles and Company table based on CompanyID.

Alternate Path: There are no contract employment job openings.

Error: No rows selected.

```
CREATE VIEW Min_Salary as
SELECT c.Company,c.Location,r.Minsalary,r.Employment
FROM company c
INNER JOIN Roles r ON c.CompanyID=r.CompanyID
WHERE r.Minsalary Like '110%';

Select * from Min_Salary;
```

7. Use Case: List the companies that posted jobs for greater than 5 days.

Description: The user is looking for companies that posted jobs for more than 5 days.

Actors: User.

Precondition: The user must have access to the SQL server.

Steps:

Actor action – User queries about companies that posted jobs for more than 5 days.

System Responses – An order is made for the skills table that matches the company in the Skills and Company table.

Alternate Path: There is no company posted salary more than 5 days.

```
CREATE VIEW jobs_posted as
SELECT sk.Skills,sk.company,c.Location,sk.Days_posted
FROM Skills sk
RIGHT JOIN company c ON sk.CompanyID=c.CompanyID
WHERE sk.Days_posted>5;

Select * from jobs_posted;
```

8. Use Case: List the number of python skill job openings in San Francisco .

Description: The user is looking for job openings for python at SF Location.

Actors: User.

Precondition: The user must have access to the SQL server.

Steps:

Actor action – User queries about several jobs to order.

System Responses – An order is made for the companies that match the

Python skills in SF locations in the Skills and Company table based onCompanyID.

Alternate Path: There are no contract employment job openings.

Error: No rows selected.

```
CREATE VIEW jobsin_Sanfrancisco as
SELECT sk.Skills,sk.company,c.Location,c.Job_role
FROM Skills sk
RIGHT JOIN company c on sk.CompanyID=c.CompanyID
```

```
WHERE sk.skills='Python' and sk.Location='%San Francisco%';

Select * from Jobin_Sanfrancisco;
```

9. Use Case: List the number of companies which has Internship openings.
Description: The user is looking for Internship job positions at all Location.
Actors: User.
Precondition: The user must have access to the SQL server.
Steps:
Actor action – User queries about several jobs to order.
System Responses – An order is made for the companies that match the Employment in all locations in the Skills and Company table based on CompanyID.
Alternate Path: There are no contract employment job openings.
Error: No rows selected.

```
CREATE VIEW Internship_offer as
SELECT r.Company,r.Location,sk.skills,sk.Job_role,sk.Employment
FROM Roles r
INNER JOIN Skills sk on r.CompanyID=sk.CompanyID
WHERE sk.Employment='Internship';

Select * from Internship_offer;
```

10. Use Case: Created a View to find the companies in New york
Description: The user is looking for the companies in New york
Actors: User.
Precondition: The user must have access to the SQL server.
Steps:
Actor action – User queries about several companies
System Responses – An order is made for the companies that match the location NY.
Alternate Path: There are no companies in NewYork.

```
CREATE VIEW New_York as
SELECT * from company as c
WHERE c.location='New York, NY';


SELECT * from New_York;
```