

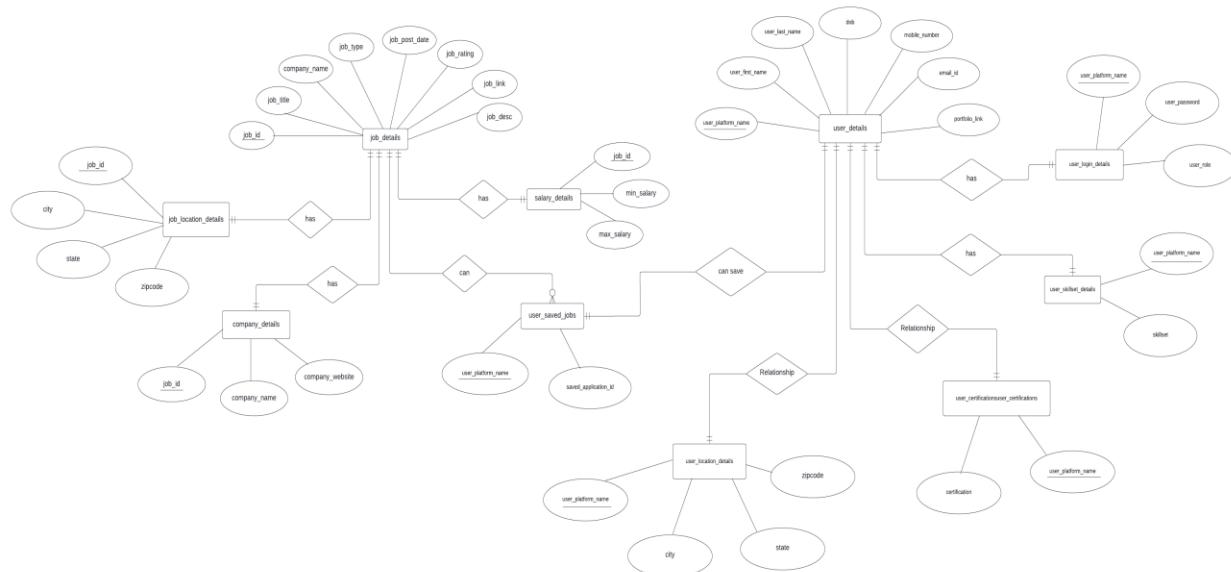
# Final Project – One Stop Job

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## About the project:

The objective of this project is to create a database for job finders where they need to type in the job role and select from which job sites they will apply for that job. The database will consist of data from the most visited job sites like Indeed, Glassdoor and Monster.

We scrape the necessary data required and store them in a csv file. Later this csv file is cleaned and made free of duplicate and null values. This data is stored in the Sql table. We can perform necessary functions such as searching and filtering the data by using the data stored in the table.



**Fig 1: One Stop Job Final ER diagram**

## Initial Schema:

At inception of the project the basic jobs DB schema was designed as depicted below.

job_details		
	job_title	varchar256
	company_name	varchar256
	location	varchar128
	salary	varchar128
	job_type	varchar50
	job_post_date	date
	job_rating	float
	job_link	varchar256
	job_desc	varchar400
	company_website	varchar256

user_details		
	user_name	varchar128
	dob	date
	user_location	varchar128
	mobile_number	varchar20
	email_id	varchar128
	portfolio_link	varchar256
	skillset	varchar256
	saved_application_id	varchar256
	certifications	varchar256

user_login_details		
	user_platform_name	varchar128
	user_password	varchar128
	user_role	varchar20

**Fig 2: Initial Schema**

	Job_Title	Job_URL	Company_name	Company_URL	Rating	Salary	Job_Type	Job_descriptio...	Job_description	Post_Date	Location
0	Senior Software Engineer - .NET-Hybrid	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	RXO		NaN	NaN	a year\nIndeed est.	On call	Mentor developers and helps resolve technical ...	Posted\nPosted 8 days ago	Chicago, IL 60601 \Loop area
1	Senior Network & Cloud Engineer	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	DominionTech Computer Services	https://www.indeed.com/cmp/Dominiontech-Comput...	5.0	NaN	Full-time	Serve Virtualization on-premises and in the .	Server on-premises and in the ...	Posted\nPosted 30 days ago	Williston, VT 05495
2	Intermediate Software Developer	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	Cornell Pump Company	https://www.indeed.com/cmp/Cornell-Pump-LLC	4.3	82.7K-105K a year\nIndeed est.	Full-time	The successful candidate will join a well form.	The successful candidate will join a well-form...	Posted\nPosted 30+ days ago	Clackamas, OR 97015
3	AWS Cloud Engineer	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	i4DM	https://www.indeed.com/cmp/i4dm-5	5.0	112K-142K a year\nIndeed est.	Full-time	Build a cloud based technical architectur tha...	Build a cloud-based technical architecture tha...	Posted\nPosted 2 days ago	Remote
4	Azure Developer	https://www.indeed.com/company/Infinity-Quest/...	Infinity Quest		NaN	NaN	Contract	Develop an implement clou migration strategie...	Develop and implement cloud migration strategies.	Posted\nPosted 1 day ago	Redmond, WA

**Fig 3: Initial Schema Table**

## **Create Table for Initial Schema:**

### **Create table JOBS\_BASIC\_DETAILS**

```
CREATE TABLE IF NOT EXISTS job_basic_details
  (job_title TEXT,
   company_name TEXT,
   location TEXT,
   salary TEXT,
   job_type TEXT,
   job_post_date datetime,
   job_rating Float,
   job_link TEXT,
   job_desc TEXT,
   company_website TEXT);
```

### **Create table USER\_BASIC\_DETAILS**

```
CREATE TABLE IF NOT EXISTS user_basic_details
  (user_name TEXT ,
   dob datetime,
   user_location TEXT,
   mobile_number TEXT,
   email_id TEXT,
   portfolio_link TEXT,
   skillset TEXT,
   saved_application_id TEXT,
   certifications TEXT);
```

### **Create table USER\_LOGIN\_BASIC\_DETAILS**

```
CREATE TABLE IF NOT EXISTS user_login_basic_details  
    (user_platform_name TEXT ,  
     user_password TEXT,  
     user_role TEXT);
```

## **Sources of Data:**

To obtain relevant and high-quality data, choose the proper data source. For this assignment, we have collected most of the data from Indeed. We have also used web scrapper tools to get data from Glassdoor and Monster etc.

Scraping script:

[https://github.com/aiskunks/Jobs\\_Database/blob/main/One\\_stop\\_job/IndeedScraping.ipynb](https://github.com/aiskunks/Jobs_Database/blob/main/One_stop_job/IndeedScraping.ipynb)

## **Download and reformat the data:**

The scraped data was raw data that we audited, cleaned, and validated with completeness. This involved downloading and reformatting the raw data.

Please find the Github links below:

[https://github.com/aiskunks/Jobs\\_Database/blob/main/One\\_stop\\_job/ScrapedData.csv](https://github.com/aiskunks/Jobs_Database/blob/main/One_stop_job/ScrapedData.csv)

[https://github.com/aiskunks/Jobs\\_Database/blob/main/One\\_stop\\_job/FinalProjectScript.ipynb](https://github.com/aiskunks/Jobs_Database/blob/main/One_stop_job/FinalProjectScript.ipynb)

## **Data Validation:**

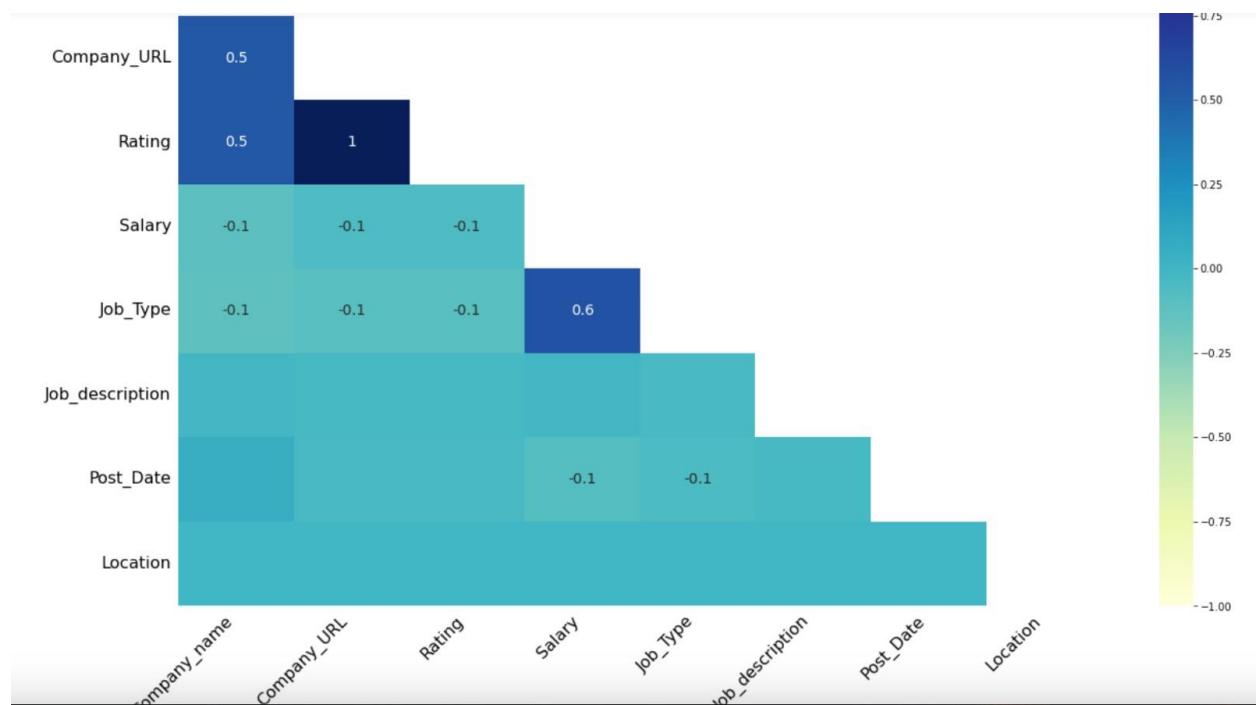
Completeness: refers to the extent to which an entity contains the information needed to describe a real-world object. The presence of null

values, which are typically regarded as missing values, in tables in relational database systems can be used to determine how full a table is.

Consistency: The degree to which a set of semantic rules are violated such as a specific data type, an interval for a numerical column, or a set of values for a categorical column.

Accuracy: The correctness of the data and can be measured in two dimensions: syntactic and semantic. Semantic accuracy contrasts a value with its actual representation, while syntactic accuracy compares a value's representation with a domain of definition that corresponds.

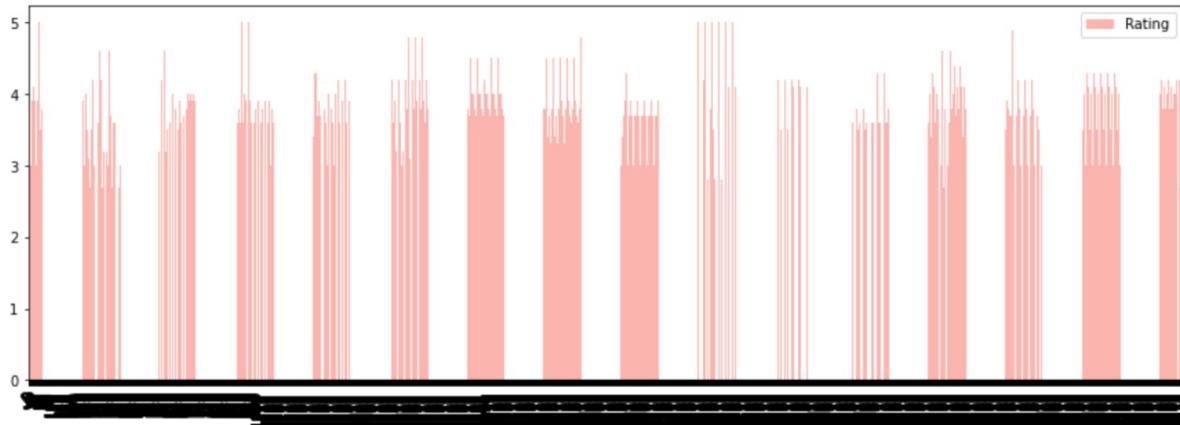
## **Visualizing Missing Data and Validate data to check missing values (Before Cleaning):**



**Fig 4: Graph to show null values**

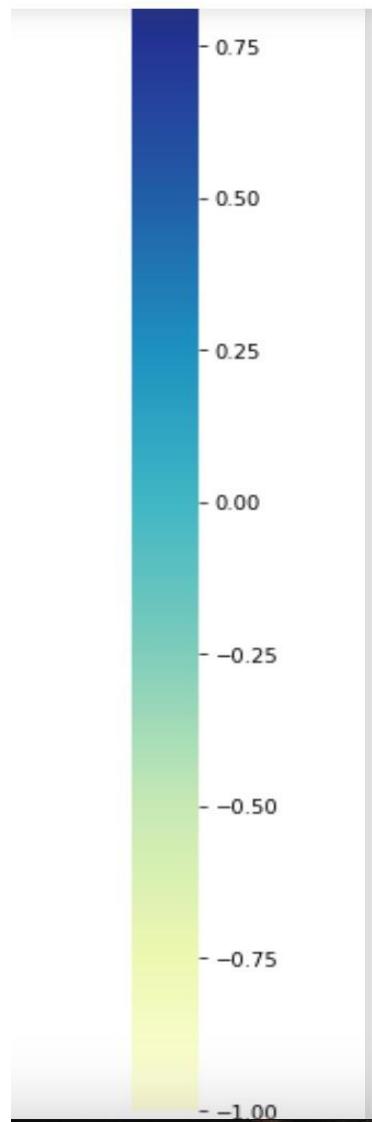
```
1 # #graph to show rating values before cleaning
2 df.plot(kind='bar', stacked=True, colormap='Pastell1', figsize=(15, 5))
```

<AxesSubplot:>



**Fig 5: Stacked bar graph**

## **Visualizing Missing Data and Validate data to check missing values (After Cleaning):**



**Fig 6: Graph after removing null values**

```
1 #graph after removing duplicates and null - since rating is the only numerical value for now
2 df.plot(kind='bar', stacked=True, colormap='Pastell')
```

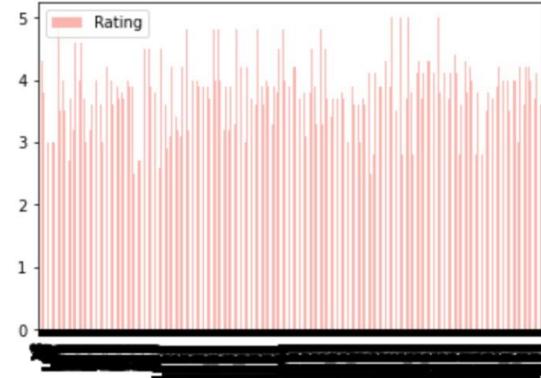


Fig 7: Stacked bar graph

```
1 df['Min_salary'].plot.hist(color='b', alpha = 0.5, bins = 50)
```

```
<AxesSubplot:ylabel='Frequency'>
```

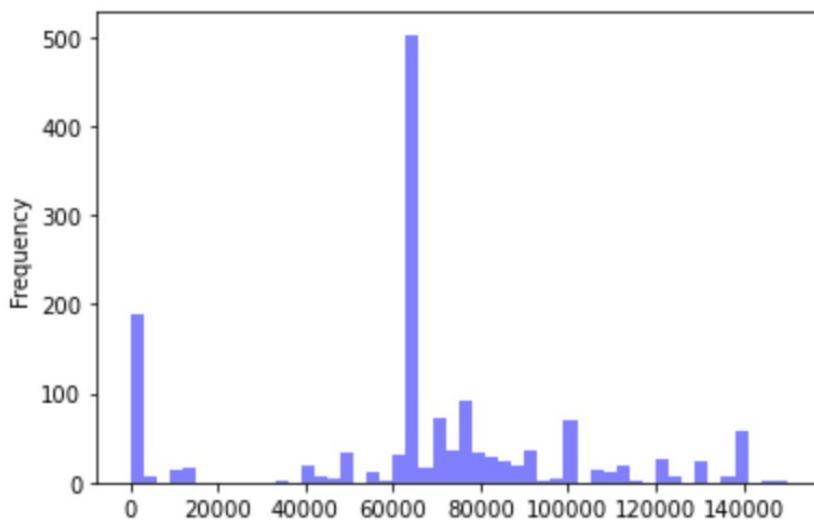
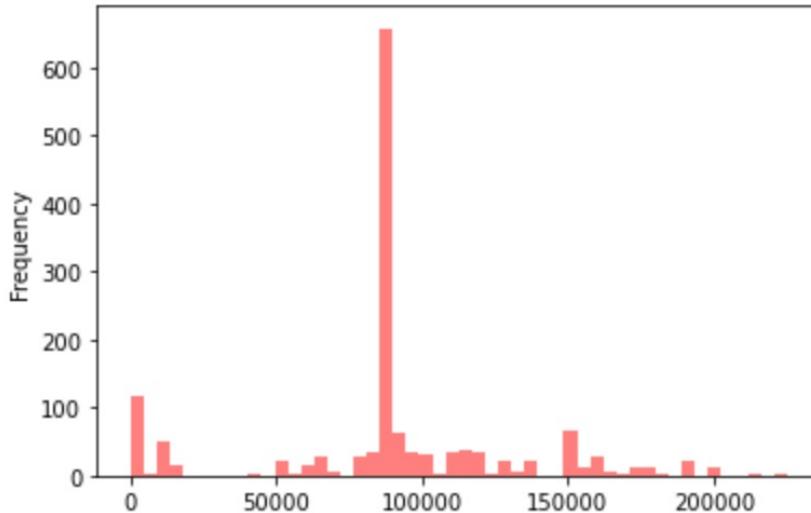


Fig 8: Histogram for min\_salary

```
1 df['Max_salary'].plot.hist(color='r', alpha = 0.5, bins = 50)
```

<AxesSubplot:ylabel='Frequency'>



**Fig 9: Histogram for max\_salary**

## Table for the Initial Schema after cleaning:

Job_Title	Job_URL	Company_name	Company_URL	Rating	Job_Type	Job_description	Post_Date	I	Min_salary	Max_salary	City	State	ZipCode
2 Intermediate Software Developer	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	Cornell Pump Company	https://www.indeed.com/cmp/Cornell-Pump-LLC	4.3	Full-time	The successful candidate will join a well-form...	2022-11-14	827	82700.000000	10500.000000	Clackamas	OR	97015
8 SQL Server Developer II - Remote	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	Medical Mutual of Ohio	https://www.indeed.com/cmp/Medical-Mutual-of-Ohio	3.9	Full-time	Experience with multiple hardware and software...	2022-11-14	822	82200.000000	10400.000000	Brooklyn	OH	44144
16 Senior Sitecore Developer	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	Arrow Electronics, Inc.	https://www.indeed.com/cmp/Arrow-Electronics	3.5	Full-time	Experience working on a cloud computing platfo...	2022-11-14	865	86500.000000	11000.000000	Florence	SC	29501
18 Full Stack Software Engineer Lead/Advisor - Cl...	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	Fannie Mae	https://www.indeed.com/cmp/Fannie-Mae	4.0	Full-time	Must be a full-stack developer and understand ...	2022-11-14	140	14000.000000	17700.000000	Washington	DC	20022
32 Intermediate Software Developer	https://www.indeed.com/pagead/click?mo=r&ad=6NY...	Cornell Pump Company	https://www.indeed.com/cmp/Cornell-Pump-LLC	4.3	Full-time	The successful candidate will join a well-form...	2022-11-14	827	82700.000000	10500.000000	Clackamas	OR	97015
...	...	...	...	...	...	...	...	...	...	...	...	...	...
5031 Software Engineer (Front End)	https://www.indeed.com/rc/clk?jk=bcbfa1f1f1670...	Amplify Education, Inc.	https://www.indeed.com/cmp/Amplify-Education,-...	4.0	Full-time	Salary is only one component of the Amplify To...	2022-12-08	1010	101000.000000	131000.000000	Boston	MA	02110

**Fig 10: Initial Schema without duplicate and null values**

Here the data is not normalized and has high chances of losing data integrity and potential duplication of data. Hence, normalizing the existing schema using the First Normal Form(1NF).

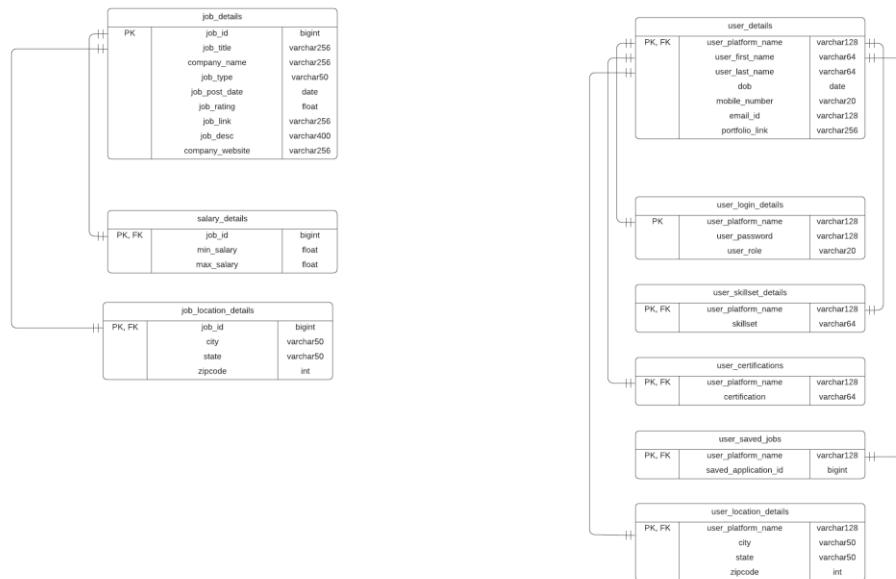
## **First Normal Form (1NF):**

Every column in the table must be unique. Separate tables must be created for each set of related data. Each table must be identified with a unique column or concatenated columns called the primary key.

The existing data contains the location column that can be further reduced into city, state, and zip code. The salary column contains the min and max range of estimated pay for a particular job role. This can be further reduced to min salary and max salary.

Similarly, the location column in the user\_details table can also be broken down into city, state and zip code.

user\_details table has multiple skill sets, certifications, saved applications. This can be further reduced using the foreign keys as shown below.



**Fig 11: 1NF Schema**

## Schema and Table for 1NF:

### Create table JOB\_DETAILS

CREATE TABLE IF NOT EXISTS job\_details

```
(job_id INTEGER PRIMARY KEY,
job_title TEXT,
company_name TEXT,
job_type TEXT,
job_post_date datetime,
job_rating Float,
job_link TEXT,
job_desc TEXT,
company_website TEXT);
```

Out[58]:									
	job_id	job_title	company_name	job_type	job_post_date	job_rating	job_link	job_desc	company_website
0	1	Board Certified Behavior Analyst	North Oakland Autism Center	Full-time\n+1	11/13/22	3.9	<a href="https://www.indeed.com/pagead/click?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/click?mo=r&amp;ad=6NY...</a>	Our ideal candidate will competently manage a ...	<a href="https://www.indeed.com/cmp/North-Oakland-Autis...">https://www.indeed.com/cmp/North-Oakland-Autis...</a>
1	2	Economic Analyst - Remote ***Guaranteed minimum...	Augusta Precious Metals	Full-time\n+1	12/08/22	3.8	<a href="https://www.indeed.com/company/Augusta/jobs/Eco...">https://www.indeed.com/company/Augusta/jobs/Eco...</a>	We will provide in-house systems and complian...	<a href="https://www.indeed.com/cmp/Augusta-7">https://www.indeed.com/cmp/Augusta-7</a>
2	3	Legal Compliance Analyst - Hybrid job	Odoo Inc	Full-time		4.5	<a href="https://www.indeed.com/pagead/click?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/click?mo=r&amp;ad=6NY...</a>	Odoo ERP system is enterprise resource plannin...	<a href="https://www.indeed.com/cmp/Odoo-Inc">https://www.indeed.com/cmp/Odoo-Inc</a>
3	4	Health Policy Analyst	Centers for Disease Control and Prevention	Full-time\n+1	12/11/22	4.2	<a href="https://www.indeed.com/rc/clk?k=e310b2eb1791...">https://www.indeed.com/rc/clk?k=e310b2eb1791...</a>	Public Trust/Moderate Background Investigation...	<a href="https://www.indeed.com/cmp/Centers-For-Disease...">https://www.indeed.com/cmp/Centers-For-Disease...</a>
4	5	Service Desk Analyst	Spruce	Contract	11/24/22	3.4	<a href="https://www.indeed.com/company/Spruce/jobs/Ser...">https://www.indeed.com/company/Spruce/jobs/Ser...</a>	Monitor and answer the Service Desk phone, e-m...	<a href="https://www.indeed.com/cmp/Spruce">https://www.indeed.com/cmp/Spruce</a>
...	...	...	...	...	...	...	...	...	...
1060	1061	Software Engineer I (Remote Option)	Nike	Full-time	11/13/22	4.1	<a href="https://www.indeed.com/rc/clk?k=c2b80345dd8b...">https://www.indeed.com/rc/clk?k=c2b80345dd8b...</a>	Experience with version control tools such as ...	<a href="https://www.indeed.com/cmp/Nike">https://www.indeed.com/cmp/Nike</a>
1061	1062	Software Engineer Co-Op (Spring 2023 - Yarmouth)	Garmin International, Inc.	Full-time\n+1	11/13/22	3.7	<a href="https://www.indeed.com/rc/clk?k=5a748f5c432c9...">https://www.indeed.com/rc/clk?k=5a748f5c432c9...</a>	Learn to perform software releases and softwar...	<a href="https://www.indeed.com/cmp/Garmin">https://www.indeed.com/cmp/Garmin</a>
1062	1063	IT Software Developer	Miami-Dade County	Full-time	11/13/22	4.2	<a href="https://www.indeed.com/rc/clk?k=0c6201a24f1d0...">https://www.indeed.com/rc/clk?k=0c6201a24f1d0...</a>	Two years of experience in software development...	<a href="https://www.indeed.com/cmp/Miami-Dade-County">https://www.indeed.com/cmp/Miami-Dade-County</a>

Fig 12: 1NF table 1

## Create table SALARY\_DETAILS

```
CREATE TABLE IF NOT EXISTS salary_details
( job_id INTEGER PRIMARY KEY ,
  min_salary Float,
  max_salary Float,
  FOREIGN KEY (job_id) REFERENCES job_details(job_id));
```

Out[78]:

	job_id	min_salary	max_salary
0	1	50000.000000	90000.000000
1	2	100000.000000	99835.174767
2	3	75000.000000	110000.000000
3	4	89834.000000	138868.000000
4	5	40.000000	60.000000
...	...	...	...
1060	1061	107500.000000	161500.000000
1061	1062	1.000000	99835.174767
1062	1063	73674.000000	99835.174767
1063	1064	101000.000000	131000.000000
1064	1065	68641.781811	99835.174767

1065 rows × 3 columns

Fig 13: 1NF Table 2

## Create table JOB\_LOCATION\_DETAILS

```
CREATE TABLE IF NOT EXISTS job_location_details
(job_id INTEGER PRIMARY KEY ,
 city TEXT,
 state TEXT,
 zipcode INTEGER,
 FOREIGN KEY (job_id) REFERENCES job_details(job_id));
```

Out[79]:

	job_id	city	state	zipcode
0	1	Lake Orion	MI	48362
1	2	San Francisco	CA	94134
2	3	South Paris	ME	4281
3	4	Denver	CO	80207
4	5	Grand Island	NE	68801
...	...	...	...	...
1060	1061	Boston	MA	02109
1061	1062	Hartford	CT	06105
1062	1063	Boston	MA	02116
1063	1064	Hartford	CT	06105
1064	1065	Grand Island	NE	68801

1065 rows × 4 columns

Fig 14: 1NF table 3

## Create table USER\_LOGIN\_DETAILS

```
CREATE TABLE IF NOT EXISTS user_login_details  
    (user_platform_name TEXT PRIMARY KEY ,  
     user_password TEXT,  
     user_role TEXT);
```

	user_platform_name	user_password	user_role
0	@Hilton	Hilton@123	seeker

Fig 15: 1NF table 4

## Create table USER\_DETAILS

```
CREATE TABLE IF NOT EXISTS user_details  
    (user_platform_name TEXT PRIMARY KEY ,
```

```

user_first_name TEXT,
user_last_name TEXT,
dob datetime,
mobile_number TEXT,
email_id TEXT,
portfolio_link TEXT,
FOREIGN KEY (user_platform_name) REFERENCES
user_login_details(user_platform_name));

```

user_platform_name	user_first_name	user_last_name	dob	mobile_number	email_id	portfolio_link
0	@Hilton	Hilton	Benson	1998-04-02	7658904321	hilton.savage@gmail.com

**Fig 16: 1NF table 5**

### Create table **USER\_SKILLSET\_DETAILS**

```

CREATE TABLE IF NOT EXISTS user_skillset_details
(user_platform_name TEXT PRIMARY KEY ,
skillset TEXT,
FOREIGN KEY (user_platform_name) REFERENCES
user_details(user_platform_name));

```

user_platform_name	skillset
0	@Hilton Java

**Fig 17: 1NF table 6**

### Create table **USER\_CERTIFICATIONS**

```

CREATE TABLE IF NOT EXISTS user_certifications
(user_platform_name TEXT PRIMARY KEY ,
certification TEXT,

```

```

FOREIGN KEY (user_platform_name) REFERENCES
user_details(user_platform_name) );

```

<b>user_platform_name</b>	<b>certification</b>
0	@Hilton AWS CCP

**Fig 18: 1NF table 7**

### **Create table USER\_SAVED\_JOBS**

```

CREATE TABLE IF NOT EXISTS user_saved_jobs
(user_platform_name TEXT PRIMARY KEY ,
 saved_application_id INTEGER,
 FOREIGN KEY (user_platform_name) REFERENCES
user_details(user_platform_name));

```

<b>user_platform_name</b>	<b>saved_application_id</b>
0	@Hilton 1

**Fig 19: 1NF table 8**

### **Create table USER\_LOCATION\_DETAILS**

```

CREATE TABLE IF NOT EXISTS user_location_details
(user_platform_name TEXT PRIMARY KEY ,
 city TEXT,
 state TEXT,
 zipcode INTEGER,
 FOREIGN KEY (user_platform_name) REFERENCES
user_details(user_platform_name));

```

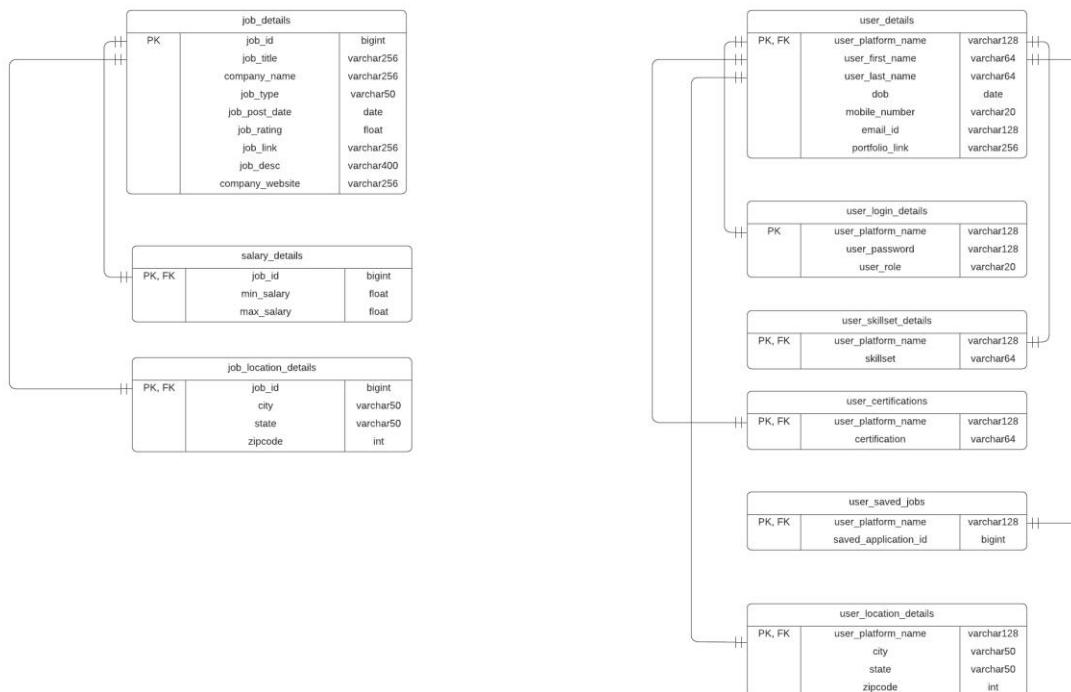
<b>user_platform_name</b>	<b>city</b>	<b>state</b>	<b>zipcode</b>
<b>0</b>	@Hilton	Boston	MA

**Fig 20: 1NF table 9**

## Second Normal Form (2NF):

Second Normal Form (2NF) is based on the concept of full functional dependency. Second Normal Form applies to relations with composite keys, that is, relations with a primary key composed of two or more attributes. A relation with a single-attribute primary key is automatically in at least 2NF.

As we are using single column reference in constructing the primary key, there is no partial dependency on the composition of the primary key but full dependent on the primary key. Hence, there are no changes in the schema from 1NF to 2 NF.



**Fig 21: 2NF Schema**

## Third Normal Form (3NF):

A given relation is said to be in its third normal form when it's in 2NF but has no transitive partial dependency. Meaning, when no transitive dependency exists for the attributes that are non-prime, then the relation can be said to be in 3NF.

From the 2NF schema, it can be observed that company website column in the job\_details table is dependent on company\_name which is non candidate key. Hence, as per 3NF, the columns in the job\_details table are reduced to be completely functionally dependent on the primary key and created a new table(company\_details) that has company relevant information.

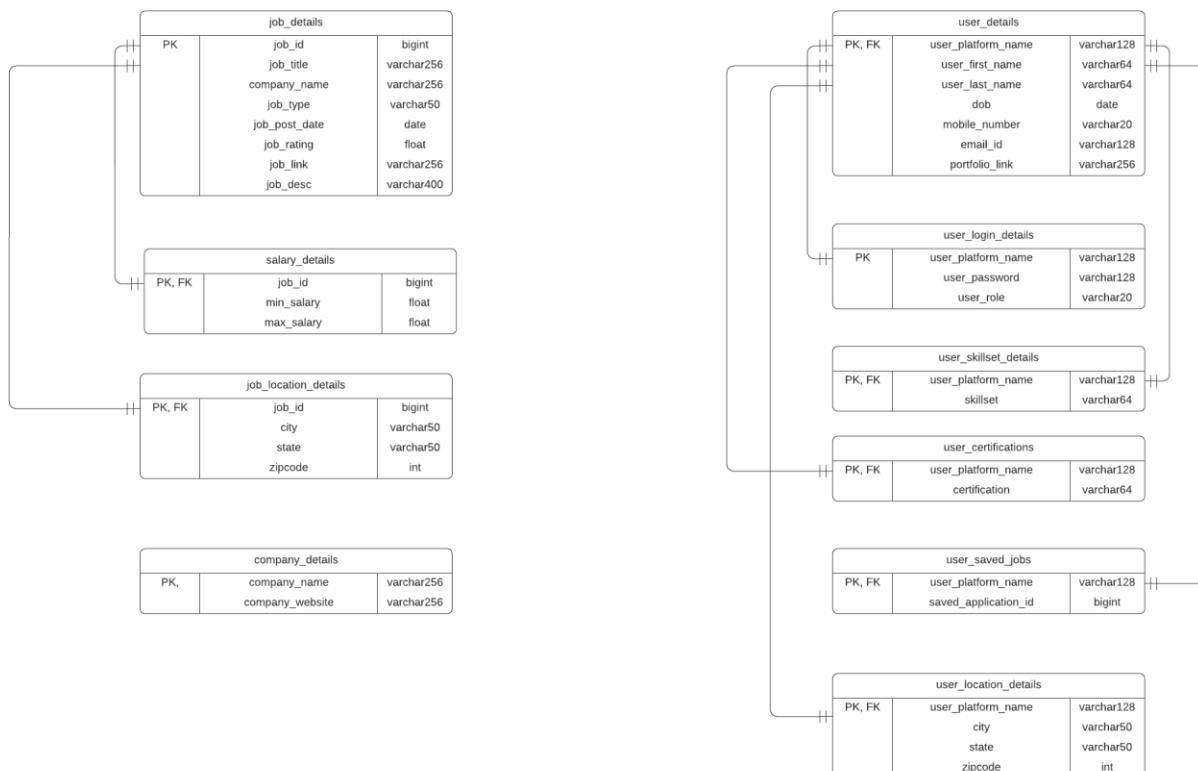


Fig 22: 3NF Schema

## Normalizing into 3NF.

```
In [103]: # Create company_details table as per 3 NF rules
conn = sqlite3.connect('JobsFinalDatabase.db')
print("Opened database successfully");
conn.execute('''DROP TABLE IF EXISTS company_details;''')
conn.execute('''CREATE TABLE IF NOT EXISTS company_details
(
    job_id INTEGER PRIMARY KEY,
    company_name TEXT,
    company_website TEXT,
    FOREIGN KEY (job_id) REFERENCES job_details(job_id)
);'''')

print("company_details Table created successfully");

conn.close()

Opened database successfully
company_details Table created successfully
```

```
In [106]: # Alter job_details table as per 3 NF rules
conn = sqlite3.connect('JobsFinalDatabase.db')
print("Opened database successfully");
conn.execute('''ALTER TABLE job_details DROP COLUMN company_website;''')
print("Altered job_details table as per 3 NF rules");

conn.close()

Opened database successfully
Altered job_details table as per 3 NF rules
```

```
In [107]: con = sqlite3.connect('JobsFinalDatabase.db')
q1 = (
'''SELECT * from job_details;''')

r1 = pd.read_sql(q1, con)
r1.head(1)
r1
```

```
Out[107]:
   job_id      job_title   company_name job_type job_post_date  job_rating      job_link          job_desc
0     1  Intermediate Software        Cornell Pump      Full-time  2022-11-14       4.3  https://www.indeed.com/pagead/clk?...  The successful
                                         Developer           Company
                                                       mo=r&ad=-6NY...
                                                       ...
1     2  SQL Server Developer II -  Medical Mutual of      Full-time  2022-11-14       3.9  https://www.indeed.com/pagead/clk?...  Experience with multiple
                                         Remote            Ohio
                                                       mo=r&ad=-6NY...
                                                       hardware and software...
```

## Schema and Table for 3NF:

Create table COMPANY\_DETAILS

CREATE TABLE IF NOT EXISTS company\_details  
(company\_name TEXT PRIMARY KEY ,  
company\_website TEXT );

	company_name	company_website
0	North Oakland Autism Center	https://www.indeed.com/cmp/North-Oakland-Autis...
1	Augusta Precious Metals	https://www.indeed.com/cmp/Augusta-7
2	Odoo Inc	https://www.indeed.com/cmp/Odoo-Inc
3	Centers for Disease Control and Prevention	https://www.indeed.com/cmp/Centers-For-Disease...
4	Spruce	https://www.indeed.com/cmp/Spruce
...	...	...
90	National Instruments	https://www.indeed.com/cmp/National-Instruments-1
91	Garmin International, Inc.	https://www.indeed.com/cmp/Garmin
92	PayPal	https://www.indeed.com/cmp/Paypal
93	Insurance Technologies	https://www.indeed.com/cmp/Hexure-1
94	Amplify Education, Inc.	https://www.indeed.com/cmp/Amplify-Education,-...

Fig 23: 3NF Table

## Final Normalized Schema:

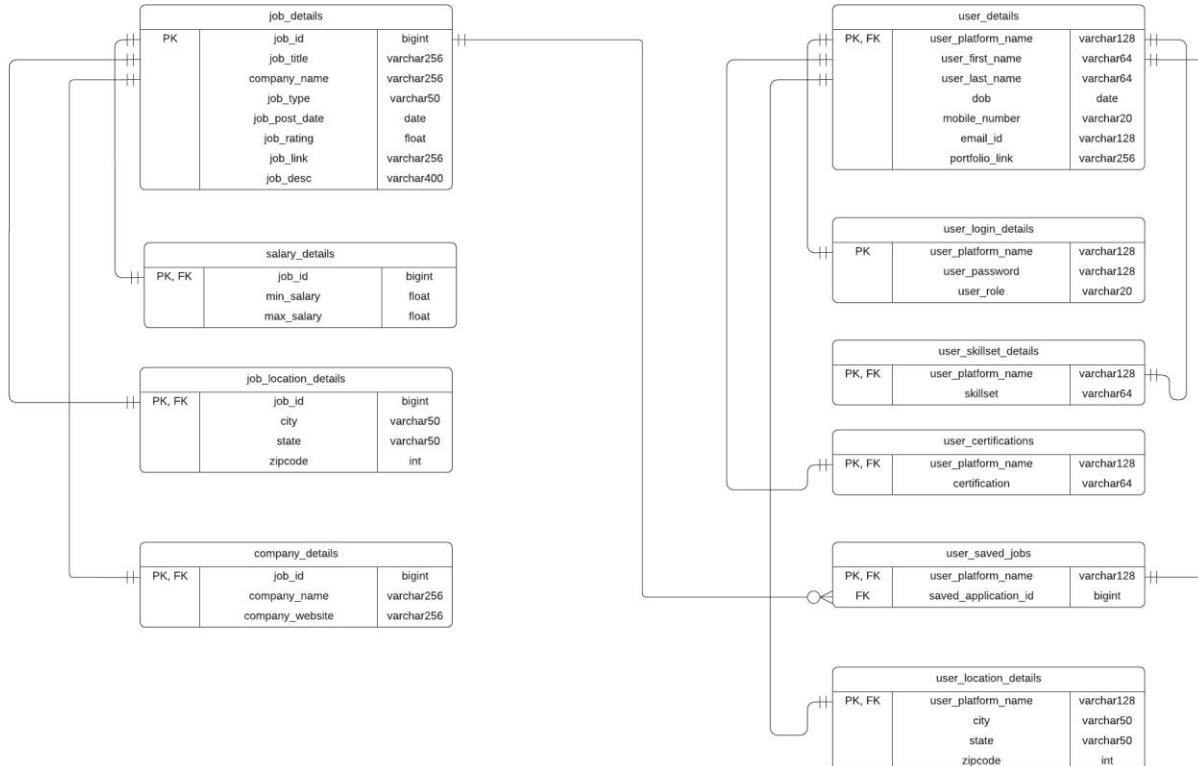


Fig 24: Final Normalized Schema

Out[107]:								
	job_id	job_title	company_name	job_type	job_post_date	job_rating	job_link	job_desc
0	1	Intermediate Software Developer	Cornell Pump Company	Full-time	2022-11-14	4.3	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	The successful candidate will join a well-form...
1	2	SQL Server Developer II - Remote	Medical Mutual of Ohio	Full-time	2022-11-14	3.9	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	Experience with multiple hardware and software...
2	3	Senior Sitecore Developer	Arrow Electronics, Inc.	Full-time	2022-11-14	3.5	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	Experience working on a cloud computing platfo...
3	4	Full Stack Software Engineer Lead/Advisor - Cl...	Fannie Mae	Full-time	2022-11-14	4.0	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	Must be a full-stack developer and understand ...
click to expand output; double click to hide output								
4	5	Intermediate Software Developer	Cornell Pump Company	Full-time	2022-11-14	4.3	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	The successful candidate will join a well-form...
...	...	...	...	...	...	...	...	...
1435	1436	Software Engineer (Front End)	Amplify Education, Inc.	Full-time	2022-12-08	4.0	<a href="https://www.indeed.com/rc/clk?jk=bcfbf1fa1f670...">https://www.indeed.com/rc/clk?jk=bcfbf1fa1f670...</a>	Salary is only one component of the Amplify To...
1436	1437	Software Engineer (Remote USA Only)	Experian	Full-time	2022-12-03	3.6	<a href="https://www.indeed.com/rc/clk?jk=2d1bcfa75519d...">https://www.indeed.com/rc/clk?jk=2d1bcfa75519d...</a>	In addition to a competitive base salary and v...
1437	1438	Graduate Software Engineer	Wise	Full-time	2022-12-12	4.1	<a href="https://www.indeed.com/rc/clk?jk=ab60705252c60...">https://www.indeed.com/rc/clk?jk=ab60705252c60...</a>	At Wise you'll work on challenging technical p...
1438	1439	2023 University Graduate - Software Developmen...	Adobe	Full-time	2022-12-10	4.3	<a href="https://www.indeed.com/rc/clk?jk=5d518aae2b7c...">https://www.indeed.com/rc/clk?jk=5d518aae2b7c...</a>	Adobe is seeking talented and passionate Softw...

**Fig 25: Final Table**

## View for all the Use-cases:

- **Maheswara Sai Ram Palakurthy:**

1. `con.execute ("create view web_cum_database_roles as select j.job_title, j.job_link, j.company_name, l.city || ',' || l.state || ',' || l.zipcode as location, j.job_rating from job_details j inner join job_location_details l on j.job_id = l.job_id where j.job_title LIKE '%Database%' or j.job_title LIKE '%Web%' order by j.job_rating desc;")`

`q1 = ("Select * from web_cum_database_roles")`

	job_title	job_link	company_name	location	job_rating
0	Web Developer	https://www.indeed.com/company/Emonics/jobs/We...	Emonics LLC	New, York, NY	4.6
1	Web Developer	https://www.indeed.com/company/Emonics/jobs/We...	Emonics LLC	San, Antonio, TX	4.6
2	Web Developer	https://www.indeed.com/company/Emonics/jobs/We...	Emonics LLC	Cambridge, MA, 2139	4.6
3	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Providence, RI, 2903	3.7
4	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Merrimack, NH, 3054	3.7
5	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Richland, WA, 99354	3.7
6	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Boston, MA, 2108	3.7
7	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Beverly, MA, 1915	3.7
8	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Little, Rock, AR	3.7
9	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Durham, NC, 27709	3.7
10	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	remote, Mansfield, MA 2048	3.7
11	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	remote, Boston, MA 2110	3.7

**Use Case:** Displaying the details of the job profiles for Database or Wed job title.

**Description:** User can view the job profile details for Database or Wed job title.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job titles with web developer and Web related job titles are displayed to User.

Alternate Path: There are no jobs postings for the given job title.

Error: No history of jobs available.

2. con.execute (create view onsite\_jobs as select j.job\_title, j.job\_link, j.company\_name,l.city || ',' || l.state || ',' || l.zipcode as location, j.job\_type from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id where j.job\_type <> 'Remote' and l.city NOT LIKE '%remote%' ;")

```
q1 = ("Select * from onsite_jobs")
```

	job_title	job_link	company_name	location	job_type
0	Intermediate Software Developer	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Cornell Pump Company	Clackamas, OR, 97015	Full-time
1	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	Full-time
2	Senior Sitecore Developer	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Arrow Electronics, Inc.	Florence, SC, 29501	Full-time
3	Full Stack Software Engineer Lead/Advisor - Cl...	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Fannie Mae	Washgton, DC, 20022	Full-time
4	Intermediate Software Developer	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Cornell Pump Company	Clackamas, OR, 97015	Full-time
...	...	...	...	...	...
1353	Associate Software Engineer - Remote	https://www.indeed.com/rc/clk?jk=bc1094c931645...	UnitedHealth Group	West, Greenwich, RI 2817	Full-time
1354	Software Engineer (Front End)	https://www.indeed.com/rc/clk?jk=bcbfa1fa1f670...	Amplify Education, Inc.	Boston, MA, 2110	Full-time
1355	Software Engineer (Remote USA Only)	https://www.indeed.com/rc/clk?jk=2d1bcfaf75519d...	Experian	Providence, RI, 2903	Full-time
1356	2023 University Graduate - Software Developmen...	https://www.indeed.com/rc/clk?jk=5d518aaade2b7c...	Adobe	Boston, MA, 2116	Full-time
1357	Software Engineer (Remote Work Options)	https://www.indeed.com/rc/clk?jk=fdfd4880ee0af...	Shelter Insurance	Hartford, CT, 6152	Full-time\n+1

1358 rows × 5 columns

**Use Case:** List the companies that offer remote job type.

**Description:** User gets the list of companies that offer remote job types.

**Actor:** User

**Precondition:** Companies must be present in that gives remote job types.

**Steps:**

**Actor action:** View the companies that offer remote job types.

**System Responses:** Gives the list of companies that offer remote job types.

Alternate Path: No companies are present with given condition.

Error: No jobs available now.

3. con.execute (create view paid\_internship\_roles as select j.job\_title, j.job\_link, j.company\_name, j.job\_type , s.min\_salary as salary from job\_details j inner join salary\_details s on j.job\_id = s.job\_id where j.job\_type LIKE '%Internship%' or j.job\_title LIKE '%Paid%';")

```
q1 = ("Select * from paid_internship_roles")
```

Out[66]:

	job_title	job_link	company_name	location	job_type
0	Intermediate Software Developer	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Cornell Pump Company	Clackamas, OR, 97015	Full-time
1	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	Full-time
2	Senior Sitecore Developer	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Arrow Electronics, Inc.	Florence, SC, 29501	Full-time
3	Full Stack Software Engineer Lead/Advisor - Cl...	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Fannie Mae	Washgton, DC, 20022	Full-time
4	Intermediate Software Developer	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Cornell Pump Company	Clackamas, OR, 97015	Full-time
...	...	...	...	...	...
1353	Associate Software Engineer - Remote	https://www.indeed.com/rc/clk?jk=bc1094c931645...	UnitedHealth Group	West, Greenwich, RI 2817	Full-time
1354	Software Engineer (Front End)	https://www.indeed.com/rc/clk?jk=bcbfa1fa1f670...	Amplify Education, Inc.	Boston, MA, 2110	Full-time
1355	Software Engineer (Remote USA Only)	https://www.indeed.com/rc/clk?jk=2d1bcacf75519d...	Experian	Providence, RI, 2903	Full-time
1356	2023 University Graduate - Software Developmen...	https://www.indeed.com/rc/clk?jk=5d518aae2b7c...	Adobe	Boston, MA, 2116	Full-time
1357	Software Engineer (Remote Work Options)	https://www.indeed.com/rc/clk?jk=fdf4880ee0af...	Shelter Insurance	Hartford, CT, 6152	Full-time\n+1

1358 rows × 5 columns

**Use Case:** List the jobs that offer paid internship.

**Description:** User views the internships that are paid.

**Actor:** User

**Precondition:** Database must have the data for the above conditions.

**Steps:**

**Actor action:** User views all the internships that are paid.

**System Responses:** Lists the internships that are paid.

Alternate Path: There are no jobs available.

Error: No history of jobs available.

4. con.execute (create view python\_database\_roles as select j.job\_title, j.job\_link, j.company\_name, l.city || ',' || l.state || ',' || l.zipcode as location, j.job\_rating from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id where j.job\_title LIKE '%SQL%' or j.job\_title LIKE '%Python%' or j.job\_title LIKE '%Database%';")

```
q1 = ("Select * from python_database_roles")
```

	job_title	job_link	company_name	location	job_rating
0	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
1	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
2	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
3	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
4	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
5	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
6	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
7	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
8	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
9	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
10	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
11	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
12	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9
13	SQL Server Developer II - Remote	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Medical Mutual of Ohio	Brooklyn, OH, 44144	3.9

**Use Case:** Displaying the details of the job profiles for SQL, Python or Database job title.

**Description:** User can view the job profile details for SQL, Python or Database job title.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job titles with SQL, Python or Database job titles are displayed to User.

Alternate Path: There are no jobs postings for the given job title.

Error: No history of jobs available.

```
5. con.execute ( create view software_roles_locationwise_sal_avg as
select l.city || ', ' || l.state || ', ' || l.zipcode as location,
avg(s.min_salary) as salary from job_details j inner join
salary_details s on j.job_id = s.job_id inner join job_location_details
l on j.job_id = l.job_id where j.job_desc LIKE '%Software%' group by
location order by salary desc limit 100;")
```

```
q1 = ("Select * from software_roles_locationwise_sal_avg")
```

---

Out[75]:

	location	salary
0	WestGreenwich, RI, 2817	130000.000000
1	remote, Boston, MA	102836.355570
2	New, York, NY 10011 (Flatiron area)	101000.000000
3	SouthParis, ME, 4281	97090.888926
4	Andover, MA, 1810	96900.000000
5	Marlborough, MA, 1752	90000.000000
6	San, Francisco, CA	87139.333333
7	LakeOrion, MI, 48362	86923.611158
8	Brooklyn, OH, 44144	82200.000000
9	Boston, MA, 2116	81772.290604
10	remote, Boston, MA 2110	80809.395078
11	Providence, RI, 2903	80666.119670
12	GrandIsland, NE, 68801	80636.333389
13	Hudson, NH, 3051	79800.000000
14	Denver CO 80207	79427.033356

**Use Case:** Displaying the details of the job profiles with job description as software and group by location.

**Description:** User can view the job profile with job description as software and group by location.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job with location and salary.

Alternate Path: There are no jobs postings for the given condition.

Error: No history of jobs available.

6. con.execute (create view front\_end\_roles as select j.job\_title, j.job\_link, j.company\_name, l.city || ',' || l.state || ',' || l.zipcode as location, j.job\_rating, s.min\_salary as salary from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id inner join

```
salary_details s on j.job_id = s.job_id where j.job_title LIKE '%Web%' or j.job_title LIKE '% UI%' or j.job_title LIKE '%Front%';")
```

```
q1 = ("Select * from front_end_roles")
```

	job_title	job_link	company_name	location	job_rating	salary
0	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Providence, RI, 2903	3.7	39300.0
1	Frontend React/JS Internship, Vehicle Software...	https://www.indeed.com/rc/clk?jk=ba32cb615094f...	Tesla	Little, Rock, AR	3.4	72500.0
2	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Merrimack, NH, 3054	3.7	39300.0
3	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Richland, WA, 99354	3.7	39300.0
4	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Boston, MA, 2108	3.7	39300.0
5	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Beverly, MA, 1915	3.7	39300.0
6	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Little, Rock, AR	3.7	39300.0
7	Frontend React/JS Internship, Vehicle Software...	https://www.indeed.com/rc/clk?jk=ba32cb615094f...	Tesla	New, York, NY	3.4	72500.0
8	Frontend React/JS Internship, Vehicle Software...	https://www.indeed.com/rc/clk?jk=ba32cb615094f...	Tesla	San, Francisco, CA 94134	3.4	72500.0
9	Front End Web Specialist Intern	https://www.indeed.com/rc/clk?jk=0d3aea0c0dbdf...	PTC Inc.	Durham, NC, 27709	3.7	39300.0
10	Frontend React/JS Internship, Vehicle Software...	https://www.indeed.com/rc/clk?jk=ba32cb615094f...	Tesla	Grand, Island, NE 68801	3.4	72500.0

**Use Case:** Displaying the details of the job profiles for Wed, UI or Front-end job roles.

**Description:** User can view the job profile details for Wed, UI or Front-end job roles.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job titles with Wed, UI or Front end job titles are displayed to User.

**Alternate Path:** There are no jobs postings for the given job title.

**Error:** No history of jobs available.

7. con.execute (create view experienced\_developer\_roles as select j.job\_title, avg(s.min\_salary ) as salary from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id inner join salary\_details s on j.job\_id = s.job\_id where j.job\_title LIKE '%Senior%' and

```
(j.job_desc LIKE '%Software%' or j.job_desc LIKE '%Developer%') group by j.job_title order by salary desc;")
```

```
q1 = ("Select * from experienced_developer_roles")
```

Out[77]:	job_title	salary
0	Senior Full Stack Developer	120000.0
1	Senior Sitecore Developer	86500.0
2	Senior Java Developer	49453.0
3	Senior Software Engineer, Full Stack (Remote-E...	1.0

**Use Case:** Displaying the details of the job profiles for Senior, software developer.

**Description:** User can view the job profile details for Senior, software developer.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job titles with Senior, software developer job titles are displayed to User.

Alternate Path: There are no jobs postings for the given job title.

Error: No history of jobs available.

- **Namitha J C**

1. con.execute (create view high\_salary\_roles as select j.job\_title, j.job\_link, j.company\_name, s.min\_salary as salary from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id inner join salary\_details s on j.job\_id = s.job\_id order by salary desc;")

```
q1 = ("Select * from high_salary_roles")
```

Out[78]:

	job_title	job_link	company_name	salary
0	Full Stack Engineer	https://www.indeed.com/company/Delta/jobs/Full...	Delta	150000.0
1	Scientific Product Manager	https://www.indeed.com/rc/clk?jk=b68e621261a25...	Novartis	144000.0
2	Controller HVAC / Private Equity	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Perfect Home Services	140000.0
3	Controller HVAC / Private Equity	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Perfect Home Services	140000.0
4	Controller HVAC / Private Equity	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Perfect Home Services	140000.0
...	...	...	...	...
1435	Due Diligence Analyst	https://www.indeed.com/company/Phoenix/jobs/Du...	PHOENIX	0.0
1436	Due Diligence Analyst	https://www.indeed.com/company/Phoenix/jobs/Du...	PHOENIX	0.0
1437	Due Diligence Analyst	https://www.indeed.com/company/Phoenix/jobs/Du...	PHOENIX	0.0
1438	Software Developer Co-Op	https://www.indeed.com/rc/clk?jk=a27f7ca274631... Carrier Klimatechnik GmbH	Carrier Klimatechnik GmbH	0.0
1439	Software Developer Co-Op	https://www.indeed.com/rc/clk?jk=a27f7ca274631... Carrier Klimatechnik GmbH	Carrier Klimatechnik GmbH	0.0

1440 rows × 4 columns

**Use Case:** Displaying the details of the job profiles based on salary.

**Description:** User can view the job profile details based on salary.

**Actor:** User

**Precondition:** Salary details must be present in the database.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job with the given condition is displayed.

Alternate Path: There are no jobs postings with the given conditions.

Error: No history of jobs available.

2. con.execute (create view operations\_manager\_roles as select j.job\_title, j.job\_link, j.company\_name, l.city || ', ' || l.state || ', ' || l.zipcode as location from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id where j.job\_title LIKE '%Operations%' or j.job\_title LIKE '%Operations Manager%';")

q1 = ("Select \* from operations\_manager\_roles")

	job_title	job_link	company_name	location
0	Jr. Operations Analyst (Remote)	<a href="https://www.indeed.com/rc/clk?jk=a52aae3106a0a...">https://www.indeed.com/rc/clk?jk=a52aae3106a0a...</a>	Bright Horizons Family Solutions	Denver, CO, 80207
1	Operations Manager	<a href="https://www.indeed.com/company/Yellow/jobs/Ope...">https://www.indeed.com/company/Yellow/jobs/Ope...</a>	New Penn Motor Express	North, Billerica, MA 01862
2	Onshore AT Operations/RPAS Manager	<a href="https://www.indeed.com/rc/clk?jk=2329758e46947...">https://www.indeed.com/rc/clk?jk=2329758e46947...</a>	Shell	New, Orleans, LA
3	Operations Supervisor	<a href="https://www.indeed.com/rc/clk?jk=adc2233c4f840...">https://www.indeed.com/rc/clk?jk=adc2233c4f840...</a>	Tradebe Environmental Services	Stoughton, MA, 2072
4	Transport Operations Manager	<a href="https://www.indeed.com/rc/clk?jk=1ca566f725385...">https://www.indeed.com/rc/clk?jk=1ca566f725385...</a>	Marathon Petroleum Company LP	Salt, Lake, City UT 84104 (Glendale area)
5	Inside Sales Operations Manager	<a href="https://www.indeed.com/rc/clk?jk=1776b666cb193...">https://www.indeed.com/rc/clk?jk=1776b666cb193...</a>	Dynisco Instruments LLC	Frankl, MA, 2038
6	Operations Manager - Oil & Gas	<a href="https://www.indeed.com/rc/clk?jk=f163089304af8...">https://www.indeed.com/rc/clk?jk=f163089304af8...</a>	West Penn Energy Services	Shelocta, PA, 15774
7	Manager, Operations	<a href="https://www.indeed.com/rc/clk?jk=25325f4115607...">https://www.indeed.com/rc/clk?jk=25325f4115607...</a>	Colonial Pipeline Company	Greensboro, NC, 27409
8	Operations Manager	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	Hampel Oil Distributors, Inc.	Monahans, TX, 79756
9	Regional Operations Manager - Field Service (R...	<a href="https://www.indeed.com/rc/clk?jk=ca0d0c817ceb6...">https://www.indeed.com/rc/clk?jk=ca0d0c817ceb6...</a>	Delta Star Inc	Lynchburg, VA, 24501
10	Operations Manager	<a href="https://www.indeed.com/rc/clk?jk=976fc9e04fce9...">https://www.indeed.com/rc/clk?jk=976fc9e04fce9...</a>	Stallion Oilfield Services	Washgton, PA, 15301
11	Operations Manager	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	Hampel Oil Distributors, Inc.	Monahans, TX, 79756
12	Operations Manager	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	Hampel Oil Distributors, Inc.	Monahans, TX, 79756
13	Operations Manager	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	Hampel Oil Distributors, Inc.	Monahans, TX, 79756
14	Operations Manager	<a href="https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...">https://www.indeed.com/pagead/clk?mo=r&amp;ad=6NY...</a>	Hampel Oil Distributors, Inc.	Monahans, TX, 79756

**Use Case:** Displaying the details of the job profiles for operations manager.

**Description:** User can view the job profile details for operations manager.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job titles with operations manager job titles are displayed to User.

**Alternate Path:** There are no jobs postings for the given job title.

**Error:** No history of jobs available.

3. con.execute (create view product\_manager\_roles as select j.job\_title, j.job\_link, j.company\_name, l.city || ',' || l.state || ',' || l.zipcode as location, s.min\_salary as salary from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id inner join salary\_details s on j.job\_id = s.job\_id where j.job\_title LIKE '%Product Manager%' or j.job\_desc LIKE '%MNC%' ;")

```
q1 = ("Select * from product_manager_roles")
```

Out[82]:

	job_title	job_link	company_name	location	salary
0	Scientific Product Manager	https://www.indeed.com/rc/clk?jk=b68e621261a25...	Novartis	GrandIsland, NE, 68801	144000.000000
1	Product Manager	https://www.indeed.com/pagead/clk?mo=&ad=6NY...	Recruitics	LakeOrion, MI, 48362	64181.777852
2	Product Manager	https://www.indeed.com/rc/clk?jk=70724e01b04c8...	Rekor Systems Inc	Boston, MA, 2116	64181.777852
3	Product Manager	https://www.indeed.com/rc/clk?jk=dd97cbe0cf175...	Maven Clinic	LakeOrion, MI, 48362	110000.000000
4	Senior Technical Product Manager	https://www.indeed.com/pagead/clk?mo=&ad=6NY...	SimplePart	Denver, CO, 80207	130000.000000
5	Product Manager	https://www.indeed.com/pagead/clk?mo=&ad=6NY...	Recruitics	GrandIsland, NE, 68801	64181.777852
6	Product Manager	https://www.indeed.com/pagead/clk?mo=&ad=6NY...	Fidelity TalentSource	GrandIsland, NE, 68801	1.000000
7	Junior Product Manager	https://www.indeed.com/rc/clk?jk=7ae8dc6347a0a...	YouMail	WestGreenwich, RI, 2817	1.000000
8	Senior Technical Product Manager	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	SimplePart	SouthParis, ME, 4281	130000.000000
9	Product Manager	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	Recruitics	SouthParis, ME, 4281	64181.777852
10	Senior Technical Product Manager	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	SimplePart	Boston, MA, 2110	130000.000000
11	Product Manager	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	Recruitics	LakeOrion, MI, 48362	64181.777852

**Use Case:** Displaying the details of the job profiles with job description MNC and job role of Product manager.

**Description:** User can view the job profile with job description MNC and job role of Product manager.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job with job description MNC and job role of Product manager are displayed.

**Alternate Path:** There are no jobs postings for the given condition.

**Error:** No history of jobs available.

4. con.execute (create view finance\_and\_analyst\_roles as select j.job\_title, j.job\_link, j.company\_name, l.city || ',' || l.state || ',' || l.zipcode as location from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id where j.job\_title LIKE '%Auditor%' or j.job\_title LIKE '%Account%' or j.job\_desc LIKE '%finance%';'")

```
q1 = ("Select * from finance_and_analyst_roles")
```

	job_title	job_link	company_name	location
0	Finance/Accounting/Any Major Graduates - Assoc...	https://www.indeed.com/rc/clk?jk=b5f6c87e778c6...	State Street	SouthParis, ME, 4281
1	Jr. Operations Analyst (Remote)	https://www.indeed.com/rc/clk?jk=a52aae3106a0a...	Bright Horizons Family Solutions	Denver, CO, 80207
2	Cost Accountant (on-site)	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	API Heat Transfer	SanFrancisco, CA, 94134
3	Staff Accountant - New England - Part-Time	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Your Part-Time Controller, LLC	SouthParis, ME, 4281
4	Accounting and Finance	https://www.indeed.com/company/Greentree-Capit...	Greentree Capital	GrandIsland, NE, 68801
...	...	...	...	...
154	Accountant	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Rockwater Associates	Boston, MA, 2116
155	Senior Cost Accountant	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	OmniMax International, LLC	Boston, MA, 2110
156	Accountant I - Hybrid	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	Sun Chemical Corporation	Chubbuck, ID, 83202
157	Investment Accounting Associate I (Hybrid)	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	MassMutual	SanFrancisco, CA, 94134
158	SECURITY ACCOUNT MANAGER/CANTON	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	American Security Associates Inc.	SouthParis, ME, 4281

159 rows × 4 columns

**Use Case:** Displaying the details of the job profiles with job description finance and job role of Auditor.

**Description:** User can view the job profile with job description finance and job role of Auditor.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job with job description finance and job role of Auditor are displayed.

Alternate Path: There are no jobs postings for the given condition.

Error: No history of jobs available.

5. con.execute ( create view java\_roles as select j.job\_title, j.job\_link, j.company\_name, j.job\_rating, l.city || ',' || l.state || ',' || l.zipcode as location, s.min\_salary as salary from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id inner join salary\_details s on j.job\_id = s.job\_id where j.job\_title LIKE '%Java %' order by j.job\_rating desc;" )

```
q1 = ("Select * from java_roles")
```

	job_title	job_link	company_name	job_rating	location	salary
0	Java Developer	https://www.indeed.com/company/APLOMB-Technolo...	APLOMB Technologies	4.5	Boston, MA, 2116	45.000000
1	Senior Java Developer	https://www.indeed.com/company/MARS-Group/jobs...	MARS Group	4.0	Denver, CO, 80207	30.000000
2	Java Developer	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	Deloitte	3.9	GrandIsland, NE, 68801	64181.777852
3	Java Developer	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	Deloitte	3.9	Hartford, CT, 6105	64181.777852
4	Java Developer	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	Deloitte	3.9	SouthParis, ME, 4281	64181.777852
...	...	...	...	...	...	...
80	Mid-Level Java Developer (with training)	https://www.indeed.com/company/GenSpark/jobs/M...	GenSpark	2.8	Boston, MA, 2108	65000.000000
81	Mid-Level Java Developer (with training)	https://www.indeed.com/company/GenSpark/jobs/M...	GenSpark	2.8	Beverly, MA, 1915	65000.000000
82	Jr. Java Developer	https://www.indeed.com/company/GenSpark/jobs/J...	Genspark	2.8	Little, Rock, AR	60000.000000
83	Mid-Level Java Developer (with training)	https://www.indeed.com/company/GenSpark/jobs/M...	GenSpark	2.8	remote, Washgton, DC 20036	65000.000000
84	Java Developer (spring MVC)	https://www.indeed.com/company/Horizontal/jobs...	Horizontal Talent	2.7	Hartford, CT, 6105	70.000000

85 rows x 6 columns

**Use Case:** Displaying the details of the job profiles with job title java with desc order of rating.

**Description:** User can view the job profile with job title java with desc order of rating.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job with job title java with desc order of rating are displayed.

Alternate Path: There are no jobs postings for the given condition.

Error: No history of jobs available.

6. con.execute ( create view summer\_internships as select c.company\_name, c.company\_website, j.job\_title, j.job\_link, j.job\_rating from job\_details j inner join company\_details c on j.job\_id = c.job\_id where j.job\_title LIKE '%Summer%' or j.job\_title LIKE '%Internship%';")

```
q1 = ("Select * from summer_internships")
```

	company_name	company_website	job_title	job_link	job_rating
0	Veeder Root	https://www.indeed.com/cmp/Vontier	Software Engineering Intern (Summer 2023)	https://www.indeed.com/rc/clk?jk=1ce707c3b8e9b...	3.0
1	Veeder Root	https://www.indeed.com/cmp/Vontier	Software Engineering Intern (Summer 2023)	https://www.indeed.com/rc/clk?jk=1ce707c3b8e9b...	3.0
2	Electronic Arts	https://www.indeed.com/cmp/Electronic-Arts	Software Engineer Intern (Summer 2023)	https://www.indeed.com/rc/clk?jk=d1d32b55c9e5a...	3.8
3	Netflix	https://www.indeed.com/cmp/Netflix	Software Engineer Intern (Summer 2023)	https://www.indeed.com/rc/clk?jk=584eccecf063...	3.9
4	Tesla	https://www.indeed.com/cmp/Tesla	Frontend React/JS Internship, Vehicle Software...	https://www.indeed.com/rc/clk?jk=ba32cb615094f...	3.4
5	Veeder Root	https://www.indeed.com/cmp/Vontier	Software Engineering Intern (Summer 2023)	https://www.indeed.com/rc/clk?jk=1ce707c3b8e9b...	3.0
6	MSA Safety	https://www.indeed.com/cmp/Msa-Safety	Connected Firefighter Product	https://www.indeed.com/pagead/clk?	3.7

**Use Case:** List the jobs that offer summer internship.

**Description:** User views the summer internship list.

**Actor:** User

**Precondition:** Database must have the data for the above conditions.

**Steps:**

**Actor action:** User views all the internships that are in summer.

**System Responses:** Lists the internships that are during summer.

Alternate Path: There are no internships available.

Error: No history of jobs available.

7. con.execute (create view part\_time\_roles as select j.job\_title, j.job\_link, c.company\_name, c.company\_website, j.job\_rating, l.city || ',' || l.state || ',' || l.zipcode as location from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id inner join company\_details c on j.job\_id = c.job\_id where j.job\_type LIKE 'Part-time' order by j.job\_rating desc;")

```
q1 = ("Select * from part_time_roles")
```

	job_title	job_link	company_name	company_website	job_rating	location
0	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	Denver, CO, 80207
1	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	South, Paris, ME 4281
2	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	Lake, Orion, MI 48362
3	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	Lake, Orion, MI 48362
4	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	San, Francisco, CA
5	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	South, Paris, ME 4281
6	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	Boston, MA, 2110
7	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	Denver, CO, 80207
8	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	Lake, Orion, MI 48362
9	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	South, Paris, ME 4281
10	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	Providence, RI, 2903
11	Part-Time Compliance and Contract Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=6NY...	foodguys	https://www.indeed.com/cmp/Foodguys	3.2	Boston, MA, 2116

**Use Case:** List the jobs that are part-time.

**Description:** User views the part-time jobs.

**Actor:** User

**Precondition:** Database must have the data for the above conditions.

**Steps:**

**Actor action:** User views all the part-time jobs.

**System Responses:** Lists the part-time jobs.

Alternate Path: There are no jobs available.

Error: No history of jobs available.

- **Sinchana Kumara**

1. con.execute (create view accounting\_and\_finance\_roles as select j.job\_title, j.job\_link, c.company\_name, c.company\_website, l.city || ',' || l.state || ',' || l.zipcode as location from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id inner join company\_details c on j.job\_id = c.job\_id where j.job\_title LIKE '%advisor%' or j.job\_title LIKE '%Finance%' order by j.job\_rating desc;"")

```
q1 = ("Select * from accounting_and_finance_roles")
```

0	Accounting and Finance	<a href="https://www.indeed.com/company/Greentree-Capital...">https://www.indeed.com/company/Greentree-Capital...</a>	Greentree Capital	<a href="https://www.indeed.com/cmp/Greentree-Capital">https://www.indeed.com/cmp/Greentree-Capital</a>	Grandisland, NE, 68801
1	Accounting & Finance Rotation Program Analyst,...	<a href="https://www.indeed.com/rc/clk?jk=5cebfabb19282...">https://www.indeed.com/rc/clk?jk=5cebfabb19282...</a>	The Walt Disney Company (Corporate)	<a href="https://www.indeed.com/cmp/The-Walt-Disney-Com...">https://www.indeed.com/cmp/The-Walt-Disney-Com...</a>	Grandisland, NE, 68801
2	Accounting & Finance Rotation Program Analyst,...	<a href="https://www.indeed.com/rc/clk?jk=5cebfabb19282...">https://www.indeed.com/rc/clk?jk=5cebfabb19282...</a>	The Walt Disney Company (Corporate)	<a href="https://www.indeed.com/cmp/The-Walt-Disney-Com...">https://www.indeed.com/cmp/The-Walt-Disney-Com...</a>	Boston, MA, 2110

**Use Case:** Displaying the details of the job profiles with job role finance and advisor.

**Description:** User can view the job profile with job role finance and advisor.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job with job role finance and advisor are displayed.

Alternate Path: There are no jobs postings for the given condition.

Error: No history of jobs available.

```
2. con.execute (create view planning_roles as select j.job_title,
j.job_link, j.company_name, j.job_rating, l.city || ',' || l.state || ',' ||
l.zipcode as location, s.min_salary from job_details j inner join
job_location_details l on j.job_id = l.job_id inner join salary_details
s on j.job_id = s.job_id where j.job_title LIKE '%Planning%' order
by j.job_title desc;")
```

```
q1 = ("Select * from planning_roles")
```

	job_title	job_link	company_name	job_rating	location	min_salary
0	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	San, Francisco, CA 94134	71147.0
1	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	San, Francisco, CA 94134	71147.0
2	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	Fort, Meade, MD	71147.0
3	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	Boston, MA, 2116	71147.0
4	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	West, Greenwich, RI 2817	71147.0
5	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	Denver, CO, 80207	71147.0
6	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	San, Francisco, CA 94134	71147.0
7	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	New, York, NY	71147.0
8	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	Chubbuck, ID, 83202	71147.0
9	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	Grand, Island, NE 68801	71147.0
10	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	South, Paris, ME 4281	71147.0
11	Planning Analyst (Hybrid)	https://www.indeed.com/pageadclk?mo=r&ad=6NY...	State of Connecticut - Department of Social...	3.9	Chubbuck, ID, 83202	71147.0

**Use Case:** Displaying the details of the job profiles for planning job title.

**Description:** User can view the job profile details for planning job title.

**Actor:** User

**Precondition:** Jobs title must contain details about the job profiles.

**Steps:**

**Actor action:** View job profile details for the given conditions.

**System Responses:** The list of Job titles with planning job title are displayed to User.

Alternate Path: There are no jobs postings for the given job title.

Error: No history of jobs available.

3. con.execute ( create view hiltons\_saved\_jobs\_list as select j.job\_title, j.job\_link, j.company\_name, l.city || ',' || l.state || ',' || l.zipcode as location, j.job\_rating, s.min\_salary as salary from job\_details j inner join job\_location\_details l on j.job\_id = l.job\_id inner join salary\_details s on j.job\_id = s.job\_id where j.job\_id in (select saved\_application\_id from user\_saved\_jobs where user\_platform\_name = '@Hilton');")

```
q1 = ("Select * from hiltons_saved_jobs_list")
```

```
1440 rows x 4 columns

In [110]: con = sqlite3.connect('JobsFinalDatabase.db')
con.execute (
    '''create view hiltons_saved_jobs_list as select j.job_title, j.job_link, j.company_name, l.city || ', ' || l.state ||
    q1 = (''Select * from hiltons_saved_jobs_list'')
r3 = pd.read_sql(q1, con)
r3.head(1)
#print(r1)
r3
```

	job_title	job_link	company_name	location	job_rating	salary
0	Intermediate Software Developer https://www.indeed.com/pageadclk?mo=r&ad=-6NY...	Cornell Pump Company	Clackamas, OR, 97015	4.3	82700.0	

**Use Case:** Display the list of jobs that are saved in the user saved applicatins as “@Hilton”.

**Description:** Display data for above given condition.

**Actor:** User

**Precondition:** “@Hilton” should be present in the database.

**Steps:**

**Actor action:** User can view the list of jobs with the given conditions.

**System Responses:** Display all the jobs with the given conditions.

Alternate Path: No data is displayed.

Error: Data unavailable.

4. con.execute ("create view roles\_in\_MA as select c.company\_name, c.company\_website, l.city || ', ' || l.state || ', ' || l.zipcode as location from company\_details c inner join job\_details j on c.job\_id = j.job\_id inner join job\_location\_details l on j.job\_id = l.job\_id where l.state LIKE "%MA%";")

```
q1 = ("Select * from roles_in_MA")
```

Out[111]:

	company_name	company_website	location
0	Hewlett Packard Enterprise	https://www.indeed.com/cmp/Hewlett-Packard-Ent...	Andover, MA, 1810
1	Perfect Home Services	https://www.indeed.com/cmp/Perfect-Home-Services	Boston, MA, 2109
2	Rockwater Associates	https://www.indeed.com/cmp/Rockwater-Associates	Boston, MA, 2109
3	Point-of-Rental Software	https://www.indeed.com/cmp/Point-of-Rental-Sof...	Boston, MA, 2116
4	API Heat Transfer	https://www.indeed.com/cmp/API-Heat-Transfer	Boston, MA, 2116
...	...	...	...
270	Amplify Education, Inc.	https://www.indeed.com/cmp/Amplify-Education,-...	Boston, MA, 2109
271	Home Depot / THD	https://www.indeed.com/cmp/The-Home-Depot	remote, Mansfield, MA 2048
272	Arkansas Children's Hospital	https://www.indeed.com/cmp/Arkansas-Children's...	Boston, MA, 2109
273	Amplify Education, Inc.	https://www.indeed.com/cmp/Amplify-Education,-...	Boston, MA, 2110
274	Adobe	https://www.indeed.com/cmp/Adobe	Boston, MA, 2116

**Use Case:** List the companies that offer employment in MA state.

**Description:** User gets the list of companies that offer employment in MA state.

**Actor:** User

**Precondition:** Companies must be present in the given state.

**Steps:**

**Actor action:** View the companies that offer employment in MA state.

**System Responses:** Gives the list of companies that offer employment in MA state.

Alternate Path: No companies are present in the given state.

Error: No jobs available now.

5. con.execute ("create view top\_rated\_fullstack\_jobs as select c.company\_name from company\_details c inner join job\_details j on c.job\_id = j.job\_id where j.job\_title LIKE "%Full Stack%" group by c.company\_name having max(j.job\_rating) > 4;")

```
q1 = ("Select * from top_rated_fullstack_jobs")
```

Out[113]:

	company_name
0	#twiceasnice Recruiting
1	AllSTEM - Jobs
2	Buchanan & Edwards
3	Engtal
4	Neteffects
5	VMware

**Use Case:** Display the company names with average rating greater than 2 and less than 4.

**Description:** User can view the company names with average rating greater than 2 and less than 4.

**Actor:** User

**Precondition:** Companies should have company rating.

**Steps:**

**Actor action:** User can view the company names with average rating greater than 2 and less than 4.

**System Responses:** the company names with average rating greater than 2 and less than 4 are displayed.

Alternate Path: No company names are displayed.

Error: Job ratings data not available.

6. con.execute ("create view last\_month\_jobs\_postings as select j.job\_title, j.job\_link, j.job\_post\_date from job\_details j where j.job\_post\_date >= DATE('now', '-30 day');")

q1 = ("select \* from last\_month\_jobs\_postings")

Out[114]:			
	job_title	job_link	job_post_date
0	Jr. Operations Analyst (Remote)	https://www.indeed.com/rc/clk?jk=a52aae3106a0a...	2022-12-09
1	Cost Accountant (on-site)	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	2022-12-02
2	Staff Accountant - New England - Part-Time	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	2022-12-09
3	Fund Accounting & Administration (Private Equi...	https://www.indeed.com/rc/clk?jk=6124355e92022...	2022-12-14
4	Principle Program Control Analyst	https://www.indeed.com/pagead/clk?mo=r&ad=-6NY...	2022-11-15
...	...	...	...
762	Software Engineer (Front End)	https://www.indeed.com/rc/clk?jk=bcbfa1fa1f670...	2022-12-08
763	Software Engineer (Remote USA Only)	https://www.indeed.com/rc/clk?jk=2d1bcfa75519d...	2022-12-03
764	Graduate Software Engineer	https://www.indeed.com/rc/clk?jk=ab60705252c60...	2022-12-12
765	2023 University Graduate - Software Developmen...	https://www.indeed.com/rc/clk?jk=5d518aade2b7c...	2022-12-10
766	Software Engineer (Remote Work Options)	https://www.indeed.com/rc/clk?jk=fdfd4880ee0af...	2022-11-18

767 rows × 3 columns

**Use Case:** Provide the job listings that was posted 7 days ago.

**Description:** User can view the Job posted 7 days ago.

**Actor:** User

**Precondition:** Jobs postings must contain posted date.

**Steps:**

**Actor action:** View the Job posted 7 days ago.

**System Responses:** Display the list of jobs posted 7 days ago.

Alternate Path: No Jobs are available.

Error: No history of jobs available.

7. con.execute ("create view java\_companies as select j.company\_name from job\_details j where job\_title LIKE "%Java%" UNION Select c.company\_name from company\_details c inner join job\_location\_details l on c.job\_id = l.job\_id where l.city LIKE "%Boston%";")

```
q1 = ("Select * from java_companies")
```

---

Out[115]:

	company_name
0	3M
1	A&A Search Staffing
2	API Heat Transfer
3	APLUMB Technologies
4	Adobe
...	...
83	Vendasta
84	WinnCompanies
85	Wise
86	Your Part-Time Controller, LLC
87	foodguys

88 rows × 1 columns

**Use Case:** List the company name that offer jobs in location Boston.

**Description:** Displays the company names for the given conditions.

**Actor:** User

**Precondition:** Company names must be present.

**Steps:**

**Actor action:** User can view the list of company names that offer jobs in location Boston.

**System Responses:** Display the list of company names for the given conditions.

Alternate Path: No names are displayed

Error: No history of jobs available.