

DMDD Final Project

Jobs Database - Artificial Intelligence

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A MySQL Database for AI/ML/DS Jobs contains scraped data like jobs, company profile, cost of living and tax rates from LinkedIn, Glassdoor, tax rates and cost of living.

Project Features:

- Required skillsets for the job. This was extracted from job description using a pretrained Naive Bayes model.
- Displays current openings along with other details – salary, location, experience and desired skills.
- Workplace reviews from glassdoor.
- Database contains cost of living at different cities along with state tax rates from which the savings and in hand salary can be computed.

Project Execution Stages:

1. Choosing Dataset

Decided to work on jobs database which will showcase current openings in Artificial Intelligence sphere
The database also highlights skills required for the job, estimated salary, company rating, cost of living and tax rate at the job location

2. Twitter bot

Fetched tweets regarding job opportunities using twitter API

Got user data, like count and tags of the tweet from API

Utilized Stanza NLP to fetch company information from the tweet

3. Web Scraping

Scraped jobs from LinkedIn and Glassdoor using Beautiful Soup and Scrapy

Scraped company information like revenue, size, and rating from Glassdoor

Also scraped tax rates and cost of living information about job location

4. Database Creation

Created ER diagram using Crawford Notation

Created Jobs database using MySQL workbench

5. Data cleaning and feature engineering

Utilized pandas, numpy and sklearn to carry out data cleaning

Removed repeating entries

Standardized data scrapped from multiple sites

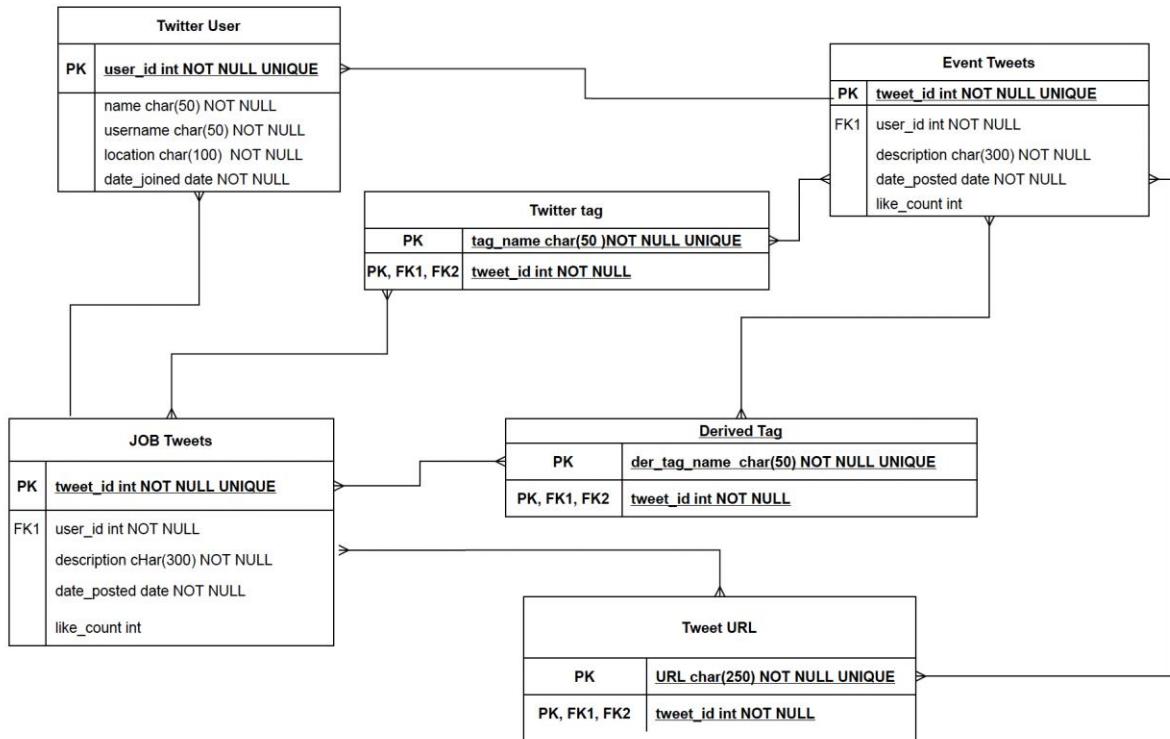
Extracted skills from job description using Naïve Bayes Algorithm

Normalized the data and divided it into multiple dataframes to feed into database

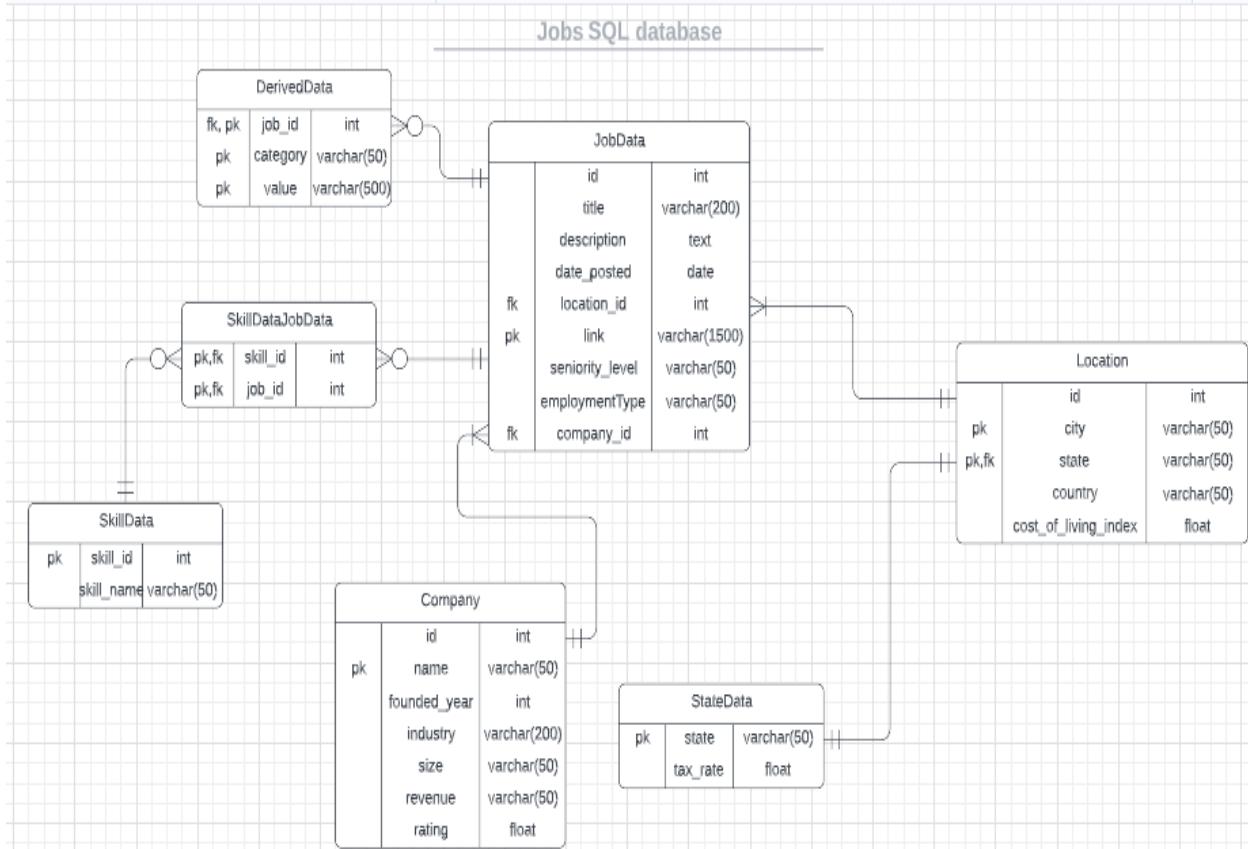
6. Data Loading

Fed the cleaned and normalized data into MySQL database using sqlalchemy

Physical Model for Twitter data:



Physical Model for Glassdoor and LinkedIn data:



40 questions submitted for assignment 1:

1. What is the job salary?
2. What is the tax rate at the job location?
3. What is the cost of living at the job location?
<https://livingcost.org/cost/united-states/>
4. What is the livability index at the job location?
<https://livabilityindex.aarp.org/top-communities>
5. Name of the company offering the job?
6. Job belongs to which department of the company?
7. What is the great place to work ranking of the company?
<https://www.greatplacetowork.com/worlds-best-workplaces>
8. What are the key financial ratios of the company?
9. Does the company sponsor H1B visas?
10. Company belongs to which domain, such as finance, healthcare, e-commerce etc.?
11. What are the available locations of the job?
12. What are the key skills required for the job?
13. Years of experience required for the job?
14. Is it a full time/Part time/Internship/Co-op/contract job?
15. Is it a Remote/Hybrid/on-site workplace?
16. What is the company URL? Like company website, Twitter etc.
17. What is the description of the company?
18. What benefits and rewards are offered by the company? like medical insurance, paid time off etc.
19. When was the job posted?
20. What is the name of the recruiter?
21. What are the fundamental requirements for the company, such as availability? (Immediate or priority hiring or need basis)
22. What are the Glass door reviews for the company?
23. What are the in-demand job positions in the company?
24. How many candidates have applied till now?
25. What are the hours of operation? Whether it is shift-based or only regular Mon-Fri?
26. How many employees are currently working at the company?
27. What are the similar Job positions available in different teams at the company?
28. What are the similar Job Listings present across entire work domain?
29. What certifications are recognized by the company?
30. What is the level of seniority for a position like junior or senior engineer?
31. What is the size of the company in terms of revenue? Also, in case of startup, is it a unicorn? <https://en.wikipedia.org/wiki/> - source

<https://www.census.gov/data/tables/2019/econ/susb/2019-susb-annual.html>- alternate source

32. What is the attrition rate at the company?
33. What are the links or platforms where I can apply for this job?
34. Can I see jobs hiring fresh college graduates without prior experience?
35. Are there any blogs about interview experiences and questions asked for the specified role at this company?
36. Does this job require a lot of travelling?
37. Are there any language requirements for this job like German or Japanese?
38. Does this job require a PHD or Publications?
39. What is the most sought-after skill and high paying?
40. Where are most of the companies hiring for AI/DS/ML located?

Database:

```
DROP DATABASE IF EXISTS `ai_jobs_database`;
```

```
CREATE DATABASE `ai_jobs_database`;
```

```
USE `ai_jobs_database`;
```

```
SET NAMES utf8mb4;
```

```
SET character_set_client = utf8mb4;
```

```
/*
```

Tweet Data Tables

```
*/
```

```
CREATE TABLE `twitter_user` (
  `user_id` bigint NOT NULL,
  `name` varchar(50) NOT NULL,
  `user_name` varchar(50) NOT NULL,
  `location` char(50),
  `date_joined` date NOT NULL,
  PRIMARY KEY (`user_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `job_tweets` (
  `tweet_id` bigint NOT NULL UNIQUE,
  `user_id` bigint NOT NULL,
  `description` varchar(1000) NOT NULL,
  `date_posted` date,
  `like_count` int,
  PRIMARY KEY (`tweet_id`),
  FOREIGN KEY (user_id) REFERENCES twitter_user(user_id)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `tweet_url` (
  `url` varchar(250) NOT NULL UNIQUE,
  `tweet_id` bigint NOT NULL,
  PRIMARY KEY (`url`,`tweet_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `twitter_tag` (
  `tag_name` varchar(50) NOT NULL,
  `tweet_id` bigint NOT NULL,
  PRIMARY KEY (`tag_name`,`tweet_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `event_tweets` (
  `tweet_id` bigint NOT NULL,
  `user_id` bigint NOT NULL,
  `description` varchar(1000) NOT NULL,
  `date_posted` date,
  `like_count` int,
  PRIMARY KEY (`tweet_id`),
  FOREIGN KEY (user_id) REFERENCES twitter_user(user_id)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `derived_tag` (
  `der_tag_name` varchar(50) NOT NULL,
  `tweet_id` BIGINT NOT NULL,
  PRIMARY KEY (`der_tag_name`,`tweet_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
/*
Job Data Tables
*/
```

```
CREATE TABLE `company` (
```

```
`id` bigint NOT NULL AUTO_INCREMENT,  
`name` varchar(100) NOT NULL,  
`founded_year` int,  
`industry` varchar(200),  
`size` varchar(50),  
`revenue` varchar(50),  
`rating` float,  
PRIMARY KEY(`id`)  
);
```

```
CREATE TABLE `state_data` (  
`state` varchar(50) NOT NULL,  
`tax_rate` float,  
PRIMARY KEY(`state`)  
);
```

```
CREATE TABLE `location` (  
`id` bigint NOT NULL UNIQUE AUTO_INCREMENT,  
`city` varchar(50),  
`state` varchar(50) NULL,  
`country` varchar(50),  
`cost_of_living_index` float,  
CONSTRAINT unique_state_city UNIQUE(`city`, `state`),  
PRIMARY KEY(`id`),  
FOREIGN KEY(`state`) REFERENCES state_data(`state`)  
);
```

```
CREATE TABLE `jobData` (  
`id` bigint NOT NULL AUTO_INCREMENT,
```

```

`title` varchar(200),
`description` text,
`date_posted` date,
`location_id` bigint,
`link` varchar(1500),
`seniority_level` varchar(50),
`employmentType` varchar(50),
`company_id` bigint,
PRIMARY KEY(`id`),
FOREIGN KEY (`company_id`) REFERENCES company(`id`),
FOREIGN KEY (`location_id`) REFERENCES location(`id`)
);

```

```

CREATE TABLE `derived_data` (
`job_id` bigint,
`category` varchar(50),
`value` varchar(500),
FOREIGN KEY(`job_id`) REFERENCES jobData(`id`),
PRIMARY KEY(`job_id`, `category`, `value`)
);

```

Use Cases -

1. Select jobs based in Boston

Description: Searching for Jobs in the AI (Artificial Intelligence) domain in the Boston area.

Actor: User

Precondition: Needs to check if Jobs in AI Domain around Boston area are present in our database.

Steps:

Actor action: Search for AI Jobs with City value as Boston and Skills value as AI.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

Select jobs based in Boston

CREATE VIEW jobs_boston AS

```
SELECT title, description, date_posted, link FROM JobData WHERE location_id =  
(SELECT id FROM Location WHERE city='Boston');
```

2. Select jobs based in Massachusetts.

Description: Searching for Jobs in Massachusetts

Actor: User

Precondition: Needs to check if Jobs where state value is Massachusetts are present in our database.

Steps:

Actor action: Search for AI Jobs with state value Massachusetts.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

Select jobs based in Massachusetts

CREATE VIEW jobs_ma **AS**

```
SELECT title, description, date_posted, link FROM JobData WHERE location_id IN  
(SELECT id FROM Location WHERE state='MA');
```

3. Select Remote jobs.

Description: Searching for Jobs where the workplace is remote.

Actor: User

Precondition: Needs to check if Jobs where location type is remote are present in our database.

Steps:

Actor action: Search for AI Jobs with location value as Remote.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

Select Remote jobs

CREATE VIEW jobs_remote **AS**

```
SELECT title, description, date_posted, link FROM JobData WHERE location_id IN  
(SELECT id FROM Location WHERE city='Remote');
```

4. Select the top 3 locations with low tax rates.

Description: Searching for Top 3 Job Location which has low tax rate.

Actor: User

Precondition: Needs to check if tax rate values are present in our database for Job locations in the US (United States).

Steps:

Actor action: Search for Top 3 Job Location with low tax rate.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

Select locations from states with low tax rates

```
CREATE VIEW locations_low_tax AS
```

```
SELECT city FROM Location WHERE state IN (SELECT * FROM (SELECT state FROM state_data  
ORDER BY tax_rate ASC LIMIT 3) AS state_table);
```

5. Select jobs at a location with the lowest tax rate.

Description: Searching for a Job Location which has the lowest tax rate.

Actor: User

Precondition: Needs to check if tax rate values are present in our database for Job locations in the US (United States).

Steps:

Actor action: Search for the Job Location with lowest tax rate.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

Select jobs at location with lowest tax rate

CREATE VIEW jobs_low_tax **AS**

```
SELECT title, description, date_posted, link FROM JobData WHERE location_id IN  
(SELECT id FROM Location WHERE state IN (SELECT * FROM (SELECT state FROM  
state_data ORDER BY tax_rate ASC LIMIT 2) AS state_table));
```

6. Select jobs at top 3 locations with low cost of living.

Description: Searching for Top 3 Job Location which has low cost of living index.

Actor: User

Precondition: Needs to check if cost of living index values are present in our database for Job locations in the US (United States).

Steps:

Actor action: Search for Top 3 Job Location with low cost of living index.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

CREATE VIEW jobs_low_living_cost **AS**

```
SELECT title, description, date_posted, link FROM JobData WHERE location_id IN (SELECT *  
FROM (SELECT id FROM Location ORDER BY cost_of_living_index ASC LIMIT 3) AS  
location_table);
```

7. Select jobs from companies with size -> 51 to 200 Employees

Description: Searching for Jobs where company size equals 51-200 employees.

Actor: User

Precondition: Needs to check if company size value range is present in our database for the Companies in the US (United States).

Steps:

Actor action: Search for Jobs with company size range as 51-200 employees.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_51_200_emp AS  
SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id  
FROM Company WHERE size='51 to 200 Employees');
```

8. Select jobs from Amazon.

Description: Searching for jobs where company value is Amazon.

Actor: User

Precondition: Needs to check if jobs with company name value as Amazon.

Steps:

Actor action: Search for Jobs where company name value is Amazon.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_apple AS
```

```
SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE name='Apple');
```

9. Select internships based in Texas.

Description: Searching for Jobs where employment type is Internships and state is Texas.

Actor: User

Precondition: Needs to check if database contains Jobs where employment type consists of Internship opportunities and State Texas

Steps:

Actor action: Search for Internships in Texas State.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_intern_texas AS
```

```
SELECT title, description, date_posted, link FROM JobData WHERE employmentType = 'Internship' AND location_id IN (SELECT id FROM Location WHERE state='TX');
```

10. Select jobs from companies with revenue -> \$1 to \$5 million

Description: Searching for Jobs where company revenue falls in the \$1 - \$5 Million range.

Actor: User

Precondition: Needs to check if database contains company revenue value for all the companies present in the database.

Steps:

Actor action: Search for Jobs where company revenue comes under \$1-\$5 million range.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_revenue_1_5 AS  
SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE revenue='$1 to $5 million (USD)');
```

11. Select jobs from companies with ratings >= 4.0

Description: Searching for Jobs where company ratings equal 4.0

Actor: User

Precondition: Needs to check if database contains company ratings values.

Steps:

Actor action: Search for Jobs where company ratings equal 4.0

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_rating_4 AS  
SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE rating>=4.0);
```

12. Select jobs with salary > 100000

Description: Searching for Jobs where salary is greater than 100000

Actor: User

Precondition: Needs to check if Jobs contains

Steps:

Actor action: Search for Top 3 Job Location with low tax rate.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_salary_100k AS
```

```
SELECT title, description, date_posted, link FROM JobData WHERE id IN (SELECT job_id  
FROM derived_data WHERE value >100000 and category='Salary');
```

13. Select jobs where skill = Python

Description: Searching for Jobs where python skills are needed.

Actor: User

Precondition: Needs to check if database contains Jobs where derived tag category is skill and skill value is Python.

Steps:

Actor action: Search for Jobs where Python is needed skill.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_python AS
```

```
SELECT title, description, date_posted, link FROM JobData WHERE id IN (SELECT job_id  
FROM skills_data WHERE skill_name like '%python%');
```

14. Select jobs related to Finance industry

Description: Searching for Jobs where industry sector is Finance Industry

Actor: User

Precondition: Needs to check if database contains Industry domain and sector related to Jobs is present.

Steps:

Actor action: Search for Jobs related to Finance Industry.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_software AS
```

```
SELECT title, description, date_posted, link FROM JobData WHERE company_id IN  
(SELECT id FROM Company WHERE industry='Software Development');
```

15. Select jobs related to Finance industry and skill as Python

Description: Searching for Jobs where industry sector is Finance Industry and python skills are needed.

Actor: User

Precondition: Needs to check if database contains Industry domain, sector related to Jobs and derived tag category is skill and skill value is Python. is present.

Steps:

Actor action: Search for Jobs related to Finance Industry and python skill is required.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_software_python AS  
SELECT title, description, date_posted, link FROM JobData WHERE company_id IN  
(SELECT id FROM Company WHERE industry='Software Development') AND id IN  
(SELECT id FROM derived_data WHERE category='Skills' AND value like '%python%');
```

16. Select Apple jobs with title data scientist

Description: Searching for Jobs where company name is Apple and Job title is AI/ML - UI Engineer, AI/ML Data.

Actor: User

Precondition: Needs to check if database contains Jobs with company name value as Apple along with Job Title.

Steps:

Actor action: Search for Jobs in Apple and Job title is AI/ML - UI Engineer, AI/ML Data.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_apple_aiml AS  
SELECT title, description, date_posted, link FROM JobData WHERE title LIKE '%AI/ML%'  
AND company_id IN (SELECT id FROM Company WHERE name='Apple');
```

17. Select Data Science Enhance IT jobs in San Diego.

Description: Searching for Jobs related to Data Science at Apple – San diego location.

Actor: User

Precondition: Needs to check if database contains Jobs with company name value as Apple and Data Science as skill value in derived tag table.

Steps:

Actor action: Search for Data Science Jobs in Enhance IT in San Diego City.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_ds_enhance_sandiego AS  
SELECT title, description, date_posted, link FROM JobData WHERE title LIKE '%Data  
Scientist%'  
AND company_id in (SELECT id FROM company WHERE name='Enhance IT')  
and location_id in (SELECT id FROM Location WHERE city = 'San Diego');
```

18. Select associate jobs in New York City

Description: Searching for Jobs where seniority level is Associate in New York Area.

Actor: User

Precondition: Needs to check if database contains Jobs with different Seniority Level for New York City.

Steps:

Actor action: Search for Jobs with Associate as Seniority level in Boston Area.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_associate_newyork AS  
SELECT title, description, date_posted, link, location_id  
FROM JobData WHERE seniority_level='Associate' and location_id IN (SELECT id FROM  
Location WHERE city='New York City Metropolitan Area');
```

19. Searching for Jobs where seniority level is Mid-Senior level and salary ranges between 50000 and 100000

Description: Searching for Jobs where seniority level is Mid-senior and salary range is between 50000 – 100000 is needed.

Actor: User

Precondition: Needs to check if database contains Jobs with different Seniority level and salary range is between 50000 – 100000 is mentioned in the derived tag table.

Steps:

Actor action: Search for Jobs with Mid-senior Level and salary range is between 50000 – 100000 is needed.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW mid_senior_salary AS
SELECT title, description, date_posted, link
FROM JobData WHERE seniority_level = 'Mid-Senior level'
AND id IN (SELECT job_id FROM derived_data WHERE Category = 'Salary'
AND value BETWEEN 50000 and 100000);
```

20. Select jobs from apple where job description contains H1B

Description: Searching for Jobs where company name is Apple and Job Description contains H1B.

Actor: User

Precondition: Needs to check if database contains Jobs with company name value as Apple along with Job Description.

Steps:

Actor action: Search for Jobs in Apple and Job description contains H1B.

System Responses: If there is a search match then the corresponding job data is retrieved from the database, and the use case ends.

Post Condition: The user can view the query result.

Alternate Path: If user request is incorrect, system will throw an error and if data is not present in the database, then the system will return null

Error: Search query is invalid, or data is not present.

SQL:

```
CREATE VIEW jobs_apple_h1b AS
```

```
SELECT title, description, date_posted, link FROM JobData WHERE description LIKE  
'%H1B%' AND company_id IN (SELECT id FROM Company WHERE name='Apple');
```

```

from sqlalchemy import create_engine
import plotly.graph_objects as go
import plotly.express as px
import re
%matplotlib inline

import string
import nltk
nltk.download('stopwords')
nltk.download('wordnet')
from nltk.corpus import stopwords
from sklearn.naive_bayes import MultinomialNB
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score, classification_report, confusion_matrix
from textblob import Word

[nltk_data] Downloading package stopwords to
[nltk_data]      C:\Users\ashwini\AppData\Roaming\nltk_data...
[nltk_data] Package stopwords is already up-to-date!
[nltk_data] Downloading package wordnet to
[nltk_data]      C:\Users\ashwini\AppData\Roaming\nltk_data...

```

Converting Linkedin Data into Dataframe

```

linkedin_data = pd.read_json("linkedin-jobsdata.json")
linkedin_data.rename(columns = {'title':'JobTitle', 'jobId':'JobId', 'companyName': 'CompanyName',
                               'datePosted':'datePosted','link':'Link','description':'JobDescription',
                               'seniorityLevel':'seniorityLevel', 'employmentType':'employmentType',
                               'jobFunction':'jobFunction', 'industry':'Industry'},
                     inplace =True)
linkedin_data.head()

```

	JobTitle	JobId	CompanyName	Location	datePosted	Link	JobDescription
0	Data Scientist (Deep Learning), Peacock	3390271556	Peacock	New York, NY	2022-12-06	https://www.linkedin.com/jobs/view/data-scient...	Co... Data owns and
1	Data Analyst, Money	3394422566	SoFi	California, United States	2022-12-09	https://www.linkedin.com/jobs/view/data-analys...	Em... Ap... Privacy Who we
2	Data Scientist	3384157495	Grammarly	New Jersey, United States	2022-12-02	https://www.linkedin.com/jobs/view/data-scient...	Gram... excited a remo...
3	Data Scientist	3390226105	Atrium	United States	2022-12-06	https://www.linkedin.com/jobs/view/data-scient...	This role... key role w... with cu...
4	Data Scientist	3400933369	FocusKPI, Inc.	San Francisco, CA	None	https://www.linkedin.com/jobs/view/data-scient...	Focu... seeking Sci...

Creating new columns for City and State

```

linkedin_data[['City', 'State']] = linkedin_data['Location'].str.split(',', expand=True)
linkedin_data.head()

```

	JobTitle	JobId	CompanyName	Location	datePosted	Link	JobDescription
0	Data Scientist (Deep Learning), Peacock	3390271556	Peacock	New York, NY	2022-12-06	https://www.linkedin.com/jobs/view/data-scient...	Co... Data owns and
1	Data Analyst, Money	3394422566	SoFi	California, United States	2022-12-09	https://www.linkedin.com/jobs/view/data-analys...	Em... Ap... Privacy Who we
2	Data Scientist	3384157495	Grammarly	New Jersey, United States	2022-12-02	https://www.linkedin.com/jobs/view/data-scient...	Gram... excited a remo...
3	Data Scientist	3390226105	Atrium	United States	2022-12-06	https://www.linkedin.com/jobs/view/data-scient...	This role... key role w... with cu...
4	Data Scientist	3400933369	FocusKPI, Inc.	San Francisco, CA	None	https://www.linkedin.com/jobs/view/data-scient...	Focu... seeking Sci...

```
linkedin_data.shape
```

```
(1962, 13)
```

```
linkedin_data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1962 entries, 0 to 1961
Data columns (total 13 columns):
JobTitle          1962 non-null object
JobId             1962 non-null int64
CompanyName       1962 non-null object
Location          1962 non-null object
```

```
memory usage: 199.4+ KB

linkedin_data=linkedin_data.drop_duplicates()
linkedin_data.shape
```

(1799, 13)

```
print (check_for_nan)

JobTitle          0
JobId            0
CompanyName       0
Location          0
datePosted        561
Link              0
JobDescription    0
seniorityLevel   129
employmentType   0
jobFunction       129
Industry          138
City              0
State             311
dtype: int64



## Extracting skills from LinkedIn data



### Preprocessing Data for modeling



```
linkedin_data.columns = linkedin_data.columns.str.replace(' ', '_')

Lower case
linkedin_data['JobDescription'] = linkedin_data['JobDescription'].apply(lambda x: " ".join(x.lower().split()))

remove tabulation and punctuation
linkedin_data['JobDescription'] = linkedin_data['JobDescription'].str.replace('[^\w\s]', ' ')

digits
linkedin_data['JobDescription'] = linkedin_data['JobDescription'].str.replace('\d+', ' ')

#remove stop words
stop = stopwords.words('english')
```


```

```
linkedin_data['JobDescription'] = linkedin_data['JobDescription'].apply(lambda x: " ".join(x))

## lemmatization
linkedin_data['JobDescription'] = linkedin_data['JobDescription'].apply(lambda x: " ".join([W

print("Preprocessed data: \n")
print(linkedin_data.head())

print(linkedin_data.shape)
```

```

0 Data Scientist (Deep Learning), Peacock 3390271556 Peacock
1 Data Analyst, Money 3394422566 SoFi
2 Data Scientist 3384157495 Grammarly
3 Data Scientist 3390226105 Atrium
4 Data Scientist 3400933369 FocusKPI, Inc.

Location datePosted \
0 New York, NY 2022-12-06
1 California, United States 2022-12-09
2 New Jersey, United States 2022-12-02
3 United States 2022-12-06
4 San Francisco, CA NaN

Link \
0 https://www.linkedin.com/jobs/view/data-scient...
1 https://www.linkedin.com/jobs/view/data-analys...
2 https://www.linkedin.com/jobs/view/data-scient...
3 https://www.linkedin.com/jobs/view/data-scient...
4 https://www.linkedin.com/jobs/view/data-scient...

JobDescription seniorityLevel \
0 company description nbcuniversal owns operates... Associate
1 employee applicant privacy notice shape bright... Not Applicable
2 grammarly excited offer remote first hybrid wo... Entry level
3 role play key role working customer align stra... Mid-Senior level
4 focuskpi seeking data scientist enable deep me... Entry level

employmentType jobFunction \
0 Full-time Science
1 Full-time Information Technology
2 Full-time Engineering and Information Technology
3 Full-time Engineering and Information Technology
4 Contract Engineering and Information Technology

Industry City \
0 Broadcast Media Production and Distribution, E... New York
1 Financial Services California
2 Internet Publishing New Jersey
3 IT Services and IT Consulting United States
4 IT Services and IT Consulting San Francisco

State
0 NY
1 United States
2 United States
3 NaN
4 CA
(1962, 13)



## Modeling - train the naive bayes algorithm



```

Converting text to features
vectorizer = TfidfVectorizer()
#Tokenize and build vocabulary
X = vectorizer.fit_transform(linkedin_data.JobDescription)
y = linknedin_data.JobTitle

split data into 80% training and 20% test
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=109)
print("train data shape: ", X_train.shape)
print("test data shape: ", X_test.shape)

Fit model
clf = MultinomialNB()
clf.fit(X_train, y_train)
Predict
y_predicted = clf.predict(X_test)

train data shape: (1569, 13953)
test data shape: (393, 13953)

from textblob import TextBlob
technical_skills = ['python', 'c', 'r', 'c++', 'java', 'hadoop', 'scala', 'flask', 'pandas', 'spark',
'numpy', 'php', 'sql', 'mysql', 'css', 'mongodb', 'nltk', 'keras', 'pytorch', 'tensorflow',
'linux', 'Ruby', 'JavaScript', 'django', 'react', 'reactjs', 'ai', 'ui', 'tableau',
'SAS', 'HTML', 'SPSS', 'VBA', 'Spark', 'Angular', 'ReactJS']

feature_array = vectorizer.get_feature_names()
number of overall model features
features_numbers = len(feature_array)
max sorted features number
n_max = int(features_numbers * 0.1)

##initialize output dataframe
output = pd.DataFrame()
for i in range(0, len(clf.classes_)):

 class_prob_indices_sorted = clf.feature_log_prob_[i, :].argsort()[:-1]
 raw_skills = np.take(feature_array, class_prob_indices_sorted[:n_max])

```


```

```
print("\n****",clf.classes_[0],"****\n")
print("list of unprocessed skills :")
print(raw_skills[:5])
print("Top technical skills",top_technical_skills[:5])

**** -NATO CDMS Data Scientist ****

list of unprocessed skills :
['clubhouse' 'people' 'something' 'product' 'thing']
Top technical skills ['flask', 'django', 'sql', 'python']

output.head()
```

	Job_Title	technical_skills
0	-NATO CDMS Data Scientist	[tableau, tensorflow, pytorch, django, flask, ...]
1	100% Remote - Data Analyst (Python) (Need some...)	[flask, django, sql, python]
2	1152 - Jr. Software Engineer (Machine Learning)	[django, flask, python, java, ai]
3	2023 Intern - Experience Insights Analyst	[tableau, django, sql, flask]
4	2023 Summer Intern - Big Data Analyst, Technology	[flask, django, sql, python]

```

linkedin_skills_records = output.to_dict('records')
linkedin_skills_records[:5]

[{'Job_Title': '-NATO CDMS Data Scientist',
 'technical_skills': ['tableau',
 'tensorflow',
 'pytorch',
 'django',
 'flask',
 'spark',
 'python',
 'ai',
 'sql']},
 {'Job_Title': '100% Remote - Data Analyst (Python) (Need someone to be based in Dallas, TX OR',
 'technical_skills': ['flask', 'django', 'sql', 'python']},
 {'Job_Title': '1152 - Jr. Software Engineer (Machine Learning)',
 'technical_skills': ['django', 'flask', 'python', 'java', 'ai']},
 {'Job_Title': '2023 Intern - Experience Insights Analyst',
 'technical_skills': ['tableau', 'django', 'sql', 'flask']},
 {'Job_Title': '2023 Summer Intern - Big Data Analyst, Technology',
 'technical_skills': ['flask', 'django', 'sql', 'python']}]



## Writing LinkedIn extracted skills records to JSON



```

linkedin_skills = json.dumps(linkedin_skills_records, indent=4)

Writing to LinkedIn_skills.json
with open("LinkedIn_skills.json", "w") as outfile:
 outfile.write(linkedin_skills)

```



## Reading Glassdoor data and converting into dataframe



```

train_files = glob.glob("glassdoor-jobsdata.json")

glassdoor_data = pd.DataFrame()

for count,ele in enumerate(train_files,len(train_files)):
 glassdoor_data = pd.concat([glassdoor_data, pd.read_json(ele)])

print(glassdoor_data.columns)

glassdoor_data.rename(columns = { 'title':'JobTitle', 'jobId':'JobId', 'companyName': 'CompanyName',
 'datePosted':'DatePosted','link':'Link','description':'JobDescription',
 'salary':'Salary','companyRating':'Rating', 'companyFoundedYear':'CompanyFoundedYear',
 'revenue':'Revenue'} ,inplace =True)
glassdoor_data.drop(['sector'],axis =1).head()

Index(['title', 'jobId', 'companyName', 'location', 'datePosted', 'link',
 'description', 'salary', 'industry', 'companyRating',
 'companyFoundedYear', 'sector', 'size', 'revenue'],
 dtype='object')

JobTitle JobId CompanyName Location DatePosted
0 Data Scientist / Principal Data Scientist 1007527738949 Northrop Grumman Melbourne, FL Dec 24, 2021 https://www.glassdoor.com/partner/jobListing...
1 Data Scientist 1008344133056 Brooksource Reston, VA Dec 12, 2022 https://www.glassdoor.com/partner/jobListing...
2 Deep Learning Researcher 1008238068907 Topaz Labs Dallas, TX Oct 27, 2022 https://www.glassdoor.com/partner/jobListing...
3 Manager, Data Science 1008324542619 Wings Financial Credit Union Apple Valley, MN Dec 02, 2022 https://www.glassdoor.com/partner/jobListing...
4 Data Scientist - Model Risk Governance 1008339719081 Caliber Financial Services Dallas, TX Dec 09, 2022 https://www.glassdoor.com/partner/jobListing...

glassdoor_data.shape

(1590, 14)

glassdoor_data=glassdoor_data.drop_duplicates(subset=['JobId'])
glassdoor_data.shape

```


```

	JobTitle	Job
0	Data Scientist / Principal Data Scientist	1007527738

2	Deep Learning Researcher	1008238068907	Topaz Labs	Dallas, TX	Oct 27, 2022	https://www.glassdoor.com/partner/jobListing.
3	Manager, Data Science	1008324542619	Wings Financial Credit Union	Apple Valley, MN	Dec 02, 2022	https://www.glassdoor.com/partner/jobListing.
	Data Scientist -		Caliber		Dec 09	

Job Title	Job ID	Company Name	Location	Date Posted
Scientist - Model Risk Governance	1008339719081	Financial Services	Dallas, TX	Dec 03, 2022 https://www.glassdoor.com/partner/jobListing.

	JobTitle	JobId	CompanyName	Location	DatePosted	Link
0	Data Scientist / Principal Data Scientist	1007527738949	Northrop Grumman	Melbourne, FL	Dec 24, 2021	https://www.glassdoor.com/partner/jobListing.0.html
1	Data Scientist	1008344133056	Brooksource	Reston, VA	Dec 12, 2022	https://www.glassdoor.com/partner/jobListing.1.html
2	Deep Learning Researcher	1008238068907	Topaz Labs	Dallas, TX	Oct 27, 2022	https://www.glassdoor.com/partner/jobListing.2.html
3	Manager, Data Science	1008324542619	Wings Financial Credit Union	Apple Valley, MN	Dec 02, 2022	https://www.glassdoor.com/partner/jobListing.3.html
4	Data Scientist - Model Risk Governance	1008339719081	Caliber Financial Services	Dallas, TX	Dec 09, 2022	https://www.glassdoor.com/partner/jobListing.4.html
<pre>glassdoor_data.Founded = glassdoor_data.Founded.astype(object) glassdoor_data.Rating = glassdoor_data.Rating.astype(object) glassdoor_data.drop(['sector'], axis = 1) glassdoor_data.head()</pre>						
	JobTitle	JobId	CompanyName	Location	DatePosted	Link
0	Data Scientist / Principal Data Scientist	1007527738949	Northrop Grumman	Melbourne, FL	Dec 24, 2021	https://www.glassdoor.com/partner/jobListing.0.html
1	Data Scientist	1008344133056	Brooksource	Reston, VA	Dec 12, 2022	https://www.glassdoor.com/partner/jobListing.1.html
2	Deep Learning Researcher	1008238068907	Topaz Labs	Dallas, TX	Oct 27, 2022	https://www.glassdoor.com/partner/jobListing.2.html
3	Manager, Data Science	1008324542619	Wings Financial Credit Union	Apple Valley, MN	Dec 02, 2022	https://www.glassdoor.com/partner/jobListing.3.html
4	Data Scientist - Model Risk Governance	1008339719081	Caliber Financial Services	Dallas, TX	Dec 09, 2022	https://www.glassdoor.com/partner/jobListing.4.html
<pre>glassdoor_data.DatePosted = pd.to_datetime(glassdoor_data.DatePosted)</pre>						
0	2021-12-24					
1	2022-12-12					
2	2022-10-27					
3	2022-12-02					
4	2022-12-09					
5	2021-01-10					
6	2022-12-02					
7	2022-12-06					
8	2022-09-28					
9	2022-08-18					
10	2022-11-18					
11	2022-11-16					
12	2022-12-11					
13	2022-11-22					
14	2022-06-14					
15	2022-11-29					
16	2022-11-22					
17	2022-01-18					
18	2022-10-27					
19	2022-10-13					
20	2022-10-17					
21	2022-11-22					
22	2022-10-17					
23	2022-11-11					
24	2022-11-09					
25	2022-10-17					
26	2022-12-05					

36	2022-09-12
37	2022-11-14
38	2022-11-07
39	2022-08-23
40	2022-09-19
41	2022-12-14
42	2022-11-21
43	2022-11-11
44	2022-11-16
45	2022-10-07
46	2022-11-04

```
49      2022-08-30
50      2022-05-19
52      2022-11-09
53      2022-12-14
129     2022-11-22
154     2022-08-05
1310    2022-09-04
1312    2022-09-18
1324    2022-07-20
1326    2022-11-18
Name: DatePosted, dtype: datetime
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 59 entries, 0 to 1326
Data columns (total 16 columns):
JobTitle           59 non-null object
JobId              59 non-null int64
CompanyName        59 non-null object
Location            59 non-null object
DatePosted          59 non-null datetime64[ns]
Link                59 non-null object
JobDescription      59 non-null object
Salary              52 non-null object
Industry             51 non-null object
Rating              54 non-null float64
Founded             47 non-null float64
sector              51 non-null object
Size                54 non-null object
Revenue             54 non-null object
City                59 non-null object
State               58 non-null object
dtypes: datetime64[ns](1), float64(2), int64(1), object(12)
memory usage: 7.8+ KB



## Checking for null values



```
check_for_nan = glassdoor_data.isnull().sum()
print (check_for_nan)
```



|                | Count |
|----------------|-------|
| JobTitle       | 0     |
| JobId          | 0     |
| CompanyName    | 0     |
| Location       | 0     |
| DatePosted     | 0     |
| Link           | 0     |
| JobDescription | 0     |
| Salary         | 7     |
| Industry       | 8     |


```

```
Industry          0
Rating           5
Founded          12
sector           8
Size             5
Revenue          5
City              0
State             1
dtype: int64

glassdoor_data.JobDescription = glassdoor_data.JobDescription.replace(np.nan, '')



## Extracting skills data from Glassdoor Job description



### Preprocessing data for modeling



```
glassdoor_data.columns = glassdoor_data.columns.str.replace(' ', '_')

digits
glassdoor_data['JobDescription'] = glassdoor_data['JobDescription'].str.replace('\d+', ' ')

Lower case
glassdoor_data['JobDescription'] = glassdoor_data['JobDescription'].apply(lambda x: " ".join(x))

remove tabulation and punctuation
glassdoor_data['JobDescription'] = glassdoor_data['JobDescription'].str.replace('[^\w\s]', ' ')

#remove stop words
stop = stopwords.words('english')
glassdoor_data['JobDescription'] = glassdoor_data['JobDescription'].apply(lambda x: " ".join([word for word in x.split() if word not in stop]))

lemmatization
```


```

```

glassdoor_data['JobDescription'] = glassdoor_data['JobDescription'].apply(lambda x: " ".join(x))

print("Preprocessed data: \n")
print(glassdoor_data.head())
#print(glassdoor_data.shape)

Preprocessed data:

          JobTitle        JobId \
0 Data Scientist / Principal Data Scientist 1007527738949
1             Data Scientist 1008344133056
2      Deep Learning Researcher 1008238068907
3           Manager, Data Science 1008324542619
4 Data Scientist - Model Risk Governance 1008339719081

          CompanyName       Location DatePosted \
0    Northrop Grumman  Melbourne, FL 2021-12-24
1      Brooksource      Reston, VA 2022-12-12
2       Topaz Labs      Dallas, TX 2022-10-27
3 Wings Financial Credit Union  Apple Valley, MN 2022-12-02
4 Caliber Financial Services      Dallas, TX 2022-12-09

          Link \
0 https://www.glassdoor.com/partner/jobListing.h...
1 https://www.glassdoor.com/partner/jobListing.h...
2 https://www.glassdoor.com/partner/jobListing.h...
3 https://www.glassdoor.com/partner/jobListing.h...
4 https://www.glassdoor.com/partner/jobListing.h...

          JobDescription \
0 requisition id r category research science loc...
1 data scientist reston va onsite federal integr...
2 topaz lab ai tech company build software solve...
3 primary purpose serve wing financial turning d...
4 job description data scientist model risk gove...

          Salary           industry Rating \
0 Employer est.:$78K - $118K  Aerospace & Defense     4
1 Employer est.:$200K          HR Consulting     4.1
2 $85K - $133K (Glassdoor est.)  Computer Hardware Development   3.4
3 $85K - $129K (Glassdoor est.)  Banking & Lending     4
4 $86K - $132K (Glassdoor est.)            NaN    -0.1

  Founded           sector        Size \
0  1939  Aerospace & Defense  10000+ Employees
1  2000 Human Resources & Staffing  201 to 500 Employees
2  2008 Information Technology      1 to 50 Employees
3  1938 Financial Services  501 to 1000 Employees
4    NaN            NaN  201 to 500 Employees

          Revenue        City State
0   $10+ billion (USD)  Melbourne    FL
1 $100 to $500 million (USD)      Reston    VA
2 Unknown / Non-Applicable      Dallas    TX
3   $5 to $10 billion (USD)  Apple Valley  MN
4 Unknown / Non-Applicable      Dallas    TX

```

Modeling - train the naive bayes algorithm

```

## Converting text to features
vectorizer = TfidfVectorizer()
#Tokenize and build vocabulary
X = vectorizer.fit_transform(glassdoor_data.JobDescription)
y = glassdoor_data.JobTitle

# split data into 80% training and 20% test
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=109)
print("train data shape: ", X_train.shape)
print("test data shape: ", X_test.shape)

# Fit model
clf = MultinomialNB()
clf.fit(X_train, y_train)
## Predict
y_predicted = clf.predict(X_test)

train data shape: (1272, 3818)
test data shape: (318, 3818)

from textblob import TextBlob
technical_skills = ['python', 'c', 'r', 'c++', 'java', 'hadoop', 'scala', 'flask', 'pandas', 'spark',
'numpy', 'php', 'sql', 'mysql', 'css', 'mongodb', 'nltk', 'keras', 'pytorch', 'te',
'linux', 'Ruby', 'JavaScript', 'django', 'react', 'reactjs', 'ai', 'ui', 'tableau',
'SAS', 'HTML', 'SPSS', 'VBA', 'Spark', 'Angular', 'ReactJS']

feature_array = vectorizer.get_feature_names()
# number of overall model features
features_numbers = len(feature_array)
## max sorted features number

```

```
## Extract technical skills
top_technical_skills = list(set(technical_skil

## Extract adjectives

# Delete technical skills from raw skills list
## At this steps, raw skills list doesnt contain technical skills
#raw_skills = [x for x in raw_skills if x not in top_technical_skills]
```

```
txt = " ".join(raw_skills)
blob = TextBlob(txt)
#top 6 adjective
#top_adjectives = [w for (w, pos) in TextBlob(txt).pos_tags if pos.startswith("JJ")][:6]
#print("Top 6 adjectives: ",top_adjectives)

output = output.append({'Job_Title':clf.classes_[i],
                       'technical_skills':top_technical_skills},
                      ignore_index=True)
print("\n*****",clf.classes_[0],"****\n")
print("list of unprocessed skills :")
print(raw_skills)
```

***** Chief Engineer (CE) of Motion GEOINT Services Flex/Hybrid workplace options *****

list of unprocessed skills :

```
['kidney' 'oversees' 'financial' 'cfo' 'nkc' 'northwest' 'center' 'serf'
 'contract' 'investment' 'committee' 'accounting' 'board' 'medicare'
 'provision' 'patient' 'finance' 'renewal' 'donation' 'lease' 'dialysis'
 'negotiates' 'oversight' 'washington' 'organization' 'reporting'
 'payment' 'service' 'staff' 'provider' 'organizational' 'coordinate'
 'agreement' 'facility' 'liaison' 'treasurer' 'submission' 'construction'
 'payroll' 'treasury' 'purchase' 'policy' 'healthcare' 'long' 'planning'
 'grant' 'staffing' 'sign' 'purchasing' 'per' 'first' 'care' 'short'
 'pharmacy' 'audit' 'party' 'rate' 'corporate' 'provides' 'direction'
 'commitment' 'hospital' 'rule' 'regulation' 'mindset' 'transaction'
```

'commitment' 'hospital' 'rule' 'regulation' 'mindset' 'transaction'
'preparation' 'area' 'including' 'payer' 'form' 'establishes' 'covid'
'review' 'function' 'contact' 'exemption' 'fully' 'state' 'ensures'
'regulatory' 'compliance' 'oriented' 'range' 'place' 'well' 'prior'
'order' 'employee' 'cost' 'cpa' 'gift' 'donor' 'th' 'receiving'
'jurisdiction' 'genetics' 'dramatic' 'custodian' 'recovery' 'assure'
'covenant' 'allocated' 'lean' 'alliance' 'credentialed' 'treatment' 'eh'
'aho' 'arrangement' 'attraction' 'requested' 'hospice' 'aco' 'intent'
'managed' 'outpatient' 'borrowing' 'prevent' 'bylaw' 'bond' 'opened'
'medicaid' 'esrd' 'establishment' 'accommodated' 'consultant' 'became'
'changed' 'intrinsically' 'name' 'seizes' 'obligated' 'oblige' 'bank'
'bad' 'negotiated' 'inpatient' 'gaap' 'proclamation' 'entity' 'system'
'required' 'plan' 'result' 'management' 'following' 'department' 'work'
'con' 'integral' 'succession' 'auditor' 'recognizes' 'since' 'acute'

'fee' 'charge' 'prepares' 'irs' 'ethnic' 'spread' 'adequate' 'billing'
'approves' 'debt' 'consists' 'please' 'program' 'responsible' 'external'
'internal' 'new' 'resource' 'report' 'input' 'foundation' 'file'
'certificate' 'pharmaceutical' 'supplier' 'negotiating' 'designated'
'operating' 'effectiveness' 'adhere' 'implication' 'annually' 'ten'
'officer' 'requiring' 'known' 'material' 'relation' 'disease' 'reported'
'largest' 'directed' 'include' 'medical' 'choice' 'feedback'
'accountability' 'impacting' 'see' 'capital' 'reviewing' 'comfortable'
'seattle' 'profit' 'health' 'equipment' 'worker' 'growth' 'chief'
'license' 'depending' 'creative' 'passion' 'authority' 'reduce' 'ass'
'today' 'transparency' 'proof' 'budget' 'religious' 'based'
'discriminate' 'point' 'least' 'collaboration' 'representative' 'provide'
'oral' 'collaborative' 'vaccinated' 'start' 'note' 'nation' 'engagement'
'efficiency' 'direct' 'base' 'not' 'assigned' 'last' 'fallow' 'team' 'lead'

'efficient' 'direct' 'secure' 'experienced' 'portfolio' 'term' 'need'
'process' 'related' 'considered' 'consistent' 'good' 'monitor'
'acquisition' 'executive' 'human' 'basis' 'goal' 'operational' 'date'
'motivated' 'procedure' 'support' 'non' 'activity' 'annual' 'innovative'
'document' 'analysis' 'team' 'opportunity' 'applicable' 'group'
'vaccination' 'excellent' 'purpose' 'implementation' 'leading'
'insurance' 'contractor' 'effective' 'leader' 'also' 'member' 'strategic'
'culture' 'part' 'experience' 'age' 'etc' 'day' 'processing' 'sex'
'professional' 'seeking' 'written' 'int' 'leadership' 'strategy'
'government' 'ensure' 'gender' 'communication' 'partner' 'religion'
'sexual' 'origin' 'preferred' 'relevant' 'race' 'artificial' 'mission'
'lead' 'orientation' 'decision' 'company' 'position' 'master' 'set'
'status' 'national' 'role' 'field' 'veteran' 'disability' 'qualification'
'business' 'bachelor' 'responsibility' 'may' 'employer' 'information'

```
'equal' 'development' 'skill' 'degree' 'requirement' 'year' 'directly'  
'directorate' 'director' 'entrepreneur' 'entitled' 'excels' 'dice'  
'establishing' 'excellence' 'excel' 'exceed' 'entrepreneurial' 'entry'  
'directive' 'example' 'directing' 'environm' 'environment'  
'environmental' 'environmentally' 'envision' 'excepted' 'exceptional'  
'exception' 'execute' 'enhancing' 'exemplify' 'enjoy' 'enjoys'  
'execution' 'executing' 'executes' 'enough' 'ensemble'  
'disability_accommodation' 'executed' 'dialog' 'exclusively' 'entire'  
'ensuring' 'dis' 'exciting']
```

	Job Title	technical_skills
0	Chief Engineer (CE) of Motion GEOINT Services ...	[]
1	Cloud Migration Manager	[]
2	Collections Requirements Manager (CRM) - Senio...	[]
3	Data Annotation Specialist - Arlington, VA	[ai]
4	Data Architect, Senior	[tableau, sql, python]

	Category	Value	
1	Salary	98.0	Data Analyst
2	Salary	200.0	Data Analyst
4	Salary	107.0	Data Analyst
6	Salary	116.0	Data Analyst
7	Salary	278.0	Data Scientist, Product

In [289...]	jobs_table_data.head()																												
Out [289...]	<table border="1"><thead><tr><th></th><th>title</th><th>id</th><th>description</th></tr></thead><tbody><tr><td>1</td><td>Data Scientist</td><td></td><td>Company Description</td></tr><tr><td>2</td><td>(Deep Learning), Peacock</td><td>3.390272e+09</td><td>NBCUniversal owns and operates...</td></tr><tr><td>3</td><td>Data Analyst, Money</td><td>3.394423e+09</td><td>Employee Applicant Privacy Notice Who we are: ...</td></tr><tr><td>4</td><td>Data Scientist</td><td>3.384157e+09</td><td>Grammarly is excited to offer a remote-first h...</td></tr><tr><td>5</td><td>Data Scientist</td><td>3.390226e+09</td><td>This role plays a key role working with custom...</td></tr><tr><td>6</td><td>Data Scientist</td><td>3.400933e+09</td><td>FocusKPI is seeking a Data Scientist to enable...</td></tr></tbody></table>		title	id	description	1	Data Scientist		Company Description	2	(Deep Learning), Peacock	3.390272e+09	NBCUniversal owns and operates...	3	Data Analyst, Money	3.394423e+09	Employee Applicant Privacy Notice Who we are: ...	4	Data Scientist	3.384157e+09	Grammarly is excited to offer a remote-first h...	5	Data Scientist	3.390226e+09	This role plays a key role working with custom...	6	Data Scientist	3.400933e+09	FocusKPI is seeking a Data Scientist to enable...
	title	id	description																										
1	Data Scientist		Company Description																										
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5	Data Scientist	3.390226e+09	This role plays a key role working with custom...																										
6	Data Scientist	3.400933e+09	FocusKPI is seeking a Data Scientist to enable...																										

In [294...]	#Start counting rows from 1
	<pre>derived_data = derived_data.merge() derived_data = derived_data.filter derived_data.rename(columns={'Category': 'Category'}) derived_data = derived_data.dropna() derived_data.head() derived_data.to_sql(con=engine, name='derived_data')</pre>

In [302...]	skills_jobs_data = skills_data.merge() skills_jobs_data = skills_data.filter skills_jobs_data.head()
-------------	--

1	12	3.399602e+
2	13	3.396107e+
3	13	3.399602e+
4	9	3.396107e+

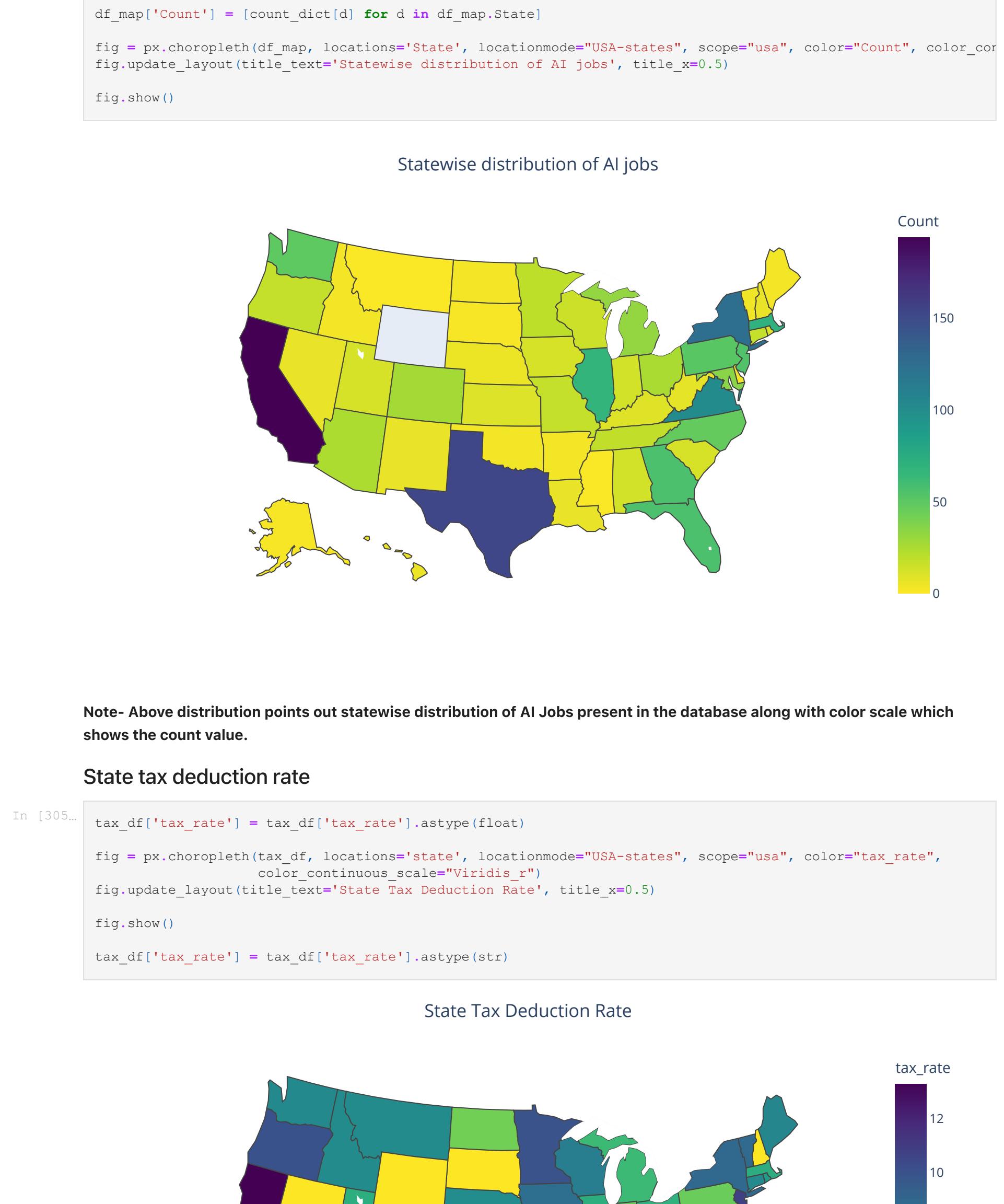
be any column which would be dependent on the non-primary key column. Rest of the other tables satisfy 2 NF form.

Visualisations

Statewise distribution of AI jobs

```
In [304]: df_map = pd.DataFrame(jobs_data.State.unique(), columns=['State'])

count_dict = {d: (jobs_data['State'] == d).sum() for d in df_map.State.unique()}
```



Note - Above visualisation highlights State Tax Rate percentage across all the states across US where color scale points to the states with most to least Tax rate deduction value.

State cost of living index

In [306]:

```
fig = px.choropleth(cost_of_living_data, locations='state', locationmode="USA-states", scope="usa",
                     color="cost_of_living_index", color_continuous_scale="Viridis_r")
fig.update_layout(title_text='State cost of living index', title_x=0.5)
fig.show()
```

State cost of living index

A choropleth map of the United States showing the state cost of living index. The map uses a Viridis color scale, with darker shades representing higher cost of living index values. California is the darkest blue, indicating the highest index values. Several states, including Wyoming, Montana, and North Dakota, are yellow, indicating the lowest index values. The color scale ranges from approximately 80 (yellow) to 160 (dark purple).

Note - Above Visualisation shows the cost of living index value per states present in USA. The color index shows the states with most to least cost of living index values.

Companies with most AI job openings

```
fig.layout.yaxis.title.text = 'Job Count'  
fig.update_layout(title_text='Companies with most AI job openings', title_x=0.5)  
fig.show()
```

A bar chart titled "Companies with most AI job openings". The y-axis is labeled "Count" and ranges from 25 to 45. The x-axis lists two companies. The first company has a bar reaching approximately 43 on the y-axis. The second company has a bar reaching approximately 34 on the y-axis.

Company	Job Count
Company A	43
Company B	34

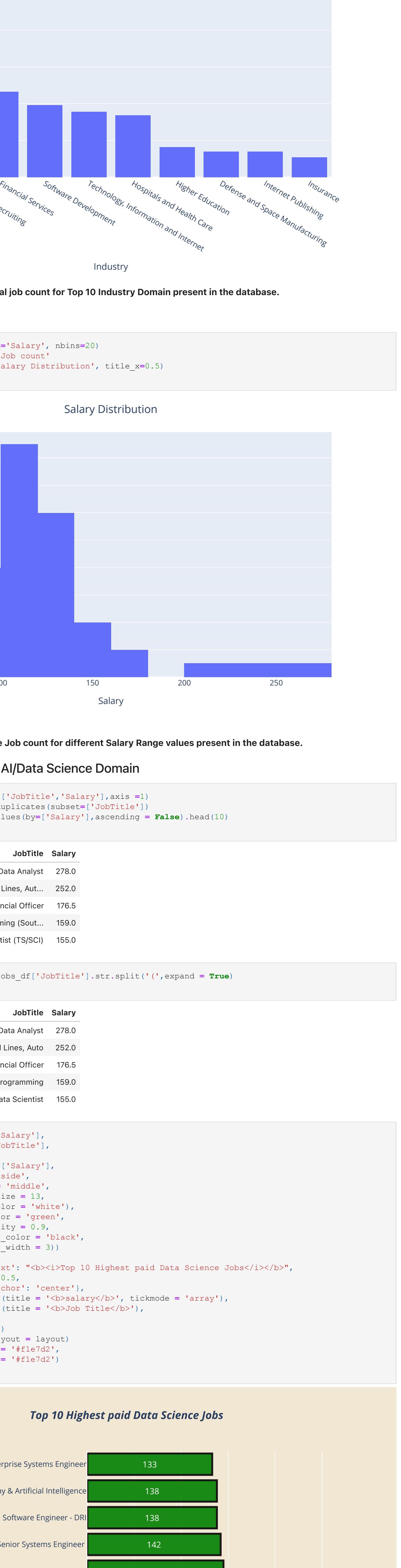
A vertical color bar scale ranging from 0 to 15. The scale is marked at intervals of 5, with numerical labels '0', '5', '10', and '15' positioned to the left of the bar. The bar itself is a solid blue color.

Note - Above visualisation shows the
Industries with most AI job

```
fig = px.histogram(df_ind, x='Industry', y='Count')
fig.layout.yaxis.title.text = 'Job count'
fig.update_layout(title_text='Industries with most AI job openings', title_x=0.5)
fig.show()
```

The figure is a histogram titled "Industries with most AI job openings". The x-axis is labeled "Industry" and the y-axis is labeled "Job count", with a maximum value of 250. The histogram bars are blue, showing that the highest number of AI job openings is in the Technology industry, followed by Manufacturing and Healthcare.

Industry	Job Count (approx.)
Technology	250
Manufacturing	180
Healthcare	150
Finance	120
Retail	100
Automotive	80
Aerospace	70
Pharmaceuticals	60
Telecommunications	50
Energy	40
Transportation	30
Real Estate	20
Food & Beverage	15
Chemical	10
Plastics	8
Leather Goods	5
Textiles	3
Other	2

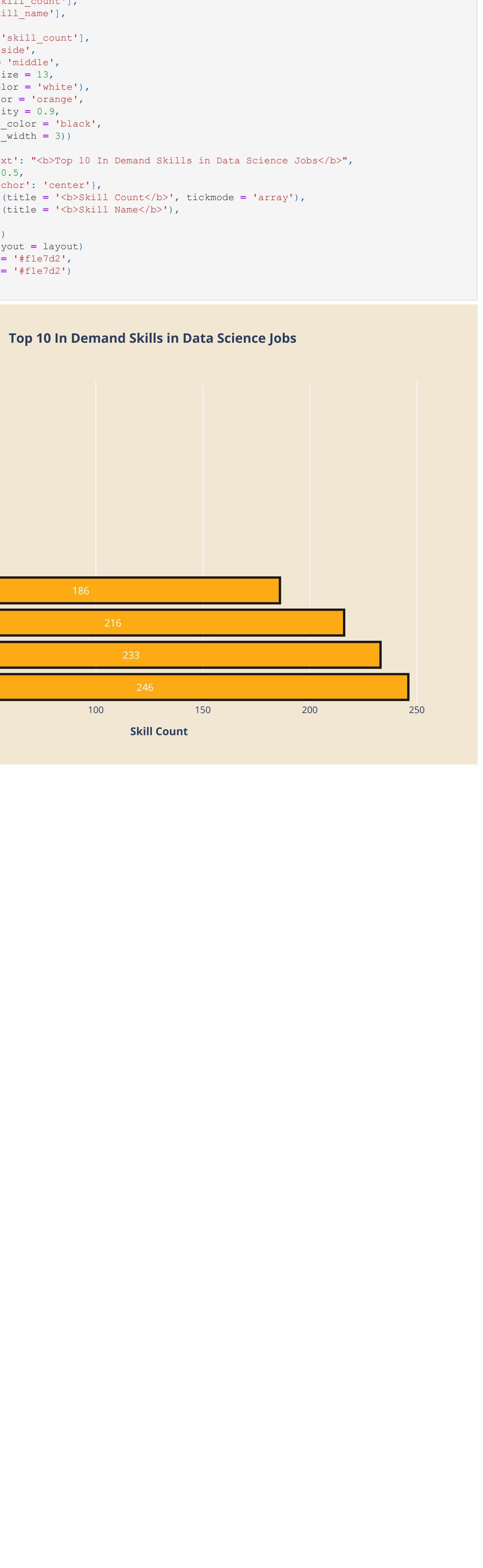


A horizontal bar chart titled "Job Title" on the y-axis and "salary" on the x-axis. The x-axis has major ticks at 0, 50, 100, 150, 200, and 250. The y-axis lists six job titles from top to bottom: Data Scientist, Senior Data Scientist, Senior Director, Statistical Programming, Vice President of Finance/Chief Financial Officer, Principal Data Scientist - Personal Lines, Auto, and Senior Blockchain Data Analyst. Each job title is associated with a green horizontal bar representing its salary. The exact numerical value is displayed at the end of each bar.

Job Title	salary
Data Scientist	145
Senior Data Scientist	155
Senior Director, Statistical Programming	159
Vice President of Finance/Chief Financial Officer	176.5
Principal Data Scientist - Personal Lines, Auto	252
Senior Blockchain Data Analyst	278

```
13... top_skills = skills_da  
top_skills['skill_coun  
top_skills = top_skill  
top_skills=top_skills.  
top_skills.head()
```

16	sql	246
12	python	233
14	ai	216
0	tableau	186
2	tensorflow	54



SQL - Queries

1. Select jobs based in Boston.

```
SELECT title, description, date_posted, link FROM JobData
WHERE location_id = (SELECT id FROM Location WHERE city='Boston');
```

The screenshot shows the MySQL Workbench interface. At the top, there's a toolbar with various icons. Below it is a script editor window containing the following SQL code:

```
1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link FROM JobData
4   WHERE location_id = (SELECT id FROM Location WHERE city='Boston');
```

Below the script editor is a results grid titled "Result Grid". It has columns for "title", "description", "date_posted", and "link". There is one row of data displayed:

title	description	date_posted	link
Full Season Environmental Education Intern Junior Python Software Engineer	Reports to: Senior Education Program Manager... We are looking for entry-level or junior software...	2022-11-24 NULL	https://www.linkedin.com/jobs/view/full-season-environmental-education-intern-at-growing-gardens-3376903138?refid=... https://www.glassdoor.com/partner/jobListing.htm?pos=529&ao=1136043&s=58&guid=00000184cb3f47d89a4a6

2. Select jobs based in Massachusetts.

```
SELECT title, description, date_posted, link FROM JobData
WHERE location_id IN (SELECT id FROM Location WHERE state='MA');
```

The screenshot shows the MySQL Workbench interface. At the top, there's a toolbar with various icons. Below it is a script editor window containing the following SQL code:

```
1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link FROM JobData
4   WHERE location_id IN (SELECT id FROM Location WHERE state='MA');
```

Below the script editor is a results grid titled "Result Grid". It has columns for "title", "description", "date_posted", and "link". There are multiple rows of data displayed, each representing a different job listing from LinkedIn and Glassdoor.

title	description	date_posted	link
Full Season Environmental Education Intern Junior Python Software Engineer	Reports to: Senior Education Program Manager... We are looking for entry-level or junior software...	2022-11-24 NULL	https://www.linkedin.com/jobs/view/full-season-environmental-education-intern-at-growing-gardens-3376903138?refid=... https://www.glassdoor.com/partner/jobListing.htm?pos=529&ao=1136043&s=58&guid=00000184cb3f47d89a4a6
Summer 2023 Internship - Application Developer Intern	ADP is hiring a Summer 2023 GPT Intern. A... About Us: Hughes Marino is a global corporate...	2022-11-30 2022-11-11	https://www.linkedin.com/jobs/view/summer-2023-internship-application-development-at-adp-3376789490?refid=... https://www.linkedin.com/jobs/view/broker-intern-at-hughes-marino-32679521787?refid=SvIK5g%2BmxMvGDQ%
SPRING 2023 INTERNSHIPS	DÖEN is a Los Angeles-based line inspired by ... WHY we get up in the morning At GHJ we help...	2022-11-22 2022-10-24	https://www.linkedin.com/jobs/view/spring-2023-internships-at-%C3%B4en-3367039377?refid=u7W3tmOch0 https://www.linkedin.com/jobs/view/ghj-2023-spring-summer-internship-program-at-gh-3359664350?refid=u7W
GHJ 2023 Spring/Summer Internship Program	Who are we? J/P/R is a global communications...	2022-10-19	https://www.linkedin.com/jobs/view/spring-2023-student-internship-program-at-julio-garcia-marketing-public-relati...
Spring 2023 Student Internship Program	Who are we? J/P/R is a global communications...	2022-10-19	https://www.linkedin.com/jobs/view/spring-2023-student-internship-program-at-julio-garcia-marketing-public-relati...
Intern	Lavonne's The Agency Background: Lavonne's...	2022-10-16	https://www.linkedin.com/jobs/view/intern-at-lavonne-s-the-agency-3375873127?refid=BM7s5a3zLjy%2FuDx3
Capital Markets Summer Internship 2023	Who We Are Cross River Bank ("CRB"), is fund...	2022-11-23	https://www.linkedin.com/jobs/view/capital-markets-summer-internship-2023-at-cross-river-3336190881?refid=dr...
Battery Data Analyst Internship, Spring 2023 (B...	About The Role – You Will Support developmen...	2022-12-01	https://www.linkedin.com/jobs/view/battery-data-analyst-internship-spring-2023-burlingame-ca-at-proterra-inc-32...
Marketing & Gameday Presentation Intern	Job Details Description Department: Marketing...	2022-10-16	https://www.linkedin.com/jobs/view/marketing-gameday-presentation-intern-at-houston-astros-3354660477?refid=...

3. Select Remote jobs.

```
SELECT title, description, date_posted, link
FROM JobData WHERE location_id IN (SELECT id FROM Location WHERE city='Remote');
```

```
1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link
4   FROM JobData WHERE location_id IN (SELECT id FROM Location WHERE city='Remote')
```

4. Select the top 3 locations with low tax rates.

```
SELECT city FROM Location  
WHERE state IN  
(SELECT * FROM (SELECT state FROM state_data ORDER BY tax_rate ASC LIMIT 3) AS state_table);
```

```
1 • USE ai_jobs_database;
2
3 • SELECT city FROM Location
4 WHERE state IN (SELECT * FROM (SELECT state FROM state_data ORDER BY tax_rate ASC LIMIT 3) AS state_table)
```

Result Grid	Filter Rows: <input type="text" value="Search"/> Export:	
city		
▶ Anchorage		
Fairbanks		
Gainesville		
Homosassa Springs		
Jacksonville		
Key West		
Lake City		
Lakeland		
Naples		
Ocala		
Orlando		
Palatka		

5. Select jobs at a location with the lowest tax rate

```
SELECT title, description, date_posted, link
FROM JobData
WHERE location_id
IN (SELECT id FROM Location
WHERE state IN
(SELECT * FROM (SELECT state FROM state_data ORDER BY tax_rate ASC LIMIT 2) AS state_table);
```

```

1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link
4   FROM JobData WHERE location_id IN (SELECT id FROM Location WHERE state IN
5     (SELECT * FROM (SELECT state FROM state_data ORDER BY tax_rate ASC LIMIT 2) AS state_table));

```

100% 75:5

Result Grid Filter Rows: Search Export:

title	description	date_posted	link
Machine Learning Intern (Summer 2023)	Company Description Dropbox is a leading global collaboration platform that's t...	2022-11-19	https://www.linkedin.com/jobs/view/mac
Spring Intern, Pandora Curation - Part-Time	Who We Are SiriusXM and its brands (Pandora, Stitcher, SXM Media, AdsWizz,...	2022-11-30	https://www.linkedin.com/jobs/view/sprin
Intern, Membership & Industry Relations (Nashville Chapter)	Internship Details SPRING INTERNSHIP APPLICATION DEADLINE FOR STUD...	2022-11-03	https://www.linkedin.com/jobs/view/inte
Data Governance Intern (Spring 2023)	Description This internship can be remote, but candidates must reside in either...	2022-11-16	https://www.linkedin.com/jobs/view/data
Clearloop Spring 2023 Internships	Clearloop Spring 2023 Internships Application: https://www.surveymonkey.com/r/ ...	2022-11-22	https://www.linkedin.com/jobs/view/clea
Summer 2023 Internships in Clean Energy: Trades, Law, Finance, Environmental Engin...	IntWork is recruiting paid Environmental Interns for Spring (January-May 2023)...	2022-12-01	https://www.linkedin.com/jobs/view/sumi
Sales & Business Development Intern - Summer 2023	We heard you knock! Internship Learning Outcomes As a Sales intern, you will w...	2022-11-18	https://www.linkedin.com/jobs/view/sale
Machine Learning Intern (Summer 2023)	Company Description Dropbox is a leading global collaboration platform that's t...	2022-11-19	https://www.linkedin.com/jobs/view/mac
Development Intern	Tampa, Job Number: FL #2223-023U Type: Internship Department: Developme...	2022-11-17	https://www.linkedin.com/jobs/view/dev
Information Technology Intern	Spring 2023 Internship Opportunity Libbey is offering an IT Internship for a mo...	2022-11-16	https://www.linkedin.com/jobs/view/infor
Machine Learning Intern (Summer 2023)	Company Description Dropbox is a leading global collaboration platform that's t...	2022-11-19	https://www.linkedin.com/jobs/view/mac
Summer Intern - Strategic Sourcing	Sunoco, L.P., the nation's largest fuel distribution company, is looking for interns t...	2022-11-08	https://www.linkedin.com/jobs/view/sumi
Knowledge Management Internship	WHAT MAKES US A GREAT PLACE TO WORK We are proud to be consistent! ...	2022-11-26	https://www.linkedin.com/jobs/view/kno
2023 Summer Internship Program - Sales, Trading & Debt Underwriting	Piper Sandler is currently seeking an intern for Summer 2022 for our Sales, Trad...	2022-11-17	https://www.linkedin.com/jobs/view/2023

6. Select jobs at top 3 locations with low cost of living.

```

SELECT title, description, date_posted, link
FROM JobData WHERE location_id IN
(SELECT * FROM (SELECT id      FROM Location ORDER BY cost_of_living_index ASC LIMIT 3) AS location_table);

```

100% 20:3

Result Grid Filter Rows: Search Export:

```

1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link FROM JobData WHERE location_id IN
4   (SELECT * FROM (SELECT id FROM Location ORDER BY cost_of_living_index ASC LIMIT 3) AS location_table);

```

100% 20:3

Result Grid Filter Rows: Search Export:

title	description	date_posted	link
International Marketing Partnerships Intern – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-30	https://www.linkedin.com/jobs/view/int
Social Media Intern, Digital Marketing – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-24	https://www.linkedin.com/jobs/view/so
Global Digital Marketing Intern – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-30	https://www.linkedin.com/jobs/view/glo
Global Creative Content Intern – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-30	https://www.linkedin.com/jobs/view/glc
Marketing Procurement Intern – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-12-01	https://www.linkedin.com/jobs/view/mar
Data Science Intern, Theatrical Marketing – Spring 2023	Spe Intern The Sony Pictures Entertainment Internship program offers a unique oppor...	2022-11-11	https://www.linkedin.com/jobs/view/da
Media & Talent Relations Intern – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-30	https://www.linkedin.com/jobs/view/me
Gaming Shows Social & Digital Intern – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-24	https://www.linkedin.com/jobs/view/ga
Global Scripted Development and Programming Intern, SPT – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-14	https://www.linkedin.com/jobs/view/glc
Business Analysis Intern, Production & Studio Technology Services – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-24	https://www.linkedin.com/jobs/view/bu
Data Science Intern, Theatrical Marketing - Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-14	https://www.linkedin.com/jobs/view/da
Special Investigations Intern, Legal – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-25	https://www.linkedin.com/jobs/view/spi
Security, Safety & Sustainability Intern - Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-05	https://www.linkedin.com/jobs/view/sei
U.S. Corporate Development MBA Intern, Zoic Labs	Corporate Development MBA Intern About Zoic Labs Zoic Labs is an advanced v...	2022-10-26	https://www.linkedin.com/jobs/view/u-s
Legal Intern, Sony Pictures Animation – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique opportunity...	2022-11-16	https://www.linkedin.com/jobs/view/leg
Global Exhibitor Partnerships Intern – Spring 2023	The Sony Pictures Entertainment Internship program offers a unique oportunity...	2022-11-30	https://www.linkedin.com/jobs/view/di

7. Select jobs from companies with size -> 51 to 200 Employees

```

SELECT title, description, date_posted, link
FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE size='51 to 200 Employees');

```

```

1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link FROM JobData WHERE company_id IN
4   (SELECT id FROM Company WHERE size='51 to 200 Employees');

```

100% 1:4

Result Grid Filter Rows: Search Export:

title	description	date_posted	link
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=108&ao=1110586&s=58&guid=00000184cb3b65688ef6df5f
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=709&ao=1110586&s=58&guid=00000184cb4159fb9333e81
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=809&ao=1110586&s=58&guid=00000184cb42705d886090
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=909&ao=1110586&s=58&guid=00000184cb4397b7855b0f7
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1010&ao=1110586&s=58&guid=00000184cb44b530a0f1e6
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1110586&s=58&guid=00000184cb45e0db9fb1f1
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1210&ao=1110586&s=58&guid=00000184cb4707b0a71c5f
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1310&ao=1110586&s=58&guid=00000184cb4822bf52391
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1610&ao=1110586&s=58&guid=00000184cb49b8baec32t
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1710&ao=1110586&s=58&guid=00000184cb4ce3faab2b86
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1810&ao=1110586&s=58&guid=00000184cb4e1243a3aaet
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1910&ao=1110586&s=58&guid=00000184cb4f43c5a94c35i
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=2010&ao=1110586&s=58&guid=00000184cb5087a7ac9c6c
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=2010&ao=1110586&s=58&guid=00000184cb5087a7ac9c6c

8.Select jobs from Apple.

```

SELECT title, description, date_posted, link
FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE name='Apple');

```

Result Grid Filter Rows: Search Export:

title	description	date_posted	link
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1168&ao=1136043&s=58&guid=00000184cb3b65688ef6df5c
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=717&ao=1136043&s=58&guid=00000184cb4159fb9333e81
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=817&ao=1136043&s=58&guid=00000184cb42705d886090
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=917&ao=1136043&s=58&guid=00000184cb4397b7855b0f7
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1016&ao=1136043&s=58&guid=00000184cb44b530a0f1e6
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1116&ao=1136043&s=58&guid=00000184cb45e0db9fb1f1
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1216&ao=1136043&s=58&guid=00000184cb4707b0a71c5f
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1316&ao=1136043&s=58&guid=00000184cb4822bf52391
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1516&ao=1136043&s=58&guid=00000184cb49b8baec32t
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1616&ao=1136043&s=58&guid=00000184cb4bb1ead15b6
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1716&ao=1136043&s=58&guid=00000184cb4ce3faab2b86
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1816&ao=1136043&s=58&guid=00000184cb4e1243a3aaet
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1916&ao=1136043&s=58&guid=00000184cb4f43c5a94c35i
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=2016&ao=1136043&s=58&guid=00000184cb5087a7ac9c6c
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... HULL		https://www.glassdoor.com/partner/jobListing.htm?pos=2116&ao=1136043&s=58&guid=00000184cb51d5e29ac44t

9.Select internships based in Texas.

```

SELECT title, description, date_posted, link FROM JobData
WHERE employmentType = 'Internship' AND
location_id IN (SELECT id FROM Location WHERE state='TX');

```

```
1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link FROM JobData
4 WHERE employmentType = 'Internship' AND
5 location_id IN (SELECT id FROM Location WHERE state='TX');
```

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Result Grid Filter Rows: Search Export:

title	description	date_posted	link
Intern Intern	This position is for an internship within... This position is for an internship within...	2022-11-04 2022-11-04	https://www.linkedin.com/jobs/view/intern-at-capital-farm-credit-3345754909?refId=EeYsmoptSI7PcE8pcBMoA%3
Vertex Summer Internship, Protein Sciences + Pharm...	Job Description Becoming a Protein Sci...	2022-12-01	https://www.linkedin.com/jobs/view/vertex-summer-internship-protein-sciences-%2B-pharmacology-at-vertex-pharm
Vertex Summer Internship, DCAT + Machine Learnin...	Job Description Becoming a DCAT +...	2022-12-01	https://www.linkedin.com/jobs/view/vertex-summer-internship-dcat-%2B-machine-learning-san-diego-ca-at-vertex-pl
Marketing Intern - Commercial Real Estate	Marketing Intern Northmarg - San Dieg...	2022-10-30	https://www.linkedin.com/jobs/view/marketing-intern-commercial-real-estate-at-northmarg-33698270247?refId=LGPp
Production and Supply Chain Intern - Summer 2023	Introduction to Shield AI Shield AI's mis...	2022-11-14	https://www.linkedin.com/jobs/view/production-and-supply-chain-intern-summer-2023-at-shield-ai-3357266725?refId=LCfC
HR Internship - Spring 2023	Advanced Behavioral Health, Inc. is loo...	2022-11-03	https://www.linkedin.com/jobs/view/hr-internship-spring-2023-at-advanced-behavioral-health-3344530166?refId=%2
Marketing Internship - Spring 2023	Advanced Behavioral Health, Inc. is loo...	2022-11-08	https://www.linkedin.com/jobs/view/marketing-internship-spring-2023-at-advanced-behavioral-health-3351632813?refId=%2
Intern the Otsuka Way: Data and Analytics (Data Tec...	Otsuka is a dynamic and vibrant organi...	2022-11-10	https://www.linkedin.com/jobs/view/intern-the-otsuka-way-data-and-analytics-data-technologies-analytics-solution-ot
Technology Rotational Development Program Interns...	At Bristol Myers Squibb, we are inspire...	2022-10-17	https://www.linkedin.com/jobs/view/technology-rotational-development-program-internship-summer-2023-at-bristol-m
Powertrain Calibration Engineering Internship (Spring...	At Roush, we fuse technology and engi...	2022-11-07	https://www.linkedin.com/jobs/view/powertrain-calibration-engineering-internship-spring-term-2023-at-roush-335027
Intern -- Electrical Engineer	Sargent & Lundy is one of the most exp...	2022-11-19	https://www.linkedin.com/jobs/view/intern-electrical-engineer-at-sargent-lundy-3297473649?refId=EeYsmoptSI7Pc
Environmental Engineering Internship	This is an intern position for the upcomi...	2022-11-30	https://www.linkedin.com/jobs/view/environmental-engineering-internship-at-steel-dynamics-inc-3379358818?refId=Ib
Adolescent Internships Summer 2023	Intern Description: This position requires a...	2022-11-06	https://www.linkedin.com/jobs/view/adolescent-internships-summer-2023-at-the-arts-club-new-york-3374299000?refId=Ia

10. Select jobs from companies with revenue -> 1to5 million

```
SELECT title, description, date_posted, link
FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE revenue='$1 to $5 million (USD)');
```

```
1 • USE ai_jobs_database;
2
3 • Select * from company;
4
5 • SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM
6 Company WHERE revenue='$1 to $5 million (USD)');
```

100% 16:5

Result Grid Filter Rows: Search Export:

title	description	date_posted	link
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=117&ao=1136043&s=58&guid=00000184cb3b65688ef6df59
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=7188&ao=1136043&s=58&guid=00000184cb4159fb9333e81
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=8188&ao=1136043&s=58&guid=00000184cb42705d860907
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=9188&ao=1136043&s=58&guid=00000184cb4397b7855b0f7
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=9188&ao=1136043&s=58&guid=00000184cb4397b7855b0f7
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1023&ao=1136043&s=58&guid=00000184cb446530af1e6
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1123&ao=1136043&s=58&guid=00000184cb45e0dbf9bf1f
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1223&ao=1136043&s=58&guid=00000184cb4707a071c59
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1323&ao=1136043&s=58&guid=00000184cb4822bf52391
Data Scientist (C2C not available)	No C2C candidates can be supported....	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1423&ao=1136043&s=58&guid=00000184cb495c538955c7

11. Select jobs from companies with ratings >= 4.0

```
SELECT title, description, date_posted, link
FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE rating>=4.0);
```

```
1 • USE ai_jobs_database;
2
3 • Select * from company;
4
5 • SELECT title, description, date_posted, link
6   FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE rating>=4.0)
```

Result Grid				
	title	description	date_posted	link
▶	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=103&ao=110586&s=58&guid=00000184cb365688ef6df5
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=804&ao=110586&s=58&guid=00000184cb2705d886090
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=904&ao=110586&s=58&guid=00000184cb4397b78550f7
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1004&ao=110586&s=58&guid=00000184cb45b530a0fe1
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1104&ao=110586&s=58&guid=00000184cb45e0bd9fb1ff
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1204&ao=110586&s=58&guid=00000184cb707b0a71c5
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1304&ao=110586&s=58&guid=00000184cb4822fa52391
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1404&ao=110586&s=58&guid=00000184cb495c38955c7
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1504&ao=110586&s=58&guid=00000184cb49aebac32t
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1604&ao=110586&s=58&guid=00000184cb4bbaef1d5b
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1704&ao=110586&s=58&guid=00000184cb4c3faab2b86
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1804&ao=110586&s=58&guid=00000184cb4d1243aaeaf
	2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1904&ao=110586&s=58&guid=00000184cb4d3c5a94c35

12. Select jobs with salary > 100000.

```
SELECT title, description, date_posted, link  
FROM JobData WHERE id IN (SELECT job_id FROM derived_data WHERE value >100000 and category='Salary');
```

```
1 • USE ai_jobs_database;
2
3 • Select * from company;
4
5 • SELECT title, description, date_posted, link
6 FROM JobData WHERE id IN (SELECT job_id FROM derived_data WHERE value>10000 AND category='salary')
```

Result Grid				
	title	description	datePosted	link
▶ Intern	Breakwater Strategy, a boutique strategy consulting firm based in Boston, MA is seeking an enthusiastic intern to support our growing team.	Breakwater Strategy, a boutique strategy consulting firm based in Boston, MA is seeking an enthusiastic intern to support our growing team.	2022-11-22	https://www.linkedin.com/jobs/view/intern-at-breakwater-strategy-3357273629/?refId=Fx4gOWsOlV9%2fbMoUh8l
Programming Intern - Spring 2023	IMT Insurance is now accepting applications for our Spring 2023 Internship Program! We are seeking a highly motivated individual to join our team in Boston, MA.	IMT Insurance is now accepting applications for our Spring 2023 Internship Program! We are seeking a highly motivated individual to join our team in Boston, MA.	2022-11-03	https://www.linkedin.com/jobs/view/programming-intern-spring-2023-at-imt-insurance-3341095584/?refId=%2bQrU%2b
Business Development Intern	Infinity Worlds Inc. is seeking an enthusiastic intern to support our business development team.	Infinity Worlds Inc. is seeking an enthusiastic intern to support our business development team.	2022-11-08	https://www.linkedin.com/jobs/view/business-development-intern-at-infinity-worlds-llc-3342983614/?refId=xw6DfRlh%2b
Development Intern	Southfield, MI Job Number: MI # 2223-10001	Southfield, MI Job Number: MI # 2223-10001	2022-11-08	https://www.linkedin.com/jobs/view/development-intern-at-american-lung-association-3383219096/?refId=e0h3Qlrf%2b
Spring Intern, Audience Development - Part-time	Who We Are SiriusXM and its brands (Part-time)	Who We Are SiriusXM and its brands (Part-time)	2022-11-30	https://www.linkedin.com/jobs/view/spring-intern-audience-development-part-time-at-stitcher-3343564648/?refId=e0f%2b
Summer Internship 2023 - Software Engineering - Full-time	Why engineering at Stryker? At Stryker, we believe that every engineer has the potential to make a difference. Our mission is to help people live better lives through medical innovation.	Why engineering at Stryker? At Stryker, we believe that every engineer has the potential to make a difference. Our mission is to help people live better lives through medical innovation.	2022-10-14	https://www.linkedin.com/jobs/view/summer-internship-2023-software-engineering-florida-at-stryker-3351056113/?refId=f0e%2b
Data Intelligence Internship [Summer 2023]	Cohen & Company Certified Public Accountants, Inc.	Cohen & Company Certified Public Accountants, Inc.	2022-10-23	https://www.linkedin.com/jobs/view/data-intelligence-internship-summer-2023-at-cohen-company-3360945272/?refId=f0d%2b
Development Intern	Summary Title:Development Intern ID:C...	Summary Title:Development Intern ID:C...	2022-10-28	https://www.linkedin.com/jobs/view/development-intern-at-grubb-properties-3370194775/?refId=ud7W3tmQhOx%2b
User Experience Intern- OrangeWorks (Spring Semester)	POSITION PURPOSE The OrangeWork...	POSITION PURPOSE The OrangeWork...	2022-11-15	https://www.linkedin.com/jobs/view/user-experience-intern-orangeworks-spring-semester-at-the-home-depot-3359170011/?refId=L%2bF0Xl6S9haGe%2b
Data Intelligence Internship [Summer 2023]	Cohen & Company Certified Public Accountants, Inc.	Cohen & Company Certified Public Accountants, Inc.	2022-10-23	https://www.linkedin.com/jobs/view/data-intelligence-internship-summer-2023-at-cohen-company-3360942499/?refId=f0d%2b
Internship	VW. Two letters. Endless opportunities....	VW. Two letters. Endless opportunities....	2022-11-16	https://www.linkedin.com/jobs/view/internship-at-volkswagen-of-america-inc-3359175011/?refId=L%2bF0Xl6S9haGe%2b
Data Intelligence Internship [Summer 2023]	Cohen & Company Certified Public Accountants, Inc.	Cohen & Company Certified Public Accountants, Inc.	2022-10-24	https://www.linkedin.com/jobs/view/data-intelligence-internship-summer-2023-at-cohen-company-3361365649/?refId=f0d%2b
Intern	Overview NISA Investment Advisors, LLC	Overview NISA Investment Advisors, LLC	2022-10-18	https://www.linkedin.com/jobs/view/intern-at-nisa-investment-advisors-llc-3356945749/?refId=Fx4gOWsOlV9%2fbNj%2b
Stryker, Summer Internship 2023 - Software Engineering - Full-time	This role is with Stryker. WayUp is part...	This role is with Stryker. WayUp is part...	2022-11-24	https://www.linkedin.com/jobs/view/stryker-summer-internship-2023-software-engineering-application-via-wayup-at-stryker-3356945749/?refId=Fx4gOWsOlV9%2fbNj%2b
Spring Intern, Audience Development - Part-time	Who We Are SiriusXM and its brands (P...	Who We Are SiriusXM and its brands (P...	2022-11-30	https://www.linkedin.com/jobs/view/spring-intern-audience-development-part-time-at-stitcher-3343564518/?refId=e0f%2b
Development Intern	New York, Job Number: NYC # 2223-02...	New York, Job Number: NYC # 2223-02...	2022-11-17	https://www.linkedin.com/jobs/view/development-intern-at-american-lung-association-3363827714/?refId=w%2bF0Bn%2b
Human Resources Recruitment Internship	Museum of Science, Boston www.mos.org	Museum of Science, Boston www.mos.org	2022-11-18	https://www.linkedin.com/jobs/view/human-resources-recruitment-internship-at-museum-of-science-3364120981/?refId=f0d%2b
Intern	Infinity Worlds Inc. is seeking an enthusiastic...	Infinity Worlds Inc. is seeking an enthusiastic...	2022-11-21	https://www.linkedin.com/jobs/view/intern-at-infinity-worlds-llc-3363413595/?refId=%2F32c9QhSS2AddzRTQmOrtg%2b

13. Select jobs where skill = Python.

```
SELECT title, description, date_posted, link  
FROM JobData WHERE id IN (SELECT id FROM derived_data WHERE category='Skills' AND value like '%python%');
```

```

1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link
4 FROM JobData WHERE id IN (SELECT id FROM derived_data WHERE category='Skills' AND value LIKE '%python%');

```

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Result Grid Filter Rows: Search Export: Fetch rows:

title	description	date_posted	link
Software Engineer Summer Internship	About Coda Coda started with an obser...	2022-11-12	https://www.linkedin.com/jobs/view/software-engineer-summer-internship-at-coda-3325646911?refId=aAGZNEIJKCSDnIDb6Q
Social Media Internship	Foundation Is Seeking Spring 2023 Soc...	2022-11-29	https://www.linkedin.com/jobs/view/social-media-internship-at-foundation-3373034117?refId=aAGZNEIJKCSZdNIDI
International Marketing Partnerships Intern – Spring 2...	The Sony Pictures Entertainment Intern...	2022-11-30	https://www.linkedin.com/jobs/view/international-marketing-partnerships-intern-%E2%80%93-spring-2023-at-sony-p
Product Manager Intern	At PayPal (NASDAQ: PYPL), we believ...	2022-12-01	https://www.linkedin.com/jobs/view/product-manager-intern-at-paypal-3273299426?refId=aAGZNEIJKCSZdNIDb6Q
Product Manager Intern	At PayPal (NASDAQ: PYPL), we believ...	2022-12-01	https://www.linkedin.com/jobs/view/product-manager-intern-at-paypal-32806052527?refId=aAGZNEIJKCSZdNIDb6Q
Intern, Revenue Technology - Data Analytics (Summe...	United States, Georgia, Atlanta Informat...	2022-11-23	https://www.linkedin.com/jobs/view/intern-revenue-technology-data-analytics-summer-2023-at-delta-air-lines-33401
Software Engineer Intern (Star Wars Jedi: Survivor)	Electronic Arts is looking for high perf...	NULL	https://www.linkedin.com/jobs/view/software-engineer-intern-star-wars-jedi-survivor-at-respawn-entertainment-3323
Public Relations Intern	SEQUEL is currently accepting applicati...	2022-11-02	https://www.linkedin.com/jobs/view/public-relations-intern-at-sequel-3341175637?refId=aAGZNEIJKCSZdNIDb6Q
Nike Applied Analytics Graduate Internship	Become a Part of the NIKE, Inc. Team...	2022-12-01	https://www.linkedin.com/jobs/view/nike-applied-analytics-graduate-internship-at-nike-3353725631?refId=aAGZNEt
Security Engineering Intern, Security, Privacy, Assura...	Netflix is the world's leading streaming...	2022-11-16	https://www.linkedin.com/jobs/view/security-engineering-security-privacy-assurance-at-netflix-3356614039?refId=aAGZNEt
Social Media Intern, Digital Marketing – Spring 2023	The Sony Pictures Entertainment Intern...	2022-11-24	https://www.linkedin.com/jobs/view/social-media-intern-digital-marketing-%E2%80%93-spring-2023-at-sony-picture
Full Stack Software Engineer Intern - Summer Interns...	Fluke Corporation is looking for full stac...	NULL	https://www.linkedin.com/jobs/view/full-stack-software-engineer-intern-summer-internship-program-2023-at-fluke-co
Global Digital Marketing Intern – Spring 2023	The Sony Pictures Entertainment Intern...	2022-11-30	https://www.linkedin.com/jobs/view/global-digital-marketing-intern-%E2%80%93-spring-2023-at-sony-pictures-enter
2023 Summer Internship	***Please email your cover letter and re...	2022-11-15	https://www.linkedin.com/jobs/view/2023-summer-internship-at-raider-hill-3361254054?refId=aAGZNEIJKCSZdNIDI
Spring 2023: Cybersecurity Operations Intern (Under...	Introduction iRobot Corporation, with a...	2022-11-11	https://www.linkedin.com/jobs/view/spring-2023-cybersecurity-operations-intern-undergraduate-at-irobot-332458593
Data Science, Graduate Internship	Lowe's Summer Internship Program Ov...	2022-11-23	https://www.linkedin.com/jobs/view/data-science-graduate-internship-at-lowes-companies-inc-3276052622?refId=aAGZNEt
Brand Marketing Intern (Winter/Spring 2023)	Join the leader in entertainment innovat...	2022-11-26	https://www.linkedin.com/jobs/view/brand-marketing-intern-winter-spring-2023-at-dolby-laboratories-3284579475?refId=aAGZNEt

14. Select jobs related to Software Development.

```

SELECT title, description, date_posted, link
FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE industry='Software Development');

```

```

1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link
4 FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE industry='Software Development');

```

100% 97:4

Result Grid Filter Rows: Search Export: Fetch rows:

title	description	date_posted	link
Software Engineer Summer Internship	About Coda Coda started with an obser...	2022-11-12	https://www.linkedin.com/jobs/view/software-engineer-summer-internship-at-coda-3325646911?refId=aAGZNEIJKCSDnIDb6Q
Internship Spring/Summer 2023 - Software Engineer,...	Why us? Blockchain technology is enab...	2022-11-12	https://www.linkedin.com/jobs/view/internship-spring-summer-2023-software-engineer-tools-at-certik-3325275277?refId=aAGZNEIJKCSZdNIDI
Legal Intern	Sony Corporation of America , located i...	2022-12-01	https://www.linkedin.com/jobs/view/legal-intern-at-sony-3344899340?refId=%2BQu%2FYYyzv1AYJq7TA%3D%refId=aAGZNEIJKCSZdNIDI
Winter/Spring - Jr. Executive Sales Internship	The Paycom Junior Executive Internshi...	2022-11-14	https://www.linkedin.com/jobs/view/winter-spring-jr-executive-sales-internship-at-paycom-3353610652?refId=e0h3Q
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379446607?refId=bl
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379445761?refId=X
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379447135?refId=jl
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379445760?refId=jb
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379441961?refId=q
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-337944889?refId=w
Multiple Openings-Engineering Development Group I...	About This Program MathWorks has a...	2022-11-16	https://www.linkedin.com/jobs/view/multiple-openings-engineering-development-group-internship-at-mathworks-278
Intern - Business Development	At Cadence, we hire and develop leade...	2022-11-17	https://www.linkedin.com/jobs/view/intern-business-development-at-cadence-design-systems-322804872?refId=Sv
Design Engineering Intern	At Cadence, we hire and develop leade...	2022-11-18	https://www.linkedin.com/jobs/view/design-engineering-intern-at-cadence-design-systems-3327677253?refId=5KHr
Design Engineering Intern	At Cadence, we hire and develop leade...	2022-11-18	https://www.linkedin.com/jobs/view/design-engineering-intern-at-cadence-design-systems-3327679184?refId=OlxP

15. Select jobs related to Software Development and skill as Python

```

SELECT title, description, date_posted, link
FROM JobData WHERE company_id
IN (SELECT id FROM Company WHERE industry='Software Development')
AND id IN
(SELECT id FROM derived_data WHERE category='Skills' AND value like '%python%');

```

```

1 • USE ai_jobs_database;
2
3 • SELECT title, description, date_posted, link
4   FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE
5     industry='Software Development') AND id IN (SELECT id FROM derived_data WHERE
6       category='Skills' AND value LIKE '%python%');

```

100% 9:5

Result Grid Filter Rows: Search Export:

title	description	date_posted	link
► Software Engineer Summer Internship Internship Spring/Summer 2023 - Software Engineer,...	About Coda Coda started with an obser... Why us? Blockchain technology is enab... Legal Intern	2022-11-12	https://www.linkedin.com/jobs/view/software-engineer-summer-internship-at-coda-3325646911?refId=aAGZNEtJKC
Winter/Spring - Jr. Executive Sales Internship	Sony Corporation of America , located i... About The Team We are hiring MBA int...	2022-11-01	https://www.linkedin.com/jobs/view/legal-intern-at-sony-3344899340?refId=%2BQrl%2FrjYyzv1AVJqjZTA%3D
MBA Intern, Strategy & Operations - Summer 2023	The Paycom Junior Executive Internshi... About The Team We are hiring MBA int...	2022-11-14	https://www.linkedin.com/jobs/view/winter-spring-jr-executive-sales-internship-at-paycom-3353610652?refId=eoH3C
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int... About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379446607?refId=b
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int... About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-337944761?refId=d
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int... About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-337944889?refId=e
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int... About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-337944983?refId=f
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int... About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379447135?refId=g
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int... About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379445760?refId=j
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int... About The Team We are hiring MBA int...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-3379441961?refId=e
MBA Intern, Strategy & Operations - Summer 2023	About The Team We are hiring MBA int... About This Program MathWorks has a ...	2022-11-29	https://www.linkedin.com/jobs/view/mba-intern-strategy-operations-summer-2023-at-doordash-337944889?refId=v
Multiple Openings-Engineering Development Group i...	About This Program MathWorks has a ... At Cadence, we hire and develop lead...	2022-11-16	https://www.linkedin.com/jobs/view/multiple-openings-engineering-development-group-internship-at-mathworks-278
Intern - Business Development	At Cadence, we hire and develop lead...	2022-11-17	https://www.linkedin.com/jobs/view/intern-business-development-at-cadence-design-systems-322804827?refId=S
Design Engineering Intern	At Cadence, we hire and develop lead...	2022-11-18	https://www.linkedin.com/jobs/view/design-engineering-intern-at-cadence-design-systems-3227677253?refId=5KHf
Design Engineering Intern	At Cadence, we hire and develop lead...	2022-11-18	https://www.linkedin.com/jobs/view/design-engineering-intern-at-cadence-design-systems-3327679184?refId=OxP
Design and Product Engineering Intern	At Cadence, we hire and develop lead...	2022-11-16	https://www.linkedin.com/jobs/view/design-and-product-engineering-intern-at-cadence-design-systems-332623247e
Design Engineering Intern	At Cadence, we hire and develop lead...	2022-11-18	https://www.linkedin.com/jobs/view/design-engineering-intern-at-cadence-design-systems-3327679183?refId=52SH
Marketing Analytics Intern, Demand Generation	We are actively looking for a Marketi...	2022-11-18	https://www.linkedin.com/jobs/view/marketing-analytics-intern-demand-generation-at-grafana-labs-3305316292?refId=r
Marketing Intern (Spring 2023, Remote)	Overview The Marketing Intern particip...	2022-11-18	https://www.linkedin.com/jobs/view/marketing-intern-spring-2023-remote-at-vectorworks-3343967920?refId=jXZK

16. Select Apple jobs with title data scientist

```

SELECT title, description, date_posted, link
FROM JobData WHERE title LIKE '%AI/ML%'
AND company_id IN (SELECT id FROM Company WHERE name='Apple');

```

100% 38:4

Result Grid Filter Rows: Search Export:

title	description	date_posted	link
► The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=116&ao=1136043&s=58&guid=00000184cb3b6588ef6df59
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=717&ao=1136043&s=58&guid=00000184cb4159fb9333e81
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=817&ao=1136043&s=58&guid=00000184cb42705d860907
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=917&ao=1136043&s=58&guid=00000184cb4397b7855b0f7
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1016&ao=1136043&s=58&guid=00000184cb440530a0f1e6
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1116&ao=1136043&s=58&guid=00000184cb45e0db9fbff
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1216&ao=1136043&s=58&guid=00000184cb47070a71c59
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1316&ao=1136043&s=58&guid=00000184cb48229fa52391
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1516&ao=1136043&s=58&guid=00000184cb49b8baec32b
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1616&ao=1136043&s=58&guid=00000184cb4bb1ead15b8
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1716&ao=1136043&s=58&guid=00000184cb4ce3faab286f
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1816&ao=1136043&s=58&guid=00000184cb4e1243a3eaat
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=1916&ao=1136043&s=58&guid=00000184cb4f43c5a94c35
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=2016&ao=1136043&s=58&guid=00000184cb5087a7ac960
The Scoop - AI/ML Opportunities	Summary Posted: Oct 12, 2022 Role N... NULL		https://www.glassdoor.com/partner/jobListing.htm?pos=2116&ao=1136043&s=58&guid=00000184cb51d5e29ac44b

17. Select Data Science EnhanceIT jobs in San Francisco.

```

SELECT title, description, date_posted, link
FROM JobData WHERE title LIKE '%Data Scientist%'
AND company_id in (SELECT id FROM company WHERE name='Enhance IT')
and location_id in (SELECT id FROM Location WHERE city = 'San Diego');

```

Query 1 ai_jobs_database Administration - Server Status SQL File 3*

```

27 •  SELECT title, description, date_posted, link FROM JobData WHERE title LIKE '%Data Scientist%'
28 AND company_id IN (SELECT id FROM company WHERE name='Enhance IT')
29 AND location_id IN (SELECT id FROM Location WHERE city = 'San Diego');
30
31
32
33
34
35
36
37
38
39
    
```

Result Grid Filter Rows: Q Search Export:

title	description	date_posted	link
Junior Data Scientist	data scientist seeking grow enhance technical c...	2022-11-24	https://www.glassdoor.com/partner/jobListing.htm...
Junior Data Scientist	data scientist seeking grow enhance technical c...	2022-11-24	https://www.glassdoor.com/partner/jobListing.htm...
Junior Data Scientist	data scientist seeking grow enhance technical c...	2022-11-24	https://www.glassdoor.com/partner/jobListing.htm...
Junior Data Scientist	data scientist seeking grow enhance technical c...	2022-11-24	https://www.glassdoor.com/partner/jobListing.htm...
Junior Data Scientist	data scientist seeking grow enhance technical c...	2022-11-24	https://www.glassdoor.com/partner/jobListing.htm...

18. Select associate jobs in Boston

```

SELECT title, description, date_posted, link, location_id
FROM JobData WHERE seniority_level='Associate' and location_id IN (SELECT id FROM Location WHERE city='New York City
Metropolitan Area');
    
```

Query 1 ai_jobs_database Administration - Server Status SQL File 3*

```

27 •  SELECT title, description, date_posted, link, location_id
28 FROM JobData WHERE seniority_level='Associate' and location_id IN (SELECT id FROM Location WHERE city='New York City Metropolitan Area');
29
30
31
32
33
34
35
36
37
38
39
    
```

Result Grid Filter Rows: Q Search Export:

title	description	date_posted	link	loc...
International Marketing Pa...	sony picture entertainment internship program o...	2022-11-30	https://www.linkedin.com/jobs/view/international... 511	
Social Media Intern, Digital...	sony picture entertainment internship program o...	2022-11-24	https://www.linkedin.com/jobs/view/social-media... 511	
Global Digital Marketing In...	sony picture entertainment internship program o...	2022-11-30	https://www.linkedin.com/jobs/view/global-digital... 511	
Global Creative Content In...	sony picture entertainment internship program o...	2022-11-30	https://www.linkedin.com/jobs/view/global-creati... 511	
Marketing Procurement Int...	sony picture entertainment internship program o...	2022-12-01	https://www.linkedin.com/jobs/view/marketing-pr... 511	

19. Searching for Jobs where seniority level is Mid-Senior level and salary ranges between 50000 and 100000

```

SELECT title, description, date_posted, link
FROM JobData WHERE seniority_level = 'Mid-Senior level'
AND id IN (SELECT job_id FROM derived_data WHERE Category = 'Salary'
AND value BETWEEN 50000 and 100000);
    
```

The screenshot shows the MySQL Workbench interface. In the top tab bar, 'Query 1' is selected, and the database is set to 'ai_jobs_database'. The SQL editor contains the following query:

```

27 •  SELECT title, description, date_posted, link
28   FROM JobData WHERE seniority_level = 'Mid-Senior level'
29   AND id IN (SELECT job_id FROM derived_data WHERE Category = 'Salary'
30   AND value BETWEEN 50000 and 100000);
31
32
33
34
35
36
37
38
  
```

The result grid below shows one row of data:

title	description	date_posted	link
Business Data & Analytics... basic tanium looking curious driven hardworking...	2022-11-16		https://www.linkedin.com/jobs/view/business-data-analyst/

20. Select jobs from apple where job description contains H1B.

```
'SELECT title, description, date_posted, link
FROM JobData WHERE description LIKE '%H1B%'
AND company_id IN (SELECT id FROM Company WHERE name='Apple');
```

![title](images/query20.png)

View Queries

1. Select jobs based in Boston

```
CREATE VIEW jobs_boston AS
SELECT title, description, date_posted, link FROM JobData WHERE location_id = (SELECT id FROM Location WHERE city='Boston');
```

The screenshot shows the MySQL Workbench interface. In the top tab bar, 'Query 1' is selected, and the database is set to 'Local instance MySQL57'. The SQL editor contains the following code:

```

136 •  CREATE VIEW jobs_boston AS
137   SELECT title, description, date_posted, link FROM JobData WHERE
138   location_id = (SELECT id FROM Location WHERE city='Boston');
139
140 •  select * from jobs_boston;
141
142 •  drop table jobData;
143
144
145
  
```

The result grid below shows one row of data:

title	description	date_posted	link
Software Engineer-Machine Learning	Your work days are brighter here. At Workday, ...	2022-12-13	https://www.linkedin.com/jobs/view/software-engineer-machine-learning/

2. Select jobs based in Massachusetts

```
CREATE VIEW jobs_ma AS SELECT title, description, date_posted, link FROM JobData WHERE location_id IN (SELECT id FROM Location WHERE
state='MA');
```

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar has sections for Navigator, Schemas, Administration, and Information. The main area shows a query editor with the following SQL code:

```
131     PRIMARY KEY(`skill_id`,`job_id`)
132   );
133
134 •   select * from skills_jobs_data;
135
136 •   CREATE VIEW jobs_ma AS
137   SELECT title, description, date_posted, link FROM JobData
138   WHERE location_id IN (SELECT id FROM Location WHERE state='MA');
139
140 •   select * from jobs_ma;
```

The results grid displays the following data:

	title	description	date_posted	link
▶	Data Analyst	Description We are seeking a certified Data Ana...	2022-12-09	https://www.linkedin.com/jobs/view/da...
	Software Engineer-Machine Learning	Your work days are brighter here. At Workday, ...	2022-12-13	https://www.linkedin.com/jobs/view/so...
	Data Analyst	Data Analyst Job Description: Support data mi...	2022-12-05	https://www.linkedin.com/jobs/view/da...
	Data Analyst	ESG provides consulting services in the areas of...	2022-12-02	https://www.linkedin.com/jobs/view/da...
	Data Analyst	HTC Global Services wants you. Come build new...	2022-12-01	https://www.linkedin.com/jobs/view/da...
	Data Analyst - NLP	Title: Business Intelligence Analyst Position De...	2022-12-02	https://www.linkedin.com/jobs/view/bi-a...
	Data Analyst	HTC Global Services wants you. Come build new...	2022-12-02	https://www.linkedin.com/jobs/view/da...
	Data Analyst	TEKsystems is looking for a strong Data Analyst...	2022-12-05	https://www.linkedin.com/jobs/view/da...
	Senior Data Scientist	DEARBORN PUBLIC HEALTH JOB OPENING – S...	2022-12-06	https://www.linkedin.com/jobs/view/se...
	Project Data Analyst	HTC Global Services wants you. Come build new...	2022-12-05	https://www.linkedin.com/jobs/view/pr...

The bottom status bar shows the duration of the fetch as 22:28 and the date as 14/12/2022.

3. Select Remote jobs

```
CREATE VIEW jobs_remote AS SELECT title, description, date_posted, link FROM JobData WHERE location_id IN (SELECT id FROM Location WHERE city='Remote');
```

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar displays the Navigator, Schemas (public_schema, sakila), and Administration/Schemas/Information panes. The main area contains a SQL editor with the following query:

```
132 } ;
133 •   select * from skills_jobs_data;
135
136 • CREATE VIEW locations_low_tax AS
137     SELECT city FROM Location WHERE state IN
138     (SELECT * FROM (SELECT state FROM state_data ORDER BY tax_rate ASC LIMIT 3) AS state_table);
139
140 • select * from locations_low_tax;
141
```

The results pane shows a Result Grid with the following data:

city
Anchorage
Fairbanks
Gainesville
Homosassa Springs
Jacksonville
Key West
Lake City
Lakeland
Naples
Ocala
Orlando

The status bar at the bottom right shows the date and time as 14/12/2022 22:30, and the system as INTL.

4. Select locations from states with low tax rates

```
CREATE VIEW locations_low_tax AS SELECT city FROM Location WHERE state IN (SELECT * FROM (SELECT state FROM state_data ORDER BY tax_rate ASC LIMIT 3) AS state_table);
```

The screenshot shows the MySQL Workbench interface. On the left, the Navigator pane displays the 'Schemas' section with 'public_schema' and 'sakila' selected. The main workspace shows a list of database objects under 'sakila', including tables like 'person', 'customers', and 'bank_accounts'. A SQL editor window is open with the following code:

```
134 • select * from skills_jobs_data;
135
136 • CREATE VIEW jobs_low_tax AS
137     SELECT title, description, date_posted, link
138     FROM JobData WHERE location_id IN (SELECT id FROM Location
139     WHERE state IN
140         (SELECT * FROM (SELECT state FROM state_data ORDER BY tax_rate ASC LIMIT 2) AS state_table));
141
142 • select * from jobs_low_tax;
143
```

The results of the last query are displayed in a Result Grid:

title	description	date_posted	link
Data Visualization	Description This position is for a Consultant with...	2022-12-01	https://www.linkedin.com/jobs/view/d...
Data Analyst - Operational Excellence	Company Overview KLA is a global leader in div...	2022-12-12	https://www.linkedin.com/jobs/view/d...
Research Lab Specialist Senior	How to Apply A cover letter is required for con...	2022-11-29	https://www.glassdoor.com/partner/o...
Data Analyst	Data Analyst Contract-to-Hire Remote - Based i...	2022-11-30	https://www.linkedin.com/jobs/view/d...
Data Scientist Internship - ML (US)	2022-75205 Asurion Data Science Internship - ...	2022-12-04	https://www.linkedin.com/jobs/view/d...
Data Scientist Internship - OR (US)	2022-75202 Asurion Data Science Internship - ...	2022-12-04	https://www.linkedin.com/jobs/view/d...
Data Scientist Internship - OR (US)	2022-75202 Asurion Data Science Internship - ...	2022-12-04	https://www.linkedin.com/jobs/view/d...
Data Scientist Internship - ML (US)	2022-75205 Asurion Data Science Internship - ...	2022-12-04	https://www.linkedin.com/jobs/view/d...
Business Data Analyst	Public Partnerships LLC supports individuals with...	2022-12-08	https://www.linkedin.com/jobs/view/b...
Principal Data Scientist	Job Family: Data Science Type: Full time Date P...	2022-11-19	https://www.linkedin.com/jobs/view/pr...

The bottom status bar shows the duration of the operation as 100%.

5. Select jobs at location with lowest tax rates

```
CREATE VIEW jobs_low_tax AS SELECT title, description, date_posted, link FROM JobData WHERE location_id IN (SELECT id FROM Location WHERE state IN (SELECT * FROM (SELECT state FROM state_data ORDER BY tax_rate ASC LIMIT 2) AS state_table));
```

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar has sections for Schemas (public_schema, sakila, sys, world), Administration, and Information. The main area displays a query editor with the following SQL code:

```
132 );
133
134 • select * from skills_jobs_data;
135
136 • CREATE VIEW jobs_low_living_cost AS
137     SELECT title, description, date_posted, link FROM JobData
138     WHERE location_id IN (SELECT * FROM
139         (SELECT id FROM Location ORDER BY cost_of_living_index ASC LIMIT 3) AS location_table);
140
141 • select * from jobs_low_living_cost;
```

The Result Grid shows the following data:

	title	description	date_posted	link
▶	Data Scientist	Grammarly is excited to offer a remote-first hyb...	2022-12-02	https://www.linkedin.com/jobs/
	Software Engineer, Machine Learning (Grammar...	Grammarly is excited to offer a remote-first hyb...	2022-12-02	https://www.linkedin.com/jobs/
	Data Analytics Analyst	What Data Analytics contributes to Cardinal He...	2022-12-07	https://www.linkedin.com/jobs/
	Data Analyst	Must-haves: 5 years in enterprise data analys...	2022-12-12	https://www.linkedin.com/jobs/
	Data Analyst I	As a member of the Employee Success Data tea...	2022-11-14	https://www.linkedin.com/jobs/
	Data Analyst	Data Analyst Contract or Contract-To-Hire Re...	2022-11-30	https://www.linkedin.com/jobs/
	Data Analyst, QMS	Join the fight against cancer. Data Analyst, QM...	2022-11-30	https://www.linkedin.com/jobs/
	NGSE Data Scientist	Candidates can be based anywhere in the U.S.	2022-12-02	https://www.linkedin.com/jobs/
	Principal Data Scientist	↳ Principal Data Scientist ↳ HealthTech Start...	2022-12-02	https://www.linkedin.com/jobs/
	Senior Data Analyst	AcuityMD is the first software and data platfor...	2022-12-02	https://www.linkedin.com/jobs/

The bottom status bar shows the duration of the fetch as 100%, the time as 22:48, and the date as 14/12/2022.

6. Select jobs at top 3 locations with low cost of living.

```
CREATE VIEW jobs_low_living_cost AS SELECT title, description, date_posted, link FROM JobData WHERE location_id IN (SELECT id FROM Location ORDER BY cost_of_living_index ASC LIMIT 3) AS location_table);
```

The screenshot shows the MySQL Workbench interface with the following details:

- Schemas:** Local instance MySQL57, public_schema, sakila.
- SQL Editor:** Contains the following SQL code:


```

133
134 • select * from skills_jobs_data;
135
136 • CREATE VIEW jobs_low_living_cost AS
137     SELECT title, description, date_posted, link FROM JobData WHERE
138         location_id IN (SELECT id FROM Location ORDER BY cost_of_living_index ASC LIMIT 3)
139         AS location_table;
140
141 • select * from jobs_low_living_cost;
142
      
```
- Result Grid:** Shows a table with columns: title, description, date_posted, link. The data includes various job titles and their descriptions, posted dates, and links.
- Toolbar:** Includes icons for file operations, search, and database navigation.
- Status Bar:** Shows the duration of the query execution.

7. Select jobs from companies with size > 51 to 200 Employees

```
CREATE VIEW jobs_51_200_emp AS SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE size='51 to 200 Employees');
```

The screenshot shows the MySQL Workbench interface with the following details:

- Schemas:** Local instance MySQL57, public_schema, sakila.
- SQL Editor:** Contains the following SQL code:


```

131
132     PRIMARY KEY(`skill_id`,`job_id`)
133 );
134 • select * from skills_jobs_data;
135
136 • CREATE VIEW jobs_51_200_emp AS
137     SELECT title, description, date_posted, link FROM JobData
138     WHERE company_id IN (SELECT id FROM Company WHERE size='51 to 200 Employees');
139
140 • select * from jobs_51_200_emp;
      
```
- Result Grid:** Shows a table with columns: title, description, date_posted, link. The data includes two job entries from different companies.
- Toolbar:** Includes icons for file operations, search, and database navigation.
- Status Bar:** Shows the duration of the query execution.

8. Select jobs from Apple

```
CREATE VIEW jobs_apple AS SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE name='Apple');
```

The screenshot shows the MySQL Workbench interface. In the top navigation bar, 'Local instance MySQL57' is selected. The left sidebar shows the 'Schemas' tree with 'public_schema' expanded, containing 'Tables', 'Views', 'Stored Procedures', and 'Functions'. Under 'Tables', 'person', 'customers', and 'bank_accounts' are listed. The main query editor window contains the following SQL code:

```

132  );
133
134 • select * from skills_jobs_data;
135
136 • CREATE VIEW jobs_apple AS
137   SELECT title, description, date_posted, link FROM JobData
138   WHERE company_id IN (SELECT id FROM Company WHERE name='Apple');
139
140 • select * from jobs_apple;
141

```

The 'Result Grid' pane below shows the results of the last query, listing various job titles, descriptions, posting dates, and links. The schema 'sakila' is selected in the bottom-left panel.

9. Select internships based in Texas.

```
CREATE VIEW jobs_intern_texas AS SELECT title, description, date_posted, link FROM JobData WHERE employmentType = 'Internship' AND location_id IN (SELECT id FROM Location WHERE state='TX');
```

10. Select jobs from companies with revenue > 1to5 million

```
CREATE VIEW jobs_revenue_1_5 AS SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE revenue='1 to $5 billion (USD)');
```

The screenshot shows the MySQL Workbench interface. The top navigation bar shows 'Local instance MySQL57'. The left sidebar shows the 'Schemas' tree with 'public_schema' expanded, containing 'Tables', 'Views', 'Stored Procedures', and 'Functions'. Under 'Tables', 'person', 'customers', and 'bank_accounts' are listed. The main query editor window contains the following SQL code:

```

129
130
131
132
133
134 • select * from skills_jobs_data;
135
136 • CREATE VIEW jobs_revenue_1_5 AS
137   SELECT title, description, date_posted, link FROM JobData
138   WHERE company_id IN (SELECT id FROM Company WHERE revenue='$1 to $5 billion (USD)');
139
140 • select * from jobs_revenue_1_5;
141
142 • drop table jobdata;
143 • drop view jobs_revenue_1_5;
144

```

The 'Result Grid' pane below shows the results of the last query, listing various job titles, descriptions, posting dates, and links. The schema 'sakila' is selected in the bottom-left panel.

11. Select jobs from companies with ratings >= 4.0

```
CREATE VIEW jobs_rating_4 AS SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE rating>=4.0);
```

```

CREATE TABLE `skill_jobs_data` (
    `skill_id` bigint unique,
    `job_id` bigint unique,
    FOREIGN KEY(`skill_id`) REFERENCES skill_data(`id`),
    FOREIGN KEY(`job_id`) REFERENCES jobdata(`id`),
    PRIMARY KEY(`skill_id`,`job_id`)
);

select * from skills_jobs_data;

CREATE VIEW jobs_rating_4 AS
SELECT title, description, date_posted, link FROM Jobdata WHERE company_id IN (SELECT id FROM Company WHERE rating>=4.0);

select * from jobs_rating_4;

```

The screenshot shows the MySQL Workbench interface with the SQL editor containing the code for creating the 'jobs_rating_4' view. Below the editor is a Result Grid showing several job entries with columns: title, description, date_posted, and link. The status bar at the bottom right indicates the date and time as 14/12/2022 22:59.

12. Select jobs with salary > 100000

```
CREATE VIEW jobs_salary_100k AS SELECT title, description, date_posted, link FROM JobData WHERE id IN (SELECT job_id FROM derived_data WHERE value >100 and category='Salary');
```

```

CREATE TABLE `skill_jobs_data` (
    `skill_id` bigint unique,
    `job_id` bigint unique,
    FOREIGN KEY(`skill_id`) REFERENCES skill_data(`id`),
    FOREIGN KEY(`job_id`) REFERENCES jobdata(`id`),
    PRIMARY KEY(`skill_id`,`job_id`)
);

select * from skills_jobs_data;

CREATE VIEW jobs_salary_100k AS
SELECT title, description, date_posted, link FROM Jobdata WHERE id IN
(SELECT job_id FROM derived_data WHERE value >100 and category='Salary');

select * from jobs_salary_100k;

```

The screenshot shows the MySQL Workbench interface with the SQL editor containing the code for creating the 'jobs_salary_100k' view. Below the editor is a Result Grid showing several job entries with columns: title, description, date_posted, and link. The status bar at the bottom right indicates the date and time as 14/12/2022 23:02.

13. Select jobs where skill = Python

```
CREATE VIEW jobs_python AS SELECT title, description, date_posted, link FROM JobData WHERE id IN (SELECT id from skills_jobs_data where skill_id IN (SELECT id FROM skill_data WHERE skill_name like '%python%'));
```

The screenshot shows the MySQL Workbench interface with the following details:

- Schemas:** Local instance MySQL57, public_schema, sakila.
- Query Editor:** Contains a SQL script to create a view named 'jobs_python'.
- Result Grid:** Displays a table of job listings from the 'JobData' table, filtered by industry ('Software Development').
- Toolbar:** Includes icons for file operations, database management, and scripting.
- Status Bar:** Shows system information like battery level, network, and date/time.

```

131     PRIMARY KEY('skill_id', 'job_id')
132   );
133
134 •   select * from skills_jobs_data;
135
136 •   CREATE VIEW jobs_python AS
137   SELECT title, description, date_posted, link FROM JobData WHERE id
138   IN (select id from skills_jobs_data where skill_id IN (SELECT id FROM skill_data WHERE skill_name like '%python%'));
139
140 •   select * from JobData;
141
142 •   select * from jobs_python;
143
144 •   drop table jobdata;
145 •   drop view jobs_python;
146
147

```

title	description	date_posted	link
NATO CDMS Data Scientist	SimIS Inc seeks a Capability Development Mana...	2022-12-13	https://www.linkedin.com/jobs/view/nato-cdm...
NATO CDMS Data Scientist	SimIS Inc seeks a Capability Development Mana...	2022-12-13	https://www.linkedin.com/jobs/view/nato-cdm...
100% Remote - Data Analyst (Python) Need ...	Our client is looking for Data Analyst for a 3-6 m...	NULL	https://www.linkedin.com/jobs/view/100%25-...
1152 - Jr. Software Engineer (Machine Learning)	Job Description Summary/Objective Digits Te...	2022-11-19	https://www.linkedin.com/jobs/view/1152-jr-s...
2023 Summer Intern - Big Data Analyst, Techno...	2023 Summer Corporate Internship Program - T...	2022-11-19	https://www.linkedin.com/jobs/view/2023-su...
AI Designer/Developer	Role: AI Designer/Developer Location: Irving TX...	2022-12-12	https://www.linkedin.com/jobs/view/ai-design...

14. Select jobs related to Software Development industry

CREATE VIEW jobs_software AS SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE industry='Software Development');

The screenshot shows the MySQL Workbench interface with the following details:

- Schemas:** Local instance MySQL57, public_schema, sakila.
- Query Editor:** Contains a SQL script to create a view named 'jobs_software'.
- Result Grid:** Displays a table of job listings from the 'JobData' table, filtered by industry ('Software Development').
- Toolbar:** Includes icons for file operations, database management, and scripting.
- Status Bar:** Shows system information like battery level, network, and date/time.

```

127     "skill_id" bigint unique,
128     "job_id" bigint unique,
129     FOREIGN KEY("skill_id") REFERENCES skill_data("id"),
130     FOREIGN KEY("job_id") REFERENCES JobData("id"),
131     PRIMARY KEY("skill_id", "job_id")
132   );
133
134 •   select * from skills_jobs_data;
135
136 •   CREATE VIEW jobs_software AS
137   SELECT title, description, date_posted, link FROM JobData WHERE company_id
138   IN (SELECT id FROM Company WHERE industry='Software Development');
139
140 •   select * from JobData;
141
142 •   select * from jobs_software;
143

```

title	description	date_posted	link
Data Scientist	hackajob has partnered with a FinTech compan...	2022-12-06	https://www.linkedin.com/jobs/view/data-scienc...
Python Developer	The client is a fully independent, global manage...	NULL	https://www.linkedin.com/jobs/view/python-deve...
Data Scientist, Data Analytics Engineering	Working at Atlassian Atlassian can hire people i...	NULL	https://www.linkedin.com/jobs/view/data-scienc...
Data Scientist, Data Analytics Engineering	Working at Atlassian Atlassian can hire people i...	NULL	https://www.linkedin.com/jobs/view/data-scienc...
Machine Learning Software Engineer	ML Handson Tensorflow Dev ML pipeline and pr...	NULL	https://www.linkedin.com/jobs/view/machine-lear...
Data Analyst II	Lucid Software is a leader in visual collaborati...	2022-12-09	https://www.linkedin.com/jobs/view/data-analyti...
Data Analyst	Since 2006, CoStrategix has defined and imple...	2022-12-09	https://www.linkedin.com/jobs/view/data-analyti...

15. Select jobs related to Software Development industry and skill as Python

CREATE VIEW jobs_software_python AS SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE industry='Software Development') AND id IN (SELECT id from skills_jobs_data where skill_id IN (SELECT id FROM skill_data WHERE skill_name like '%python%'));

The screenshot shows the MySQL Workbench interface with the following details:

- Schemas:** Local instance MySQL57, public_schema, sakila.
- Code Editor:** SQL pane showing the creation of a view named 'jobs_software_python'. The code includes a foreign key constraint from 'job_id' to 'skill_id' in 'skill_data'.
- Result Grid:** Shows a table with 5 rows of job data, including columns: title, description, date_posted, link.
- Toolbar:** Includes icons for file operations, search, and help.
- Status Bar:** Displays system information like battery level, network, and date/time (14/12/2022).

```

CREATE VIEW jobs_software_python AS
SELECT title, description, date_posted, link FROM JobData WHERE company_id IN
(SELECT id FROM Company WHERE industry='Software Development') AND id IN
(SELECT id from skills_jobs_data where skill_id IN (SELECT id FROM skill_data WHERE skill_name like '%python%'));

```

16. Select Apple jobs with title data scientist

CREATE VIEW jobs_apple_aiml AS SELECT title, description, date_posted, link FROM JobData WHERE title LIKE '%AI/ML%' AND company_id IN (SELECT id FROM Company WHERE name='Apple');

The screenshot shows the MySQL Workbench interface with the following details:

- Schemas:** Local instance MySQL57, public_schema, sakila.
- Code Editor:** SQL pane showing the creation of a view named 'jobs_apple_aiml'. The code includes a WHERE clause filtering by company name ('Apple').
- Result Grid:** Shows a table with 1 row of job data, including columns: title, description, date_posted, link.
- Toolbar:** Includes icons for file operations, search, and help.
- Status Bar:** Displays system information like battery level, network, and date/time (14/12/2022).

```

SELECT title, description, date_posted, link FROM JobData WHERE title LIKE '%AI/ML%' AND company_id IN (SELECT id FROM Company WHERE name='Apple');

```

17. Select Data Analyst I Pacific Northwest National Laboratory jobs in Augusta.

CREATE VIEW jobs_ds_enhance_sandiego AS
SELECT title, description, date_posted, link FROM JobData WHERE title LIKE '%Data Analyst I%'
AND company_id in (SELECT id FROM company WHERE name='Pacific Northwest National Laboratory')
and location_id in (SELECT id FROM Location WHERE city = 'Augusta');

18. Select associate jobs in New York City

```
CREATE VIEW jobs_associate_newyork AS
SELECT title, description, date_posted, link, location_id FROM JobData WHERE seniority_level='Associate' and location_id IN (SELECT id FROM Location
WHERE city='New York City Metropolitan Area');
```

19. Searching for Jobs where seniority level is Mid-Senior level and salary ranges between 50000 and 100000

```
CREATE VIEW mid_senior_salary AS SELECT title, description, date_posted, link FROM JobData WHERE seniority_level = 'Mid-Senior level'
AND id IN (SELECT job_id FROM derived_data WHERE Category = 'Salary'
AND value BETWEEN 50000 and 100000);
```

20. Select jobs from apple where job description contains H1B

```
CREATE VIEW jobs_apple_h1b AS
SELECT title, description, date_posted, link FROM JobData WHERE description LIKE '%H1B%' AND company_id IN (SELECT id FROM Company WHERE
name='Apple');
```

1. What user posted this job tweet?

```
SELECT name FROM twitter_user WHERE twitter_user.user_id = (SELECT user_id FROM
job_tweets WHERE job_tweets.tweet_id = 1589411884968644615);
```

The screenshot shows the MySQL Workbench interface. The query editor window contains the following code:

```
1 • USE ai_jobs_database;
2
3 • SELECT name FROM twitter_user
4 WHERE twitter_user.user_id = (SELECT user_id FROM job_tweets
5 WHERE job_tweets.tweet_id = 1589411884968644615);
6
7
8
9
```

The result grid shows one row with the name "Noticeperiod.com".

name
Noticeperiod.com

2. What user posted a tweet about the event?

```
SELECT name FROM twitter_user WHERE twitter_user.user_id = (SELECT user_id FROM
event_tweets WHERE event_tweets.tweet_id = 1589528329060700160);
```

The screenshot shows the MySQL Workbench interface. The query editor window contains the following code:

```
1 • USE ai_jobs_database;
2
3 • SELECT name FROM twitter_user
4 WHERE twitter_user.user_id = (SELECT user_id FROM event_tweets
5 WHERE event_tweets.tweet_id = 1589528329060700160);
6
7
8
9
```

The result grid shows one row with the name "Evening Standard".

name
Evening Standard

3. When did the user post this tweet about the job?

```
SELECT date_posted FROM job_tweets WHERE job_tweets.tweet_id =
1589411884968644615;
```

```

1 • USE ai_jobs_database;
2
3 • SELECT date_posted FROM job_tweets
4 WHERE job_tweets.tweet_id = 1589411884968644615;
5
6
7
8

```

Result Grid

date_posted
2022-11-07

4. When did the user post this tweet about the event?

```
SELECT date_posted FROM event_tweets WHERE event_tweets.tweet_id =
1589528329060700160;
```

Result Grid

date_posted
2022-11-07

5. What keywords/ hashtags are popular?

```
SELECT tag_name FROM twitter_tag GROUP BY tag_name ORDER BY COUNT(*) DESC LIMIT 5;
```

```

1 • USE ; Execute the statement under the keyboard cursor
2
3 • SELECT tag_name
4   FROM twitter_tag
5   GROUP BY tag_name
6   ORDER BY COUNT(*) DESC LIMIT 5;
7
8
9

```

Result Grid

tag_name
AI
jobs
Python
machinelearning
javascript

6.What job tweets are popular?

```
SELECT * FROM job_tweets      ORDER BY like_count DESC LIMIT 5;
```

```

1 • USE ai_jobs_database;
2
3 • SELECT *
4   FROM job_tweets
5   ORDER BY like_count DESC LIMIT 5;
6
7
8

```

Result Grid

tweet_id	user_id	description	date_posted	like_count
1591232265283330048	1393424079634395139	We are #hiring a leader for the new #AI Bootcamp program at @caltech (ABC). The mission of the progra...	2022-11-12	37
1591429930243743746	1439025975136641025	How to Become a Game Developer https://t.co/lZ0oWGugde #blockchain #DigitalTransformation #Cyber...	2022-11-12	31
1589815173740888065	1439025975136641025	What is SQL? https://t.co/b9uFXUjsxP #AI #blockchain #DigitalTransformation #CyberSecurity #python #...	2022-11-08	30
1591071757020332032	1439025975136641025	What Is a VPN? - Virtual Private Network https://t.co/Er3VYYly2R #blockchain #DigitalTransformation #Cy...	2022-11-11	28
1591000227745771521	2153507148	We're hiring! Discover why our work environment is voted best in the industry by our employees. Join ou...	2022-11-11	27
NULL	NULL	NULL	NULL	NULL

7.What event tweets are popular?

```
SELECT * FROM event_tweets      ORDER BY like_count DESC LIMIT 5;
```

```

1 • USE Execute the statement under the keyboard cursor
2
3 • SELECT *
4   FROM event_tweets
5   ORDER BY like_count DESC LIMIT 5;
6
7
8

```

100% 34:5

Result Grid Filter Rows: Search Edit: Export/Import: Fetch rows:

tweet_id	user_id	description	date_posted	like_count
1590315706205102081	1403861754808049666	⚠️ Ways You Could Be Inviting a #CyberSecu...	2022-11-09	82
1589955991021686786	1403861754808049666	What is AIOps (#Artificial_Intelligence for IT Op...	2022-11-08	65
1590664284786552834	3131243261	With #COP27 in full swing our #podcast special...	2022-11-10	58
1591000292190978048	202590356	280+ #MachineLearning Projects Solved &...	2022-11-11	45
1590138609625346048	342890405	800 free computer science classes you can take...	2022-11-09	44
NULL	NULL	NULL	NULL	NULL

8.What job tweets have this user posted in the past 24 hours?

```

SELECT * FROM job_tweets      WHERE date_posted >= DATE_ADD(CURDATE(), INTERVAL -1
DAY) AND date_posted < DATE_ADD(CURDATE(), INTERVAL 0 DAY) AND user_id =
1298682524235739136;

```

```

1 • USE ai_jobs_database;
2
3 • SELECT *
4   FROM job_tweets
5   WHERE date_posted >= DATE_ADD(CURDATE(), INTERVAL -1 DAY) AND date_posted < DATE_ADD(CURDATE(), INTERVAL 0 DAY)
6   AND user_id = 1298682524235739136;

```

100% 35.6

Result Grid Filter Rows: Search Edit: Export/Import:

tweet_id	user_id	description	date_posted	like_count
1591246022055198720	1298682524235739136	Talent Hackers is hiring: Data Scientist Ofertia is a digital company based in lively Barcelona. Our missio...	2022-11-12	0
15912612438513153	1298682524235739136	Capital One is hiring: Distinguished Engineer- Model Dev Software Engineer (Remote- Eligible) Location...	2022-11-12	1
1591261254076989440	1298682524235739136	N9 IT SOLUTIONS is hiring: Python Developer * Job Title: -python Developer Position: - W2 Employment...	2022-11-12	0
1591291750408425472	1298682524235739136	Valpro is hiring: Software Engineer - San Francisco (Remote) Valpro has several available opportunities...	2022-11-12	0
1591385487880908800	1298682524235739136	Syneos Health Clinical is hiring: Associate Director, Product Owner Description THE ASSOCIATE DIREC...	2022-11-12	0
1591385489441165317	1298682524235739136	Western Digital is hiring: Sr. Cyber Security Threat Analyst Company Description At Western Digital, our...	2022-11-12	0
159140086448303106	1298682524235739136	Schneider Electric is hiring: AI Industry Consulting Analyst Job Description:The AI Industry Analyst will be...	2022-11-12	0
1591400861145894913	1298682524235739136	Syneos Health Clinical is hiring: Director, Technical Product Management Description Job Description Di...	2022-11-12	0
1591400863561814016	1298682524235739136	Cash App is hiring: Senior Machine Learning Engineer Company Description It all started with an idea at...	2022-11-12	3
1591502973146124288	1298682524235739136	BD is hiring: Staff Engineer - Operational Technology (OT) Staff Software Engineer- Remote JOB DESC...	2022-11-12	0
1591506318543663104	1298682524235739136	Accenture Federal Services - National Security Portfolio is hiring: Python Developer Accenture Federal S...	2022-11-12	0
1591532980614606849	1298682524235739136	Paramount is hiring: Director of Data Engineering- Remote Hiring Salary Range: \$140,000.00 - 200,000...	2022-11-12	0
1591532980614606849	1298682524235739136	Fresno Milligan is hiring: Data Scientist II Fresno Milligan is a leading international mining company...	2022-11-12	0

9.What event tweets have this user posted in the past 24 hours?

```

SELECT * FROM event_tweets      WHERE date_posted >= DATE_ADD(CURDATE(), INTERVAL
-1 DAY) AND date_posted < DATE_ADD(CURDATE(), INTERVAL 0 DAY) AND user_id =
58508576;

```

```

1 • USE ai_jobs_database;
2
3 • SELECT *
4   FROM event_tweets
5   WHERE date_posted >= DATE_ADD(CURDATE(), INTERVAL -1 DAY) AND date_posted < DATE_ADD(CURDATE(), INTERVAL 0 DAY)
6   AND user_id = 58508576;

```

The screenshot shows the MySQL Workbench interface. The SQL editor contains the provided query. The results are displayed in a grid titled 'Result Grid' with columns: tweet_id, user_id, description, date_posted, and like_count. Two rows of data are shown:

tweet_id	user_id	description	date_posted	like_count
1591506489356820480	58508576	I do find some common themes that overlap with the worker shortage, Tony Schmitz @UTKno...	2022-11-12	5
1591521466813911040	58508576	#Sensors and #digitaltwins are advancing. @HGlorikian explains the impact on health and well...	2022-11-12	3

10. How many job tweets have this user posted in the past 24 hours?

```

SELECT user_id, COUNT(*) as tweetCount FROM job_tweets      WHERE date_posted >=
DATE_ADD(CURDATE(), INTERVAL -1 DAY) AND date_posted < DATE_ADD(CURDATE(),
INTERVAL 0 DAY) AND user_id = 1298682524235739136;

```

```

1 • USE Execute the statement under the keyboard cursor
2
3 • SELECT user_id, COUNT(*) as tweetCount
4   FROM job_tweets
5   WHERE date_posted >= DATE_ADD(CURDATE(), INTERVAL -1 DAY) AND date_posted < DATE_ADD(CURDATE(), INTERVAL 0 DAY)
6   AND user_id = 1298682524235739136;

```

The screenshot shows the MySQL Workbench interface. The SQL editor contains the provided query. The results are displayed in a grid titled 'Result Grid' with columns: user_id and tweetCount. One row of data is shown:

user_id	tweetCount
1298682524235739136	14

```

100% 14:3
Result Grid Filter Rows: Search Export:

```

user_id	tweetCount
1298682524235739136	14

11. How many event tweets have this user posted in the past 24 hours?

```

SELECT user_id, COUNT(*) as tweetCount FROM event_tweets      WHERE date_posted >=
DATE_ADD(CURDATE(), INTERVAL -1 DAY) AND date_posted < DATE_ADD(CURDATE(),
INTERVAL 0 DAY) AND user_id = 58508576;

```

The screenshot shows a MySQL Workbench interface. At the top, there are various icons for database management. Below them, a code editor displays the following SQL query:

```
1 • USE ai_jobs_database;
2
3 • SELECT user_id, COUNT(*) as tweetCount
4   FROM event_tweets
5 WHERE date_posted >= DATE_ADD(CURDATE(), INTERVAL -1 DAY) AND date_posted < DATE_ADD(CURDATE(), INTERVAL 0 DAY)
6 AND user_id = 58508576;
```

The results are displayed in a "Result Grid" table:

user_id	tweetCount
58508576	2

12. When did this user join Twitter?

```
SELECT date_joined FROM twitter_user WHERE user_id = 58508576;
```

```
1 • USE ai_jobs_database;
2
3 • SELECT date_joined
4   FROM twitter_user
5 WHERE user_id = 58508576
```

The screenshot shows a MySQL Workbench interface with a "Result Grid" table. The table has one column labeled "date_joined". The data row shows the value "2009-07-20".

date_joined
2009-07-20