

DMDD Final Project

Jobs Database - Artificial Intelligence

[Asawari Kadam](#) | [Ashwini Khedkar](#) | [Hariharan Sundaram](#) | [Vinay Prabhu](#)

A MySQL Database for AI/ML/DS Jobs contains scraped data of jobs, company profile, cost of living and tax rates from [Linkedin](#), [Glassdoor](#), [tax rates](#) and [cost of living](#).

Project Features

- Jobs data scraped by a bot, cleaned and merged from Linkedin and Glassdoor.
- 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 ratings from glassdoor.
- Database contains cost of living at different cities along with state tax rates.

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. Web Scraping

- Scrapped jobs from LinkedIn and Glassdoor using Beautiful Soup and Scrapy
- Scrapped company information like revenue, size, and rating from Glassdoor
- Also scraped tax rates and cost of living information about job location

3. Database Creation

- Created ER diagram using Crawford Notation
- Created Jobs database using MySQL workbench

4. Data cleaning, Normalization 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

5. Data Loading

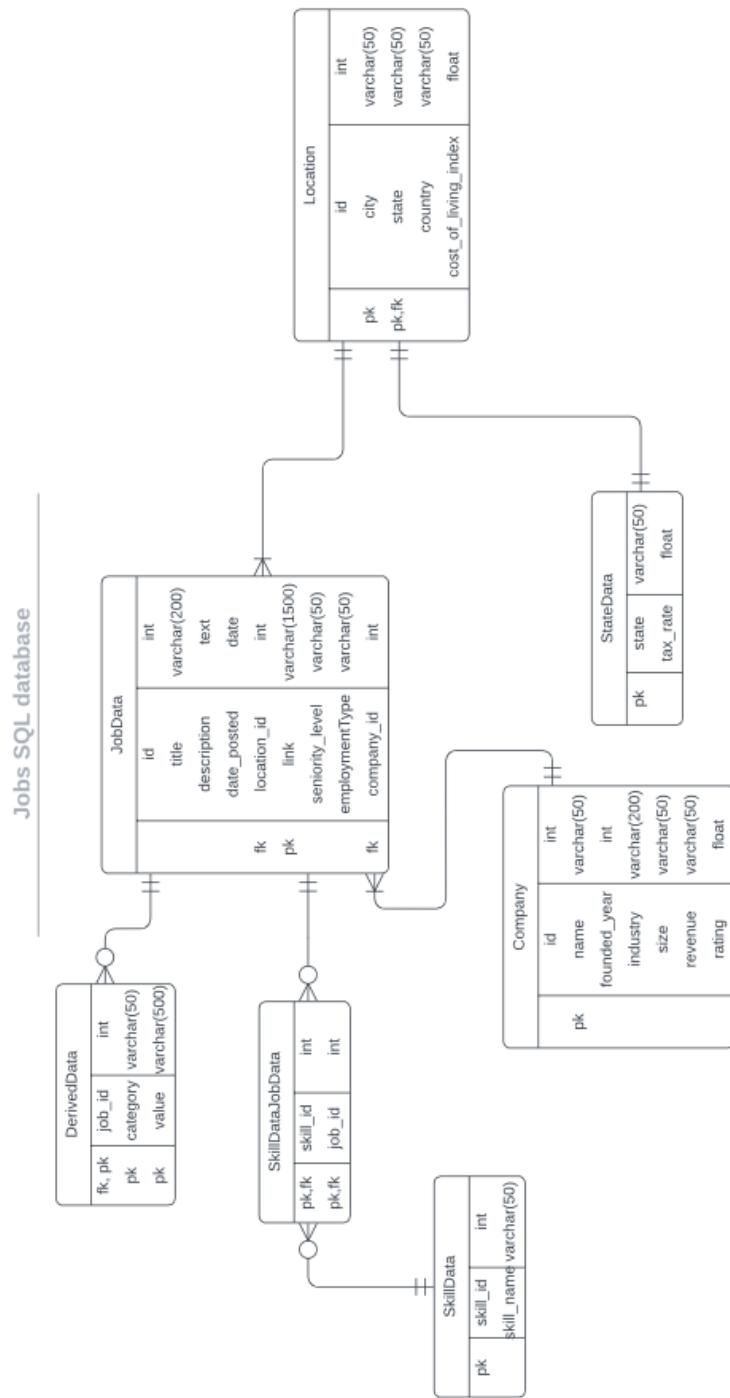
- Fed the cleaned and normalized data into MySQL database using sqlalchemy

6. Data Visualization

Added visualizations for the following

- Salary distribution
- State-wise distribution of AI/DS jobs
- State-wise tax rates
- State-wise cost of Living
- Companies with most AI/DS job postings
- Industries with most AI/DS job openings
- Top 10 highest paid data science jobs
- Top 10 in demand skills in data science

Entity Relationship Diagram



Jobs Scraper Bots

Glassdoor Scraper

```
import scrapy
from dataclasses import dataclass
from bs4 import BeautifulSoup
import re
from urllib.parse import quote
from scrapy.crawler import CrawlerProcess
from scrapy.utils.project import get_project_settings
import json

@dataclass
class GlassdoorJobData():
    """A class for holding job data content"""

    # Attributes Declaration
    title: str = None
    jobId: str = None
    companyName: str = None
    location: str = None
    datePosted: str = None
    link: str = None
    description: str = None
    salary: str = None
    industry: str = None
    companyRating: float = None
    companyFoundedYear: str = None
    sector: str = None
    size: str = None
    revenue: str = None

    # A bot to scrape Glassdoor jobs
class GlassdoorSpider(scrapy.Spider):
    # A counter for iterating through page numbers to follow glassdoor links
    pageNumber = 1
    # A flag which when set to true stops scraping and following links. It is
    # set when either no
    # jobs are returned or when server returns 400 response.
    shouldEndSearching = False
    # Name of the scraping bot
    name = 'glassdoorSpider'
    # Request which is updated based on search term and page number.
    request = 'https://www.glassdoor.com/Job/{{searchTerm}}-jobs-
SRCH_K0,14_IP{{pageNumber}}.htm'

    def __init__(self, *args, **kwargs):
        super(GlassdoorSpider, self).__init__(*args, **kwargs)
        # Takes search term as argument and searches glassdoor with it
        searchTerm = kwargs.get('searchTerm', 'hello world')
```

```

        self.request = self.request.replace('{{searchTerm}}',
searchTerm.strip().replace(" ", "-"))
        self.start_urls = [self.request.replace('{{pageNumber}}',
str(self.pageNumber))]

    # Handles optionals and returns None value when an exception is
encountered
    def tryOptional(self, callableBlock):
        try:
            result = callableBlock()
        return result
        except:
            return None

    # A function which is called to follow and open the next page on
glassdoor.
    def parse(self, response):
        if response.status == 400:
            self.shouldEndSearching = True
        return None
        soup = BeautifulSoup(response.body, 'lxml')
        # Fetches all jobs listed on a given page
        jobCards = soup.find_all("li", class_="react-job-listing")

        if len(jobCards) == 0:
            self.shouldEndSearching = True
        return None

        # Iterates through job cards and extracts job links from them
        for jobCard in jobCards:
            jobModel = GlassdoorJobData()
            jobModel.link = self.tryOptional(
                lambda: jobCard.find("a", class_="jobLink",
href=True) ['href'])
            )
            if(jobModel.link == None):
                continue
            jobModel.link = "https://www.glassdoor.com" + jobModel.link
            yield scrapy.Request(jobModel.link,
callback=self.parseIndividualJobs, cb_kwargs=dict(jobModel=jobModel))

            self.pageNumber += 1
            nextPage = self.request.replace="{{pageNumber}}",
str(self.pageNumber))
            # Follows and opens the next page after updating url with page number
            if (not self.shouldEndSearching):
                yield response.follow(nextPage, callback=self.parse)

        # Parses individual job page to extract necessary information and maps to
the job model
    def parseIndividualJobs(self, response, jobModel):
        jobBannerValid = False
        job = BeautifulSoup(response.body, 'lxml')

```

```

    try:
        jobBanner = job.find("div", class_="css-urlsrg e11nt52q0")
        jobBannerValid = True
    except:
        print("[ERROR] Error occurred in function extract_listingBanner")
        return

    # Extracts the appcache json from script tag in the retrieved web
page
    pattern = re.compile(r>window.appCache')
    scriptText = job.find('script', text=pattern).text
    cacheData = json.loads(scriptText[scriptText.find('{') :
scriptText.rfind('}')+1])

    if jobBannerValid:
        jobModel.title = self.tryOptional(lambda: jobBanner.find("div",
class_="css-17x2pw1 e11nt52q6").getText())
        jobModel.salary = self.tryOptional(
            lambda: jobBanner.find("span", class_="small css-10zcshf
e1v3ed7e1").getText()
        )
        jobModel.jobId = self.tryOptional(
            lambda:
cacheData['initialState']['jlData']['job']['jobReqId']
        )
        jobModel.datePosted = self.tryOptional(
            lambda:
cacheData['initialState']['jlData']['header']['posted']
        )
        jobModel.companyName = self.tryOptional(
            lambda:
cacheData['initialState']['jlData']['header']['employer']['name']
        )
        jobModel.location = self.tryOptional(
            lambda: job.find("div", class_="css-1v5elnn
e11nt52q2").getText()
        )
        jobModel.description = self.tryOptional(
            lambda: job.find("div", class_='desc css-58vpdc
ecgqlxb5').getText(' ').strip()
        )
        jobModel.companyFoundedYear = self.tryOptional(
            lambda:
cacheData['initialState']['jlData']['overview']['yearFounded']
        )
        jobModel.industry = self.tryOptional (
            lambda:
cacheData['initialState']['jlData']['overview']['primaryIndustry']['industryN
ame']
        )
        jobModel.sector = self.tryOptional(

```

```

        lambda:
cacheData['initialState']['jlData']['overview']['primaryIndustry']['sectorName']
    )
jobModel.size = self.tryOptional(
        lambda:
cacheData['initialState']['jlData']['overview']['size']
    )
jobModel.revenue = self.tryOptional(
        lambda:
cacheData['initialState']['jlData']['overview']['revenue']
    )
jobModel.companyRating = self.tryOptional(
        lambda:
cacheData['initialState']['jlData']['overview']['ratings']['overallRating']
    )
yield jobModel

```

Linkedin Scraper

```

import scrapy
from dataclasses import dataclass
from bs4 import BeautifulSoup
import re
from urllib.parse import quote

@dataclass
class JobData():
    """A class for holding job data content"""
    # Attributes Declaration
    title: str = None
    jobId: str = None
    companyName: str = None
    location: str = None
    datePosted: str = None
    link: str = None
    description: str = None
    seniorityLevel: str = None
    employmentType: str = None
    jobFunction: str = None
    industry: str = None

    # A bot to scrape Linkedin jobs
class LinkedInSpider(scrapy.Spider):
    # A scraped jobs offset to continue scraping
    pageSizeTillNow = 0
    # Indicates the number of jobs present on each page

```

```

pageSize = 25
# A flag to control and stop searching process
shouldEndSearching = False
# Name of the spider
name = 'linkedinSpider'
# Request which can be updated with search term and jobs offset
request = 'https://www.linkedin.com/jobs-
guest/jobs/api/seeMoreJobPostings/search?keywords={{searchTerm}}&location=Un
ited%20States&geoId=103644278&trk=public_jobs_jobs-search-bar_search-
submit&position=8&pageNum=0&currentJobId=3257884433&start='

def __init__(self, *args, **kwargs):
    super(LinkedinSpider, self).__init__(*args, **kwargs)
    # Receives the search term as a parameter and percentage encodes it
    encodedSearchTerm = quote(kwargs.get('searchTerm', 'hello world'))
    # Updates the request with search term and jobs offset
    self.request = self.request.replace('{{searchTerm}}',
encodedSearchTerm)
    self.start_urls = [self.request+str(self.pageSizeTillNow)] 

# Handles exceptions gracefully. It returns None type on exception.
def tryOptional(self, callableBlock):
    try:
        result = callableBlock()
        return result
    except:
        return None

# Parses each linkedin page and follows the job links and consecutive
page links with offset
def parse(self, response):
    # Stops searching when server returns 400 response
    if response.status == 400:
        self.shouldEndSearching = True
        return None
    soup = BeautifulSoup(response.body, 'lxml')
    for job in soup.findAll('div', class_='job-search-card'):
        jobModel = JobData()
        jobModel.jobId = self.tryOptional(lambda: (job.attrs['data-
entity-urn']).split('jobPosting:')[1]))
        jobModel.title = self.tryOptional(lambda:
job.find('h3').text.strip())
        jobModel.companyName = self.tryOptional(lambda:
job.find(class_='base-search-card_subtitle').text.strip())
        jobModel.location = self.tryOptional(lambda:
job.find(class_="job-search-card_location").text.strip())
        jobModel.datePosted = self.tryOptional(lambda: job.find('time',
class_='job-search-card_listdate').attrs['datetime'])
        jobModel.link = self.tryOptional(lambda:
job.find('a').attrs['href'])
        yield scrapy.Request(jobModel.link,
callback=self.parseIndividualJobs, cb_kwargs=dict(jobModel=jobModel))
    # Fetched jobs offset to update url and move to next page

```

```

    self.pageSizeTillNow += self.pageSize
    nextPage = self.request+str(self.pageSizeTillNow)
    if (not self.shouldEndSearching):
        yield response.follow(nextPage, callback=self.parse)

    # Parses individual job pages and maps to the jobModel
    def parseIndividualJobs(self, response, jobModel):
        job = BeautifulSoup(response.body, 'lxml')
        jobModel.description = self.tryOptional(lambda: job.find('div',
class_='description_text').getText(' ').strip())
        jobModel.seniorityLevel = self.tryOptional(
            lambda: job.find(text=re.compile('Seniority
level')).parent.parent.find('span').text.strip()
        )
        jobModel.employmentType = self.tryOptional(
            lambda: job.find(text=re.compile('Employment
type')).parent.parent.find('span').text.strip()
        )
        jobModel.jobFunction = self.tryOptional(
            lambda: job.find(text=re.compile('Job
function')).parent.parent.find('span').text.strip()
        )
        jobModel.industry = self.tryOptional(
            lambda:
job.find(text=re.compile('Industries')).parent.parent.find('span').text.stri
p()
        )
    yield jobModel

```

Spider Coordinator

```

from JobsBot.spiders.linkedinSpider import LinkedinSpider
from JobsBot.spiders.glassdoorSpider import GlassdoorSpider
from scrapy.crawler import CrawlerProcess
from scrapy.utils.project import get_project_settings

linkedinSearchKeywords = ['Data Scientist', 'Data Analyst']
glassdoorSearchKeywords = ['Data Scientist', 'artificial intelligence
engineer']

# Creates and triggers the crawl process by building multiple spiders for
each keyword and
# runs them concurrently.

```

```
def startCrawling():
    process = CrawlerProcess(get_project_settings())
    for searchKeyword in linkedinSearchKeywords:
        keywords = {'searchTerm': searchKeyword}
        process.crawl(LinkedinSpider, **keywords)
    for searchKeyword in glassdoorSearchKeywords:
        keywords = {'searchTerm': searchKeyword}
        process.crawl(GlassdoorSpider, **keywords)
    process.start(stop_after_crawl=False)

startCrawling()
```

SQL Database Creation

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

USE `ai_jobs_database`;

SET NAMES utf8mb4;
SET character_set_client = utf8mb4;

-- Creates company table containing company data
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`)
);

-- Creates table for holding state name along with tax rate
CREATE TABLE `state_data` (
  `state` varchar(50) NOT NULL,
  `tax_rate` float,
  PRIMARY KEY(`state`)
);

-- Creates location table containing city, state and country along with cost
of living data. It refers to state_data table.
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`)
);

-- Creates jobData table to hold job details. It refers to location and
company table.
CREATE TABLE `jobData` (
  `id` bigint NOT NULL,
  `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`)
);

-- Creates table for derived data which contains inferred or estimated data
like salary. It refers to jobData table
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`)
);

-- Creates table for holding derived skill data tags
CREATE TABLE `skill_data` (
`id` bigint,
`skill_name` varchar(50),
PRIMARY KEY(`id`)
);

-- Creates a bridging table for handling many-to-many relationship between
skill_data and jobsData
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`)
);

```

Data Cleaning, Feature Engineering, Normalization and Loading

JobTitle	JobId	CompanyName	Location	datePosted	Link	JobDescription	seniorityLevel
Data Scientist (Deep Learning), Peacock	3390271556	Peacock	New York, NY	2022-12-06	https://www.linkedin.com/jobs/view/data-scient...	Company Description NBCUniversal owns and oper...	Associate
Data Analyst, Money	3394422566	SoFi	California, United States	2022-12-09	https://www.linkedin.com/jobs/view/data-analys...	Employee Applicant Privacy Notice Who we are: ...	Not Applicable
Data Scientist	3384157495	Grammarly	New Jersey, United States	2022-12-02	https://www.linkedin.com/jobs/view/data-scient...	Grammarly is excited to offer a remote-first h...	Entry level
Data Scientist	3390226105	Atrium	United States	2022-12-06	https://www.linkedin.com/jobs/view/data-scient...	This role plays a key role working with custom...	Mid-Senior level
Data Scientist	3400933369	FocusKPI, Inc.	San Francisco, CA	None	https://www.linkedin.com/jobs/view/data-scient...	FocusKPI is seeking a Data Scientist to enab...	Entry level

```
employmenttype      1962 non-null object
jobFunction         1833 non-null object
Industry            1824 non-null object
City                1962 non-null object
State               1651 non-null object
dtypes: int64(1), object(12)
memory usage: 199.4+ KB
```

```
(1799, 13)

Checking for null values

check_for_nan = linkedin_data.isnull().sum()
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() for x in x))

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

## digits
```

```

    "" 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 for x in x.split()))

## lemmatization
linkedin_data['JobDescription'] = linkedin_data['JobDescription'].apply(lambda x: " ".join([Word(word).lemmatize() for word in x]))

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

print(linkedin_data.shape)

Preprocessed data:

      JobTitle        JobId CompanyName \
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 = linkedin_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', 'scikit-learn',
                    '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

```

```
## At this steps, raw skills list
#raw_skills = [x for x in raw_ski
#raw_skills = list(set(raw_skills

# transform list to string
txt = " ".join(raw_skills)
blob = TextBlob(txt)
#top 6 adjective
#top_adjectives = [w for (w, pos)
#print("Top 6 adjectives: ", top_a
```

```
output = output.append({'Job_Title':clf.classes_[i],
                      'technical_skills':top_technical_skills},
                     ignore_index=True).head(10)

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 Chicago, IL)',
 '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','location': 'Location',
 'datePosted':'DatePosted','link':'Link','description':'JobDescription', 'industry': 'Industry',
 'salary':'Salary', 'companyRating':'Rating', 'companyFoundedYear':'Founded', 'size': 'Size',
 '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 Link JobDescription
0 Data Scientist / Principal Data Scientist 1007527738949 Northrop Grumman Melbourne, FL Dec 24, 2021 https://www.glassdoor.com/partner/jobListing.h... Requisition ID: R10046910 \n Category: Researcher...
1 Data Scientist 1008344133056 Brooksource Reston, VA Dec 12, 2022 https://www.glassdoor.com/partner/jobListing.h... Data Scientist Reston, VA Onsite Our Federal I...
2 Deep Learning Researcher 1008238068907 Topaz Labs Dallas, TX Oct 27, 2022 https://www.glassdoor.com/partner/jobListing.h... We're Topaz Labs, an AI tech company that buil...
3 Manager, Data Science 1008324542619 Wings Financial Credit Union Apple Valley, MN Dec 02, 2022 https://www.glassdoor.com/partner/jobListing.h... PRIMARY PURPOSE: Serve Wings Financial by tur...
4 Data Scientist - Model Risk Governance 1008339719081 Caliber Financial Services Dallas, TX Dec 09, 2022 https://www.glassdoor.com/partner/jobListing.h... Job Description – Data Scientist, Model Risk G...

glassdoor_data.shape

(1590, 14)

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

(59, 14)

```


```

	JobTitle	JobId	CompanyName	Location	DatePosted	Link	JobDescription
0	Data Scientist / Principal Data Scientist	1007527738949	Northrop Grumman	Melbourne, FL	Dec 24, 2021	https://www.glassdoor.com/partner/jobListing.html?jobId=1007527738949&requisitionId=R10046910	Requisition ID: R10046910 \n Category: Research
1	Data Scientist	1008344133056	Brooksource	Reston, VA	Dec 12, 2022	https://www.glassdoor.com/partner/jobListing.html?jobId=1008344133056	Data Scientist Reston, VA Onsite Our Federal I...
2	Deep Learning Researcher	1008238068907	Topaz Labs	Dallas, TX	Oct 27, 2022	https://www.glassdoor.com/partner/jobListing.html?jobId=1008238068907	We're Topaz Labs, an AI tech company that buil...
	Manager						PRIMARY PURPOSE:

	JobTitle	J
0	Data Scientist / Principal Data Scientist	1007527738

Requisition ID	Job Title	Job ID	Company Name	Location	Date Posted	Link	Job Description	Data Scientist
								Reston, VA Onsite Our Federal I...
1	Data Scientist	1008344133056	Brooksource	Reston, VA	Dec 12, 2022	https://www.glassdoor.com/partner/jobListing.html?requisitionId=1008344133056	We're Topaz Labs, an AI tech company that buil...	
2	Deep Learning Researcher	1008238068907	Topaz Labs	Dallas, TX	Oct 27, 2022	https://www.glassdoor.com/partner/jobListing.html?requisitionId=1008238068907		
3	Manager, Data Science	1008324542619	Wings Financial Credit Union	Apple Valley, MN	Dec 02, 2022	https://www.glassdoor.com/partner/jobListing.html?requisitionId=1008324542619	PRIMARY PURPOSE: Serve Wings Financial by tur...	
4	Data Scientist - Model Risk Governance	1008339719081	Caliber Financial Services	Dallas, TX	Dec 09, 2022	https://www.glassdoor.com/partner/jobListing.html?requisitionId=1008339719081	Job Description – Data Scientist, Model Risk G...	

```

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()

```

0	Scientist / Principal Data Scientist	1007527738949	Northrop Grumman	Met
1	Data Scientist	1008344133056	Brooksource	Res

2	Learning Researcher	1008238068907	Topaz Labs	Dallas, TX	Oct 27, 2022	https://www.glassdoor.com/partner/jobListing.html?partner_id=1008238068907	Labs, an AI tech company that buil...
3	Manager, Data Science	1008324542619	Wings Financial Credit Union	Apple Valley, MN	Dec 02, 2022	https://www.glassdoor.com/partner/jobListing.html?partner_id=1008324542619	PRIMARY PURPOSE: Serve Wings Financial by tur...
4	Data Scientist - Model Risk Governance	1008339719081	Caliber Financial Services	Dallas, TX	Dec 09, 2022	https://www.glassdoor.com/partner/jobListing.html?partner_id=1008339719081	Job Description - Data Scientist, Model Risk G...
..	<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
27    2022-12-08
28    2022-12-12
29    2022-09-23
30    2022-11-18
31    2022-09-27
32    2022-11-01
33    2022-08-31
34    2022-08-18
35    2022-10-25
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
47    2022-12-06
48    2022-12-08
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: datetime64[ns]

glassdoor_data.info()

<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)

JobTitle      0
JobId         0
CompanyName   0
Location      0
DatePosted    0
Link          0
JobDescription 0
Salary         7
Industry       8
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, ' ')
```

```

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

## Lower case
glassdoor_data['JobDescription'] = glassdoor_data['JobDescription'].apply(lambda x: " ".join(x.lower() for x in 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(x for x in x.split() if x not in stop))

## lemmatization
glassdoor_data['JobDescription'] = glassdoor_data['JobDescription'].apply(lambda x: " ".join([Word(word).lemmatize() for word in 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', 'scikit-learn',
                    '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])

## Extract technical skills
top_technical_skills= list(set(technical_skills).intersection(raw_skills)) [:]

## Extract adjectives

# Delete technical skills from raw skills list
## At this steps, raw skills list doesnt contain the technical skills
#raw_skills = [x for x in raw_skills if x not in top_technical_skills]
#raw_skills = list(set(raw_skills) - set(top_technical_skills))

# transform list to string
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'
```

'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'
'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' 'obligate' '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'
'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'

	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																										
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...																										

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+

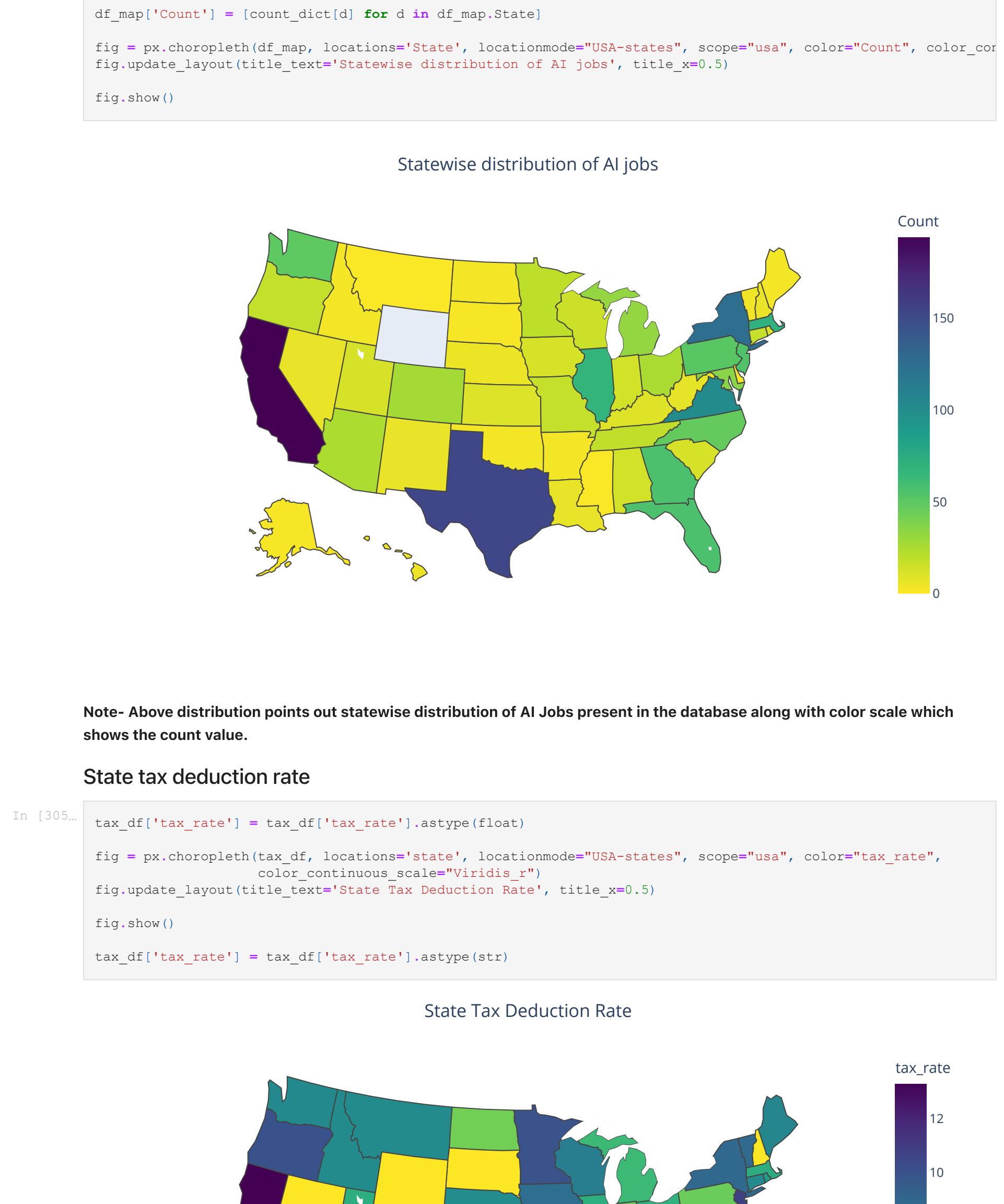
be any column which would be dependent on the non-primary key column. Rest of the other tables satisfy 2 NF form.

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

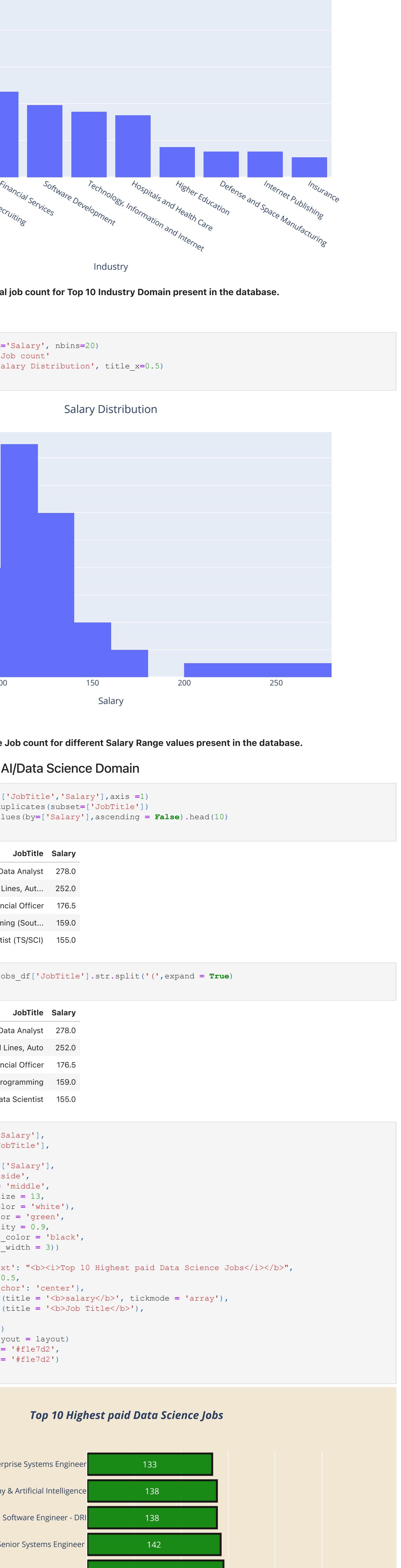
A vertical color bar scale ranging from 0 to 15. The scale is marked at intervals of 5, with numerical labels '0', '5', '10', and '15' positioned to the left of the bar. The bar itself is a solid blue color.

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
Technology	~220
Manufacturing	~180
Healthcare	~150
Finance	~120
Retail	~100
Automotive	~80
Aerospace	~60
Pharmaceuticals	~50
Telecommunications	~40
Energy	~30
Transportation	~20
Food & Beverage	~15
Real Estate	~10
Construction	~8
Automobiles	~5
Others	~3

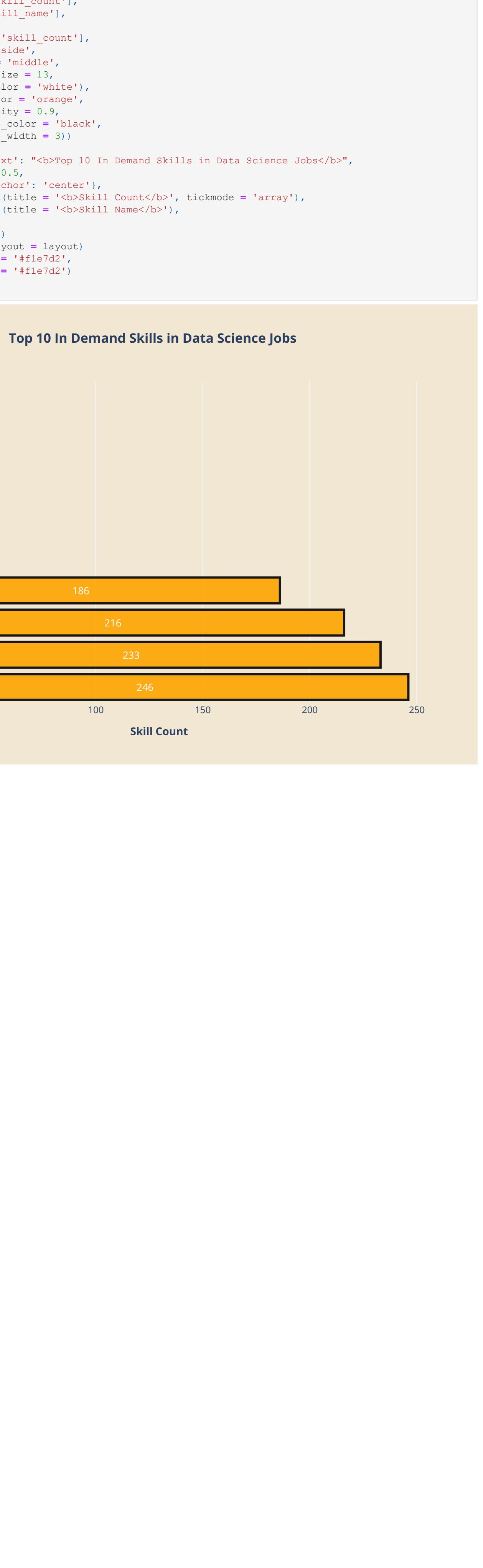


A horizontal bar chart titled "Job Title" on the y-axis and "salary" on the x-axis. The x-axis has major ticks at 0, 50, 100, 150, 200, and 250. The y-axis lists six job titles from top to bottom: Data Scientist, Senior Data Scientist, Senior Director, Statistical Programming, Vice President of Finance/Chief 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 in black text 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

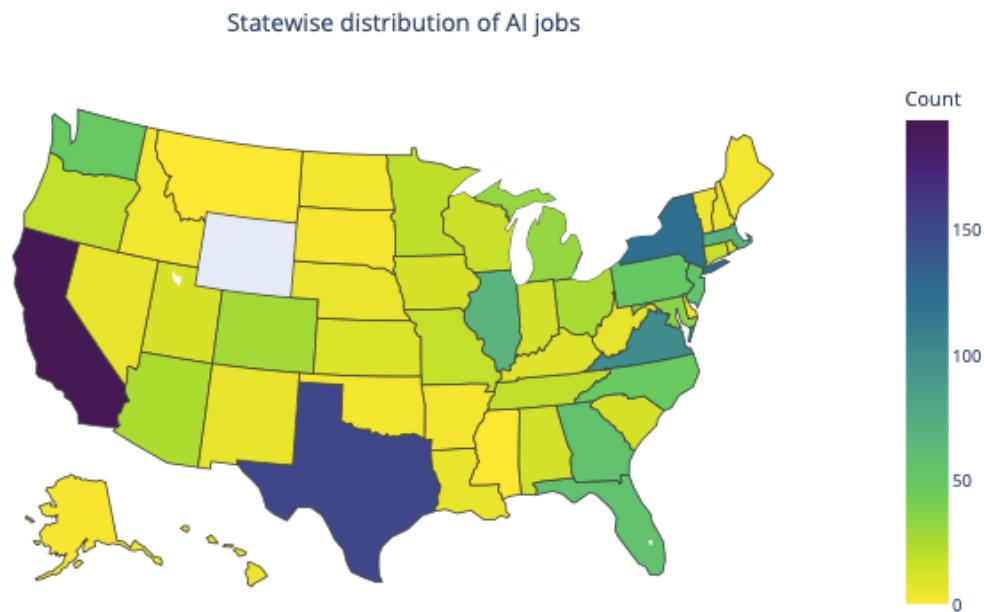
```
13... top_skills = skills_da  
top_skills['skill_coun  
top_skills = top_skill  
top_skills=top_skills.  
top_skills.head()
```

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

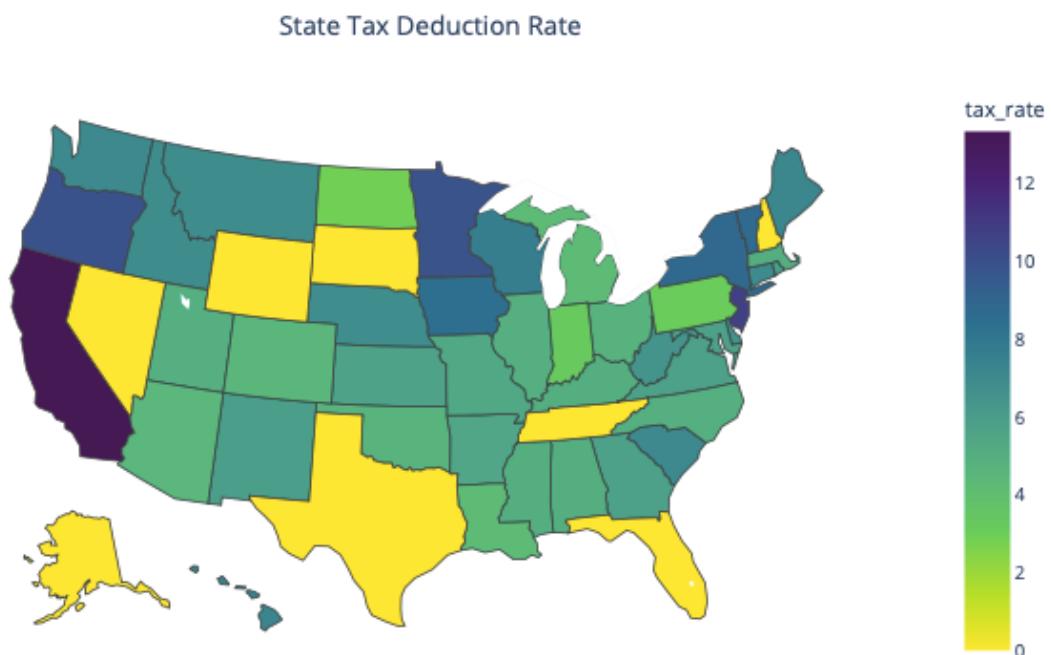


Visualizations

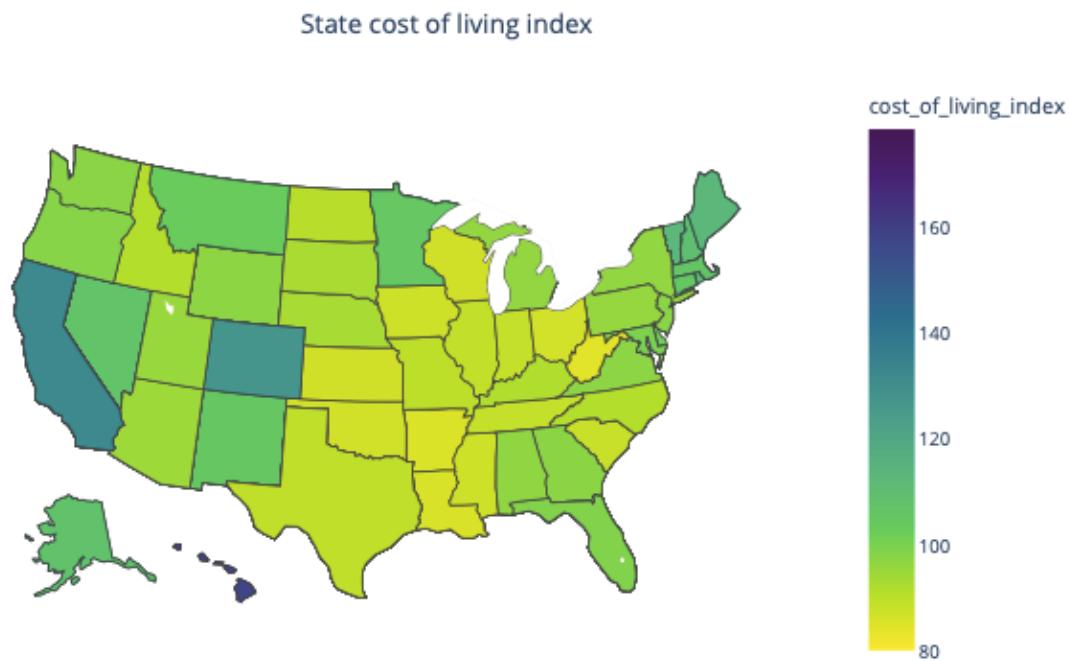
1. State-wise distribution of AI jobs



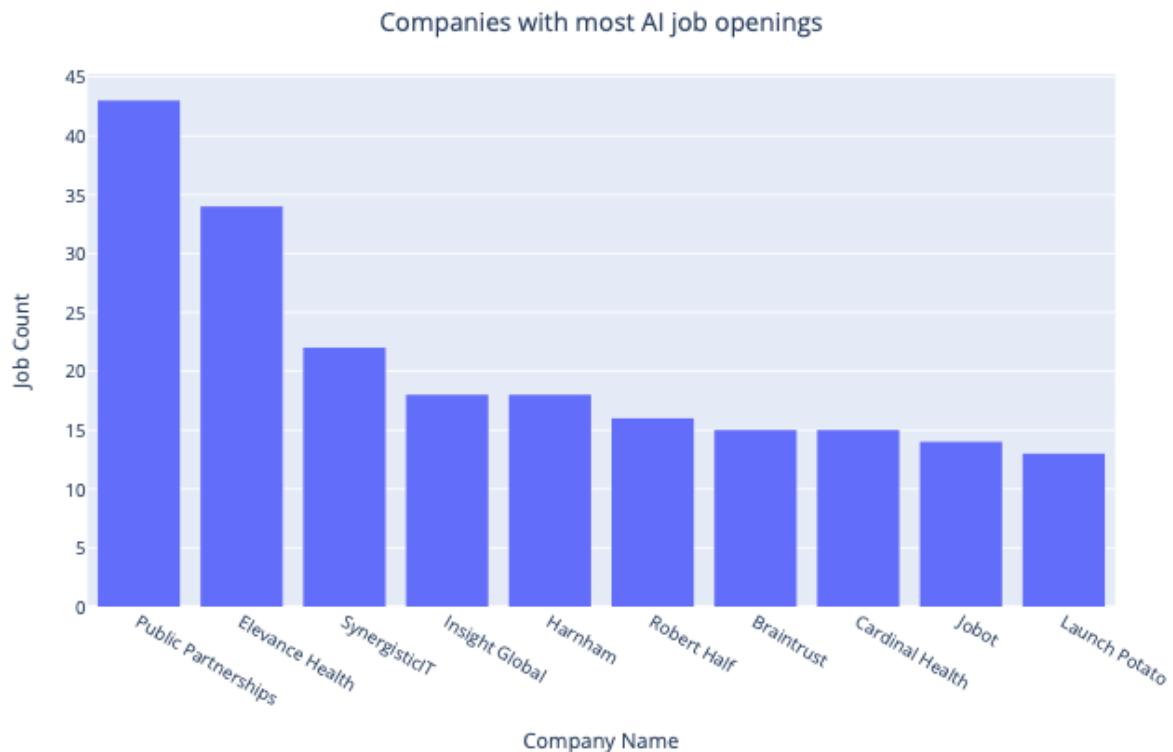
2. State-wise tax deduction rates



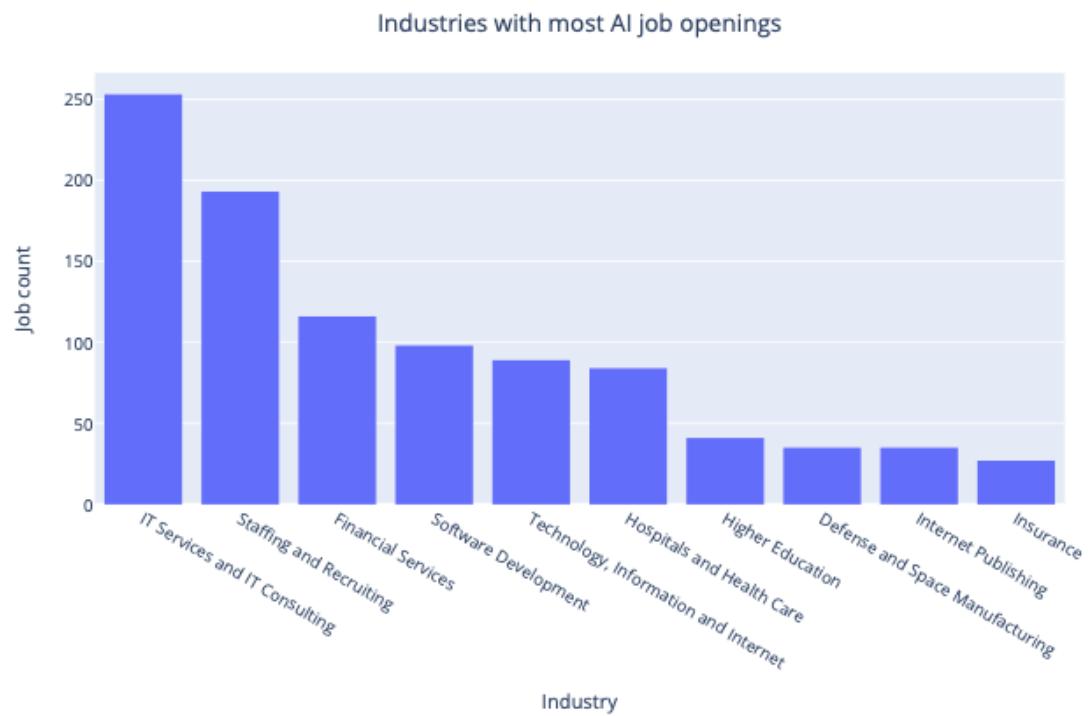
3. State-wise cost of living



4. Companies with most AI job openings



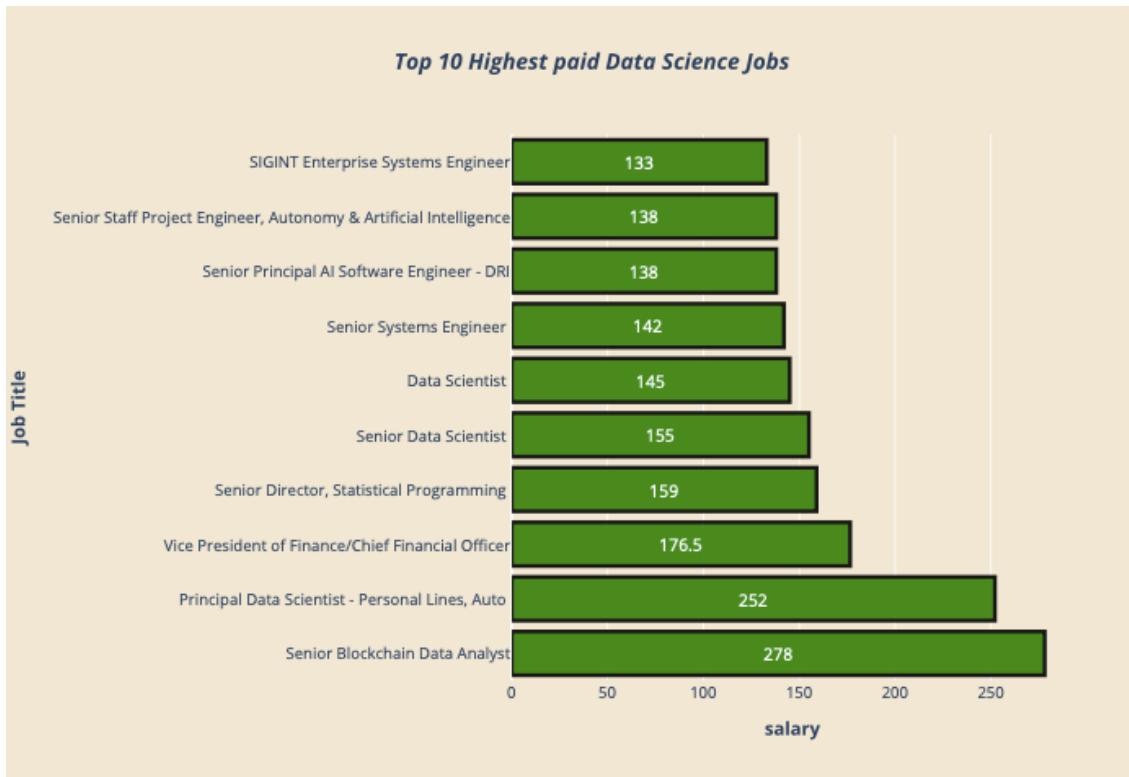
5. Industries with most AI job openings



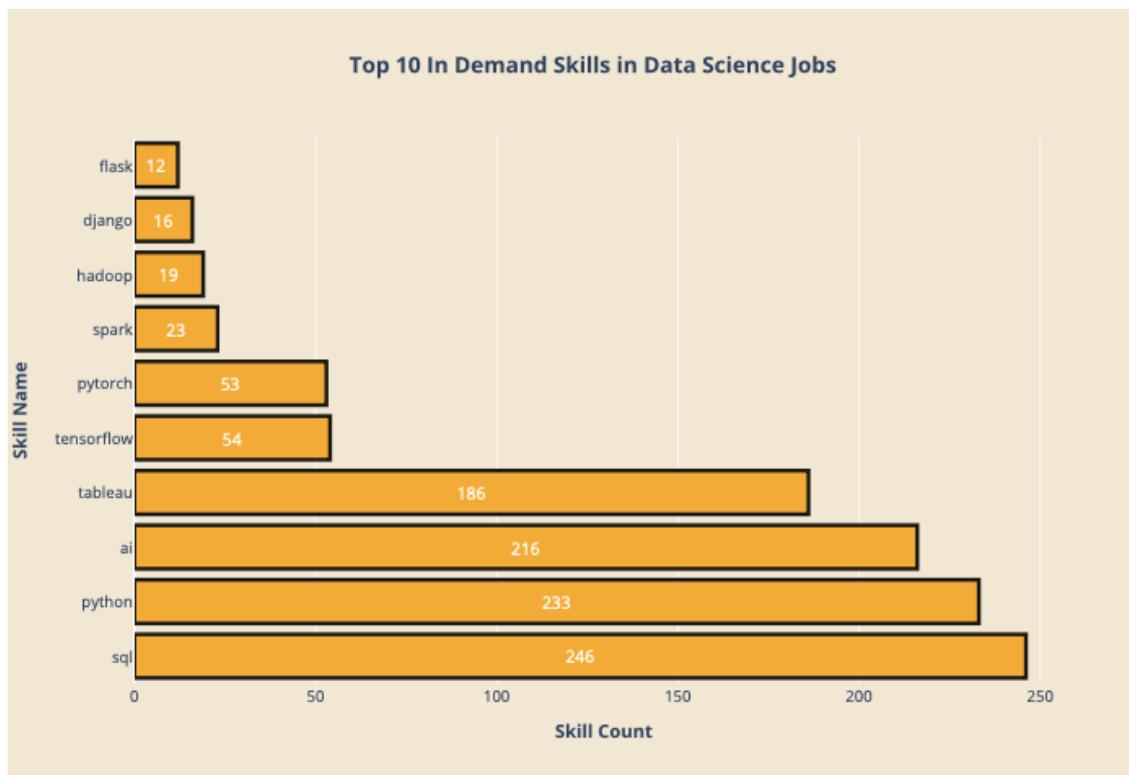
6. Salary Distribution



7. Top 10 Highest paid data science jobs



8. Top 10 in demand skills in data science jobs



Use Cases and Views

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 with the following details:

- Query Editor:
 - SQL tab
 - Text area contains the query: `USE ai_jobs_database;`, `SELECT title, description, date_posted, link FROM JobData WHERE location_id = (SELECT id FROM Location WHERE city='Boston');`
- Result Grid:
 - Shows one row of data from the JobData table.
 - Columns: title, description, date_posted, link.
 - Data:
 - title: Full Season Environmental Education Intern Junior Python Software Engineer
 - description: Reports to: Senior Education Program Manager... We are looking for entry-level or junior software...
 - date_posted: 2022-11-24
 - link: <https://www.linkedin.com/jobs/view/full-season-environmental-education-intern-at-growing-gardens-3376903138?refid=529&ao=1136043&s=5&guid=0000184cb3f47d89a46>

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 with the following details:

- Query Editor:
 - SQL tab
 - Text area contains the query: `USE ai_jobs_database;`, `SELECT title, description, date_posted, link FROM JobData WHERE location_id IN (SELECT id FROM Location WHERE state='MA');`
- Result Grid:
 - Shows multiple rows of data from the JobData table.
 - Columns: title, description, date_posted, link.
 - Data:
 - Full Season Environmental Education Intern Junior Python Software Engineer
 - Summer 2023 Internship - Application Developer Intern
 - Broker Intern
 - SPRING 2023 INTERNSHIPS
 - GHU 2023 Spring/Summer Internship Program
 - Spring 2023 Student Internship Program Intern
 - Capital Markets Summer Internship 2023
 - Battery Data Analyst Internship, Spring 2023 (B...
 - Marketing & Gameday Presentation Intern
 - Descriptions and links for each job listing are provided in the description column.

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)
```

city
Anchorage
Fairbanks
Gainesville
Hornosassa 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	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...	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');

```

Result Grid | Filter Rows: Search | Export:

title	description	date_posted	link
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... NULL	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... NULL	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... NULL	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... NULL	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... NULL	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... NULL	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... NULL	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... NULL	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... NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1510&ao=1110586&s=58&guid=00000184cb49b8baec32t	
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1610&ao=1110586&s=58&guid=00000184cb4bbb1ead15b6	
Sales Development Representative - Remote US	This is a REMOTE Position. To be con... NULL	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... NULL	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... NULL	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... NULL	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... NULL	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... 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=00000184cb42705d886090	
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=00000184cb44b530a0f1e6	
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=00000184cb45e0db9fb1f1	
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=00000184cb4707b0a71c5f	
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=00000184cb4822bf52391	
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=00000184cb49b8baec32t	
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=00000184cb4bbb1ead15b6	
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=00000184cb4c3faab2b66	
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=00000184cb4e1243a3aaet	
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=00000184cb4f43c5a94c35i	
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=00000184cb5087a7ac9c6c	
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=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');
```

100% 56:5

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-3351632613?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-33742990002

10. Select jobs from companies with revenue -> 1 to 5 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=00000184cb446530a0f1e6
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=00000184cb45e0db9fb1f
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=00000184cb4822bfaf52391
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);

```

100% 64:6

Result Grid Filter Rows: Search Export:

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=1110586&s=58&guid=00000184cb3b65688ef6df5
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=804&ao=1110586&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=1110586&s=58&guid=00000184cb4397b7855b0f7
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1004&ao=1110586&s=58&guid=00000184cb44b530a0f1e6
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1104&ao=1110586&s=58&guid=00000184cb45e0db9fb1f1
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1204&ao=1110586&s=58&guid=00000184cb4707ba71c55
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1304&ao=1110586&s=58&guid=00000184cb4822bf52391
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1404&ao=1110586&s=58&guid=00000184cb495c538955c7
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1504&ao=1110586&s=58&guid=00000184cb49b8bae3c2t
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1604&ao=1110586&s=58&guid=00000184cb4bb1ead15b1
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1704&ao=1110586&s=58&guid=00000184cb4ce3faab2b86
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1804&ao=1110586&s=58&guid=00000184cb4e1243a3eaat
2023 Data Science Fellowship	Overview The Institute for Defense Ana...	NULL	https://www.glassdoor.com/partner/jobListing.htm?pos=1904&ao=1110586&s=58&guid=00000184cb4f43c5a94c35i

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>100000 AND category='salary');

```

100% 9:5

Result Grid Filter Rows: Search Export:

title	description	date_posted	link
► Intern	Breakwater Strategy, a boutique strateg...	2022-11-14	https://www.linkedin.com/jobs/view/intern-at-breakwater-strategy-3357273629?refId=FX4gOWSoIv9%2FbjMc0u8hL
Programming Intern - Spring 2023	IMT Insurance is now accepting applica...	2022-11-03	https://www.linkedin.com/jobs/view/programming-intern-spring-2023-at-imt-insurance-3341095584?refId=L%2BQrU
Business Development Intern	Infinity Worlds Inc. is seeking an enthu...	2022-11-08	https://www.linkedin.com/jobs/view/business-development-intern-at-infinity-worlds-llc-33429836147?refId=xxw6DtRmh
Development Intern	Southfield, MI Job Number: MI #2223... NULL		https://www.linkedin.com/jobs/view/development-intern-at-american-lung-association-33832190967?refId=e0h3Qlr%
Spring Intern, Audience Development - Part-time	Who We Are SiriusXM and its brands (P... NULL	2022-11-30	https://www.linkedin.com/jobs/view/spring-intern-audience-development-part-time-at-stitcher-3345664487refId=e0t
Summer Internship 2023 - Software Engineering - Flo...	Why engineering at Stryker? At Stryker... NULL	2022-10-14	https://www.linkedin.com/jobs/view/summer-internship-2023-software-engineering-florida-at-stryker-3351056113?refId=Fx4gOWSoIv9%2FbjMc0u8hL
Data Intelligence Internship [Summer 2023]	Cohen & Company Certified Public Acc... NULL	2022-10-23	https://www.linkedin.com/jobs/view/data-intelligence-internship-summer-2023-at-cohen-company-3360945272?refId=refId
Development Intern	Summary Title:Development Intern ID:... NULL	2022-10-28	https://www.linkedin.com/jobs/view/development-intern-at-grubb-properties-3370194775?refId=ud7W3tmChox%2
User Experience Intern- OrangeWorks (Spring Semester)	POSITION PURPOSE The OrangeWor... NULL	2022-11-15	https://www.linkedin.com/jobs/view/user-experience-intern-orangeworks-spring-semester-at-the-home-depot-33302e
Data Intelligence Internship [Summer 2023]	Cohen & Company Certified Public Acc... NULL	2022-10-23	https://www.linkedin.com/jobs/view/data-intelligence-internship-summer-2023-at-cohen-company-3360942499?refId=refId
Internship	VW. Two letters. Endless opportunities... NULL	2022-11-16	https://www.linkedin.com/jobs/view/internship-at-volkswagen-of-america-inc-3359175011?refId=L%2FxOJ63ahoGe
Data Intelligence Internship [Summer 2023]	Cohen & Company Certified Public Acc... NULL	2022-10-24	https://www.linkedin.com/jobs/view/data-intelligence-internship-summer-2023-at-cohen-company-3361365649?refId=refId
Intern	Overview NISA Investment Advisors, LL... NULL	2022-10-18	https://www.linkedin.com/jobs/view/intern-at-nisa-investment-advisors-llc-3356945749?refId=FX4gOWSoIv9%2FbjMc0u8hL
Stryker, Summer Internship 2023 - Software Engineer...	This role is with Stryker. WayUp is part... NULL	2022-11-24	https://www.linkedin.com/jobs/view/stryker-summer-internship-2023-software-engineering-application-via-wayup-at-stryker-3345645187refId=Rz4
Spring Intern, Audience Development - Part-time	Who We Are SiriusXM and its brands (P... NULL	2022-11-30	https://www.linkedin.com/jobs/view/spring-intern-audience-development-part-time-at-stitcher-3345645187refId=Rz4
Development Intern	New York, Job Number: NYC #2223-02... NULL	2022-11-17	https://www.linkedin.com/jobs/view/development-intern-at-american-lung-association-3363827714?refId=w%2F0bn7
Human Resources Recruitment Internship	Museum of Science, Boston www.mos.... NULL	2022-11-18	https://www.linkedin.com/jobs/view/human-resources-recruitment-internship-at-museum-of-science-3364120981?refId=refId
Intern	Infinity Worlds Inc. is seeking an enthu... NULL	2022-11-21	https://www.linkedin.com/jobs/view/intern-at-infinity-worlds-llc-3363413595?refId=%2F329Qh5S2AddzRTQM0Rtg%

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%');

```

100% 106:4

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
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-intern-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 stat...	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');

```

100%

Result Grid Filter Rows: Search Export: Fetch rows:

```

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=aAGZNET
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=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-3379445760?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-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=%2BQrlU%2FrjYYyzv1AVJqjZTA%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-32280482?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=00000184cb4bb1ead15b6
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-in-new-york-city-nyc-new-york-ny-usa/	

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. 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 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-in-new-york-city-nyc-new-york-ny-usa/

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 with the following details:

- Schemas:** The current schema is 'sakila'.
- Code Editor:** The code being run is:


```

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
141
142
      
```
- Result Grid:** The results of the query show job listings for Massachusetts:

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 - NLP	HTC Global Services wants you. Come build new...	2022-12-01	https://www.linkedin.com/jobs/view/da...
Data Analyst	Title: Business Intelligence Analyst. Position De...	2022-12-02	https://www.linkedin.com/jobs/view/da...
Data Analyst	HTC Global Services wants you. Come build new...	2022-12-02	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...
- Message Bar:** Shows 'Read Only' status.
- System Tray:** Shows battery level at 100%, time as 22:28, and 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 with the following details:

- Schemas:** The current schema is 'sakila'.
- Code Editor:** The code being run is:


```

132   );
133
134 • 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
      
```
- Result Grid:** The results of the query show cities with the lowest tax rates:

city
Anchorage
Fairbanks
Gainesville
Homosassa Springs
Jacksonville
Key West
Lake City
Lakeland
Naples
Ocala
Orlando
- Message Bar:** Shows 'Read Only' status.
- System Tray:** Shows battery level at 100%, time as 22:30, and date as 14/12/2022.

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. 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 Schema dropdown is set to 'sakila'. The main area displays a query editor with the following SQL 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 result grid shows the output of the last query, listing various job posts. The columns are title, description, date_posted, and link. The results include:

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...	2022-11-30	https://www.glassdoor.com/partner/jo...
Data Analyst	Data Analyst Contract-to-Hire Remote - Based i...	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...
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...
Business Data Analyst	2022-75205 Asurion Data Science Internship - ...	2022-12-04	https://www.linkedin.com/jobs/view/d...
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 fetch as 0ms.

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 Administration, Schemas, and Information, with 'Schema: sakila' selected. 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 data from the 'jobs_low_living_cost' view:

	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 analysis ...	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-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%, and the system tray indicates battery level, signal strength, and network connection.

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 * FROM (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 the results of the query, listing various job titles, descriptions, posting dates, and links. One row is highlighted:

title	description	date_posted	link
Data Scientist	Grammariy is excited to offer a remote-first hyb...	2022-12-02	https://www.linkedin.com/jobs/view/data-scie...
Software Engineer, Machine Learning (Grammarly)	Grammariy is excited to offer a remote-first hyb...	2022-12-02	https://www.linkedin.com/jobs/view/software...
Data Analytics Analyst	What Data Analytics contributes to Cardinal He...	2022-12-07	https://www.linkedin.com/jobs/view/data-ana...
Data Analyst	Must-haves 5 years in enterprise data analysis ...	2022-12-12	https://www.linkedin.com/jobs/view/data-ana...
Data Analyst I	As a member of the Employee Success Data tea...	2022-11-14	https://www.linkedin.com/jobs/view/data-ana...
Data Analyst	Data Analyst Contract or Contract-To-Hire Re...	2022-11-30	https://www.linkedin.com/jobs/view/data-ana...
Data Analyst, QMS	Join the fight against cancer. Data Analyst, QM...	2022-11-30	https://www.linkedin.com/jobs/view/data-ana...
NGSE Data Scientist	Candidates can be based anywhere in the US. ...	2022-12-02	https://www.linkedin.com/jobs/view/ngse-dat...
Principal Data Scientist	Principal Data Scientist ⚡ HealthTech Start ...	2022-12-02	https://www.linkedin.com/jobs/view/principa...
Senior Data Analyst	AcuityMD is the first software and data platfor...	2022-12-02	https://www.linkedin.com/jobs/view/senior-de...
- Information:** Schema: sakila.
- Toolbar:** Includes icons for file operations, search, and help.

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
135
136 • select * from skills_jobs_data;
137
138 • CREATE VIEW jobs_51_200_emp AS
139     SELECT title, description, date_posted, link FROM JobData
140     WHERE company_id IN (SELECT id FROM Company WHERE size='51 to 200 Employees');
141
142 • select * from jobs_51_200_emp;
      
```
- Result Grid:** Shows the results of the query, listing two job entries:

title	description	date_posted	link
Senior Principal AI Software Engineer - DRI	Job Description: President Edge is seeking a Se...	NULL	https://www.glassdoor.com/partner/joblisting...
Senior Data Analyst	Welcome to Pine Park Health! About Us Pine...	NULL	https://www.glassdoor.com/partner/joblisting...
- Information:** Schema: sakila.
- Toolbar:** Includes icons for file operations, search, and help.

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');
```

MySQL Workbench Screenshot:

```

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 shows the following data:

title	description	date_posted	link
Machine Learning Engineer, Sense Maps - SPG	Summary The Sense Maps team develops mac...	2022-12-02	https://www.linkedin.com/jobs/view/machine-le...
Data Scientist - Batteries	Summary Do you have a passion for invention ...	2022-12-06	https://www.linkedin.com/jobs/view/data-scienc...
AIML - ML Infrastructure Software Engineer, M...	Summary Imagine what you could do here. At ...	2022-12-08	https://www.linkedin.com/jobs/view/aiml-ml-infr...
AIML - UI Engineer, AIML Data	Summary The vision for the AIML Data organiz...	2022-12-09	https://www.linkedin.com/jobs/view/aiml-ui-eng...
Data Software Engineer - Camera Hardware	Summary Apple builds cameras at a scale that...	2022-12-03	https://www.linkedin.com/jobs/view/data-softw...
Data Software Engineer - Camera Hardware	Summary Apple builds cameras at a scale that...	2022-12-03	https://www.linkedin.com/jobs/view/data-softw...
AI/ML - Senior Data Engineer, AI/ML Data	Summary The AI/ML Data team is hiring in Seat...	2022-12-03	https://www.linkedin.com/jobs/view/ai-ml-serio...

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');
```

MySQL Workbench Screenshot:

```

1
2 • CREATE VIEW jobs_intern_texas AS
3   SELECT title, description, date_posted, link FROM JobData
4   WHERE employmentType = 'Internship' AND location_id IN (SELECT id FROM Location WHERE state='TX');
5
6
7 • select * from jobs_intern_texas;
8
9 • drop table jobData;
10 • drop view jobs_intern_texas;
11
12 • select * from JobData WHERE id = 3129194093
  
```

The Result Grid shows the following data:

title	description	date_posted	link
Data Scientist Intern	Element Biosciences is a multi-disciplinary startup...	NULL	https://www.linkedin.com/jobs/view/data-scienc...

The Action Output shows the message: 251 23:59:55 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') 0 row(s) affected Duration / Fetch 0.078 sec

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='1to5 billion (USD)');
```

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

- Schemas:** Local instance MySQL57, public_schema, sakila.
- SQL Editor:** Contains the SQL code for creating the 'jobs_revenue_1_5' view.
- Result Grid:** Displays the results of the query, showing job titles, descriptions, posting dates, and links for various roles.
- Toolbar:** Includes icons for file operations, search, and database management.
- Status Bar:** Shows the date and time as 14/12/2022 22:58.

```

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_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

```

title	description	date_posted	link
Collections Requirements Manager (CRM) - Senior...	Senior Level Collections Requirements Manager ...	NULL	https://www.glassdoor.com/partner/joblisting...
Program Manager / AI Research Engineering Ma...	Program Manager / AI Research Engineering Ma...	NULL	https://www.glassdoor.com/partner/joblisting...
Senior Systems Engineer (Data Scientist)	Basic Qualifications : Requires a Bachelor's deg...	NULL	https://www.glassdoor.com/partner/joblisting...
Senior Director, Statistical Programming (Southe...	This is a unique opportunity to join an early-sta...	NULL	https://www.glassdoor.com/partner/joblisting...
Lead Data Scientist	At Odyssey, we believe high expectations are t...	NULL	https://www.glassdoor.com/partner/joblisting...

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);

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

- Schemas:** Local instance MySQL57, public_schema, sakila.
- SQL Editor:** Contains the SQL code for creating the 'jobs_rating_4' view.
- Result Grid:** Displays the results of the query, showing job titles, descriptions, posting dates, and links for various roles.
- Toolbar:** Includes icons for file operations, search, and database management.
- Status Bar:** Shows the date and time as 14/12/2022 22:59.

```

125
126 • CREATE TABLE `skill_jobs_data` (
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_rating_4 AS
137     SELECT title, description, date_posted, link FROM JobData WHERE company_id IN (SELECT id FROM Company WHERE rating>=4.0);
138
139 • select * from jobs_rating_4;
140

```

title	description	date_posted	link
Data Scientist / Principal Data Scientist	Requisition ID: R10046910 Category: Resear...	NULL	https://www.glassdoor.com/partner/joblisting...
Data Science & Engineering - Operations Resea...	Requisition ID: R10053885 Category: Resear...	NULL	https://www.glassdoor.com/partner/joblisting...
Sentinel (GSD) Software Engineer/Data Scienti...	Requisition ID: R10081962 Category: Enginee...	NULL	https://www.glassdoor.com/partner/joblisting...
Manager, Data Science	PRIMARY PURPOSE: Serve Wings Financial by t...	NULL	https://www.glassdoor.com/partner/joblisting...
Senior Principal AI Software Engineer - DRI	Job Description: President Edge is seeking a S...	NULL	https://www.glassdoor.com/partner/joblisting...
Data Link Scientist/Engineer, CTG SE-3, TBCO ...	Overview: Oasis Systems has an exciting oppo...	NULL	https://www.glassdoor.com/partner/joblisting...

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');

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

- Schemas:** Local instance MySQL57 contains the public_schema and sakila databases.
- SQL Editor:** The code pane displays the creation of a table 'skill_jobs_data' and a view 'jobs_salary_100k'. The table has columns skill_id and job_id, with primary keys and foreign keys linking to 'skill_data' and 'jobdata' respectively. The view selects from 'skill_jobs_data' where salary is greater than 100.
- Result Grid:** The results of the 'jobs_salary_100k' query are shown, listing various job titles, descriptions, posting dates, and links.
- Toolbar:** Includes standard database management tools like Import, Export, and SQL Editor.
- Status Bar:** Shows 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 contains the public_schema and sakila databases.
- SQL Editor:** The code pane displays the creation of a table 'skill_jobs_data' and a view 'jobs_python'. The table has columns skill_id and job_id, with primary keys and foreign keys linking to 'skill_data' and 'jobdata' respectively. The view selects from 'skill_jobs_data' where skill_name is like '%python%'.
- Result Grid:** The results of the 'jobs_python' query are shown, listing various job titles, descriptions, posting dates, and links.
- Toolbar:** Includes standard database management tools like Import, Export, and SQL Editor.
- Status Bar:** Shows the date and time as 14/12/2022 23:10.

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.
- SQL Editor:** Contains the following SQL code:


```

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 IN
138   (SELECT id FROM Company WHERE industry='Software Development');
139
140 • select * from jobData;
141
142 • select * from jobs_software;
143
      
```
- Result Grid:** Shows a table with columns: title, description, date_posted, link. The data includes various job listings from LinkedIn.
- Toolbar:** Includes standard MySQL Workbench icons for file operations, database management, and scripting.
- Status Bar:** Displays system information like battery level, network status, and date/time (23:11 14/12/2022).

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.
- SQL Editor:** Contains the following SQL code:


```

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_python AS
137   SELECT title, description, date_posted, link FROM JobData WHERE company_id IN
138   (SELECT id FROM Company WHERE industry='Software Development') AND id IN
139   (SELECT id from skills_jobs_data where skill_id IN (SELECT id FROM skill_data WHERE skill_name like '%python%'));
140
141 • select * from jobData;
142
143 • select * from jobs_software_python;
144
      
```
- Result Grid:** Shows a table with columns: title, description, date_posted, link. The data includes specific job listings related to Python and machine learning.
- Toolbar:** Includes standard MySQL Workbench icons for file operations, database management, and scripting.
- Status Bar:** Displays system information like battery level, network status, and date/time (23:13 14/12/2022).

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.
- Query Editor:** Contains the SQL code for creating the 'jobs_apple_aiml' view.
- Result Grid:** Shows the results of the query, listing a single job entry for 'AI/ML - Senior Data Engineer, AI/ML Data'.
- Toolbar:** Includes icons for file operations, database management, and help.
- Status Bar:** Displays system information like battery level, network status, and date/time.

```

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');

select * from skills_jobs_data;

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');

select * from JobData;
select * from jobs_apple_aiml;

```

17. Select Data Analyst I TalentBurst jobs in Augusta.

```

CREATE VIEW jobs_da_augusta 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='TalentBurst, an INC 5000 company')
and location_id in (SELECT id FROM Location WHERE city = 'Augusta');

```

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

- Schemas:** Local instance MySQL57, public_schema, sakila.
- Query Editor:** Contains the SQL code for creating the 'jobs_da_augusta' view.
- Result Grid:** Shows the results of the query, listing a single job entry for 'Data Analyst I'.
- Toolbar:** Includes icons for file operations, database management, and help.
- Status Bar:** Displays system information like battery level, network status, and date/time.

```

CREATE VIEW jobs_da_augusta 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='TalentBurst, an Inc 5000 company')
and location_id in (SELECT id FROM Location WHERE city = 'Augusta');

select * from JobData WHERE title LIKE '%Data Analyst%';
SELECT * FROM Company WHERE id = 503;
select * from jobs_da_augusta;
drop table jobData;
drop view jobs_da_augusta;

```

18. Select entry level jobs in New York City

```

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

```

The screenshot shows the MySQL Workbench interface with a SQL editor window containing the following code:

```

1
2
3 • CREATE VIEW jobs_entrylevel_newyork AS
4     SELECT title, description, date_posted, link, location_id, seniority_level FROM JobData WHERE
5         seniority_level = "Entry Level" AND location_id IN (SELECT id FROM Location
6         WHERE city='New York City Metropolitan Area');
7
8
9 • select * from jobs_entrylevel_newyork;
10
11 • drop table jobData;
12 • drop view jobs_entrylevel_newyork;

```

Below the code, the results grid displays several job entries:

title	description	date_posted	link	location_id	seniority_level
Data Scientist	Grammarly is excited to offer a remote-first hyb...	2022-12-02	https://www.linkedin.com/jobs/view/data-scienc...	530	Entry level
Data Scientist, CV/NLP	About Ancestry: When you join Ancestry, you...	2022-12-12	https://www.linkedin.com/jobs/view/data-scienc...	530	Entry level
Python Developer	Contract \$70-90/hr ,Utah This company is a...	2022-11-19	https://www.linkedin.com/jobs/view/python-deve...	530	Entry level

The status bar at the bottom indicates the duration of 0.125 sec.

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

```
CREATE VIEW entry_level_salary AS SELECT title, description, date_posted, link FROM JobData WHERE seniority_level = 'Entry level'
AND id IN (SELECT job_id FROM derived_data WHERE Category = 'Salary'
AND value BETWEEN 50 and 100);
```

The screenshot shows the MySQL Workbench interface with a SQL editor window containing the following code:

```

1
2
3 • CREATE VIEW entry_level_salary AS
4     SELECT title, description, date_posted, link FROM JobData
5     WHERE seniority_level = 'Entry level'
6     AND id IN (SELECT job_id FROM derived_data WHERE Category = 'Salary'
7     AND value BETWEEN 50 and 100);
8
9
10 • select * from entry_level_salary;
11
12 • drop table jobData;
13 • drop view jobs_entrylevel_newyork;
14
15 • select * from JobData WHERE id = 3120101003

```

Below the code, the results grid displays several job entries:

title	description	date_posted	link
Data Analyst	Duties: The responsibilities may include, but will ...	2022-05-27	https://www.linkedin.com/jobs/view/data-analy...
Data Analyst	Duties The successful candidate will turn data in...	2022-06-24	https://www.linkedin.com/jobs/view/data-analy...
Data Analyst	Duties Strong data and analytic skills, knowledg...	2022-08-01	https://www.linkedin.com/jobs/view/data-analy...
Data Analyst	Description: Data Analyst: The candidate will w...	2022-10-17	https://www.linkedin.com/jobs/view/data-analy...
Data Analyst	DATA ANALYST Job Summary: Talent Software...	2022-10-13	https://www.linkedin.com/jobs/view/data-analy...

The status bar at the bottom indicates the duration of 0.109 sec.

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='American Technology Consulting - ATC');
```

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, Help, and a toolbar with various icons. The left sidebar has a Navigator section with Schemas (public_schema, sakila), Tables, Views, Stored Procedures, and Functions. The main area contains a SQL Editor tab titled "SQL File 3*" with the following code:

```
1 • CREATE VIEW jobs_ds_pacific AS
2   SELECT title, description, date_posted, link FROM JobData WHERE title LIKE '%Data Analyst %'
3   AND company_id IN (SELECT id FROM Company WHERE name='Pacific Northwest National Laboratory')
4   AND location_id IN (SELECT id FROM Location WHERE city = 'Augusta');
5
6 • CREATE VIEW jobs_atc_h1b AS
7   SELECT title, description, date_posted, link, company_id FROM JobData WHERE description LIKE '%H1B%'
8   AND company_id IN (SELECT id FROM Company WHERE name='American Technology Consulting - ATC');
9
10 • select * from JobData;
11 • SELECT * FROM company where id = 903;
12 • select * from jobs_atc_h1b;
```

The Results Grid shows two rows of data:

	title	description	date_posted	link	company_id
▶	Data Analyst	Job Title: Entry Level Business Analyst / Product...	2022-01-01 12:00:00	https://www.linkedin.com/jobs/view/data-analy...	903
▶	Data Analyst	Job Title: Business Analyst / Data Analyst (U.S....	2022-01-01 12:00:00	https://www.linkedin.com/jobs/view/data-analy...	903

The bottom status bar shows the session details: Object Info, Session, Read Only, Duration / Fetch 0.062 sec, ENG 23:42, INTL 14/12/2022.

In []: