Task 1-4

```
create database CareerHub;
use CareerHub;

-- Create Companies table
CREATE TABLE Companies (
    CompanyID INT PRIMARY KEY,
    CompanyName VARCHAR(255),
    Location VARCHAR(255)
);

-- Create Jobs table
CREATE TABLE Jobs (
    JobID INT PRIMARY KEY,
    CompanyID INT,
    JobTitle VARCHAR(255),
    JobDescription TEXT,
    JobLocation VARCHAR(255),
    Salary DECIMAL,
    JobType VARCHAR(255),
    PostedDate DATETIME,
    FOREIGN KEY (CompanyID) REFERENCES Companies(CompanyID)
);

-- Create Applicants table
CREATE TABLE Applicants (
    ApplicantID INT PRIMARY KEY,
    FirstName VARCHAR(255),
    LastName VARCHAR(255),
    Email VARCHAR(255),
    Phone VARCHAR(255),
```

```
    Resume TEXT
);

-- Create Applications table
CREATE TABLE Applications (
    ApplicationID INT PRIMARY KEY,
    JobID INT,
    ApplicantID INT,
    ApplicationDate DATETIME,
    CoverLetter TEXT,
    FOREIGN KEY (JobID) REFERENCES Jobs(JobID),
    FOREIGN KEY (ApplicantID) REFERENCES Applicants(ApplicantID)
);



-- Inserting sample data for Indian cities with updated columns

-- Companies
INSERT INTO Companies (CompanyID, CompanyName, Location) VALUES
(1, 'TechCorp', 'Delhi'),
(2, 'InnoTech', 'Chennai'),
(3, 'SoftWareTech', 'Pune'),
(4, 'TechIndia', 'Mumbai'),
(5, 'InnoTech India', 'Bangalore');

-- Jobs
INSERT INTO Jobs (JobID, CompanyID, JobTitle, JobDescription, JobLocation, Salary, JobType,
PostedDate) VALUES
(1, 1, 'Software Engineer', 'Develop software applications', 'CityX', 80000, 'Full-time', '2023-01-01
08:00:00'),
(2, 1, 'Data Scientist', 'Analyze and interpret complex data sets', 'CityX', 90000, 'Full-time', '2023-02-
01 10:30:00'),
```

(3, 2, 'Web Developer', 'Build and maintain websites', 'CityY', 70000, 'Part-time', '2023-03-01 12:45:00'),

(4, 4, 'Java Developer', 'Develop Java applications', 'Mumbai', 85000, 'Full-time', '2023-04-01 09:15:00'),

(5, 5, 'Data Analyst', 'Analyze and interpret data sets', 'Bangalore', 75000, 'Part-time', '2023-05-01 11:20:00');

-- Applicants

INSERT INTO Applicants (ApplicantID, FirstName, LastName, Email, Phone, Resume) VALUES

(1, 'John', 'Doe', 'john.doe@email.com', '123-456-7890', 'John_Doe_Resume.pdf'),

(2, 'Jane', 'Smith', 'jane.smith@email.com', '987-654-3210', 'Jane_Smith_Resume.doc'),

(3, 'Rahul', 'Sharma', 'rahul.sharma@email.com', '987-654-3210', 'Rahul_Sharma_Resume.docx'),

(4, 'Priya', 'Patel', 'priya.patel@email.com', '123-456-7890', 'Priya_Patel_Resume.pdf'),

(5, 'Sandeep', 'Kumar', 'sandeep.kumar@email.com', '789-012-3456', 'Sandeep_Kumar_Resume.doc');

-- Applications

INSERT INTO Applications (ApplicationID, JobID, ApplicantID, ApplicationDate, CoverLetter) VALUES

(1, 1, 1, '2023-01-15 14:30:00', 'Cover Letter 1'),

(2, 2, 2, '2023-02-15 15:45:00', 'Cover Letter 2'),

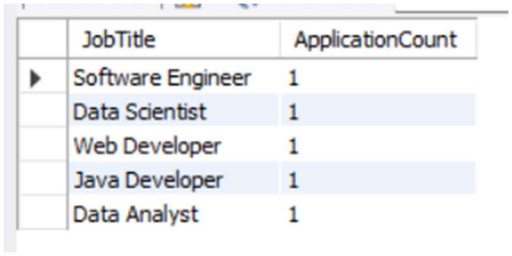
(3, 4, 3, '2023-04-15 11:20:00', 'Cover Letter 3'),

(4, 5, 4, '2023-05-15 10:10:00', 'Cover Letter 4'),

(5, 3, 5, '2023-03-15 13:05:00', 'Cover Letter 5');

-- Task 5: Count applications for each job listing

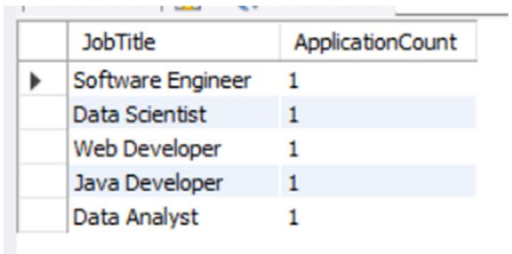
```
SELECT
    j.JobTitle,
    COUNT(a.ApplicationID) AS ApplicationCount
FROM
    Jobs j
LEFT JOIN Applications a ON j.JobID = a.JobID
GROUP BY
    j.JobID, j.JobTitle;
```



JobTitle	ApplicationCount
Software Engineer	1
Data Scientist	1
Web Developer	1
Java Developer	1
Data Analyst	1

-- Task 6: Retrieve job listings within a salary range

```
SELECT
    j.JobTitle,
    c.CompanyName,
    j.JobLocation,
    j.Salary
FROM
    Jobs j
JOIN Companies c ON j.CompanyID = c.CompanyID
WHERE
    j.Salary BETWEEN 60000 AND 80000;
```



JobTitle	ApplicationCount
Software Engineer	1
Data Scientist	1
Web Developer	1
Java Developer	1
Data Analyst	1

-- Task 7: Retrieve job application history for a specific applicant

```
-- Assuming parameter @ApplicantID
SELECT
    j.JobTitle,
    c.CompanyName,
    a.ApplicationDate
FROM
    Applications a
JOIN Jobs j ON a.JobID = j.JobID
JOIN Companies c ON j.CompanyID = c.CompanyID
WHERE
    a.ApplicantID = 1;
```

	JobTitle	CompanyName	ApplicationDate
▶	Software Engineer	TechCorp	2023-01-15 14:30:00

-- Task 8: Calculate and display the average salary offered by all companies

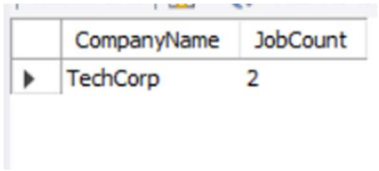
```
SELECT
    AVG(j.Salary) AS AverageSalary
FROM
    Jobs j
WHERE
    j.Salary > 0;
```

	AverageSalary
▶	80000.0000

-- Task 9: Identify the company that has posted the most job listings

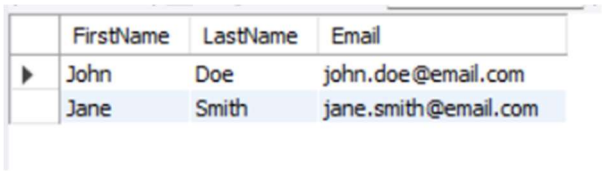
```
SELECT
    c.CompanyName,
    COUNT(j.JobID) AS JobCount
FROM
```

```
    Companies c
JOIN Jobs j ON c.CompanyID = j.CompanyID
GROUP BY
    c.CompanyID, c.CompanyName
ORDER BY
    JobCount DESC
LIMIT 1;
```



CompanyName	JobCount
TechCorp	2

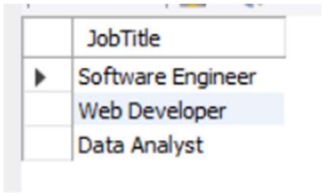
```
-- Task 10: Find applicants with at least 3 years of experience in 'CityX'
SELECT
    a.FirstName,
    a.LastName,
    a.Email
FROM
    Applicants a
JOIN Applications app ON a.ApplicantID = app.ApplicantID
JOIN Jobs j ON app.JobID = j.JobID
JOIN Companies c ON j.CompanyID = c.CompanyID
WHERE
    c.Location = 'Delhi';
```



FirstName	LastName	Email
John	Doe	john.doe@email.com
Jane	Smith	jane.smith@email.com

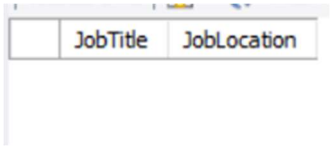
```
-- Task 11: Retrieve distinct job titles with salaries between $60,000 and $80,000
SELECT DISTINCT
    j.JobTitle
FROM
```

```
    Jobs j
WHERE
    j.Salary BETWEEN 60000 AND 80000;
```



	JobTitle
▶	Software Engineer
	Web Developer
	Data Analyst

```
-- Task 12: Find jobs that have not received any applications
SELECT
    j.JobTitle,
    j.JobLocation
FROM
    Jobs j
LEFT JOIN Applications a ON j.JobID = a.JobID
WHERE
    a.JobID IS NULL;
```



	JobTitle	JobLocation

```
-- Task 13: Retrieve a list of job applicants along with the companies they have applied to
SELECT
    a.FirstName,
    a.LastName,
    a.Email,
    c.CompanyName,
    j.JobTitle
FROM
    Applicants a
JOIN Applications app ON a.ApplicantID = app.ApplicantID
JOIN Jobs j ON app.JobID = j.JobID
JOIN Companies c ON j.CompanyID = c.CompanyID;
```

FirstName	LastName	Email	CompanyName	JobTitle
John	Doe	john.doe@email.com	TechCorp	Software Engineer
Jane	Smith	jane.smith@email.com	TechCorp	Data Scientist
Rahul	Sharma	rahul.sharma@email.com	TechIndia	Java Developer
Priya	Patel	priya.patel@email.com	InnoTech India	Data Analyst
Sandeep	Kumar	sandeep.kumar@email.com	InnoTech	Web Developer

-- Task 14: Retrieve a list of companies along with the count of jobs they have posted

```
SELECT
    c.CompanyName,
    COUNT(j.JobID) AS JobCount
FROM
    Companies c
LEFT JOIN Jobs j ON c.CompanyID = j.CompanyID
GROUP BY
    c.CompanyID, c.CompanyName;
```

CompanyName	JobCount
TechCorp	2
InnoTech	1
SoftWareTech	0
TechIndia	1
InnoTech India	1

-- **Task 15: List all applicants along with the companies and positions they have applied for**

```
SELECT
    a.FirstName,
    a.LastName,
    a.Email,
    c.CompanyName,
    j.JobTitle
FROM
    Applicants a
LEFT JOIN Applications app ON a.ApplicantID = app.ApplicantID
```

LEFT JOIN Jobs j ON app.JobID = j.JobID

LEFT JOIN Companies c ON j.CompanyID = c.CompanyID;

FirstName	LastName	Email	CompanyName	JobTitle
John	Doe	john.doe@email.com	TechCorp	Software Engineer
Jane	Smith	jane.smith@email.com	TechCorp	Data Scientist
Rahul	Sharma	rahul.sharma@email.com	TechIndia	Java Developer
Priya	Patel	priya.patel@email.com	InnoTech India	Data Analyst
Sandeep	Kumar	sandeep.kumar@email.com	InnoTech	Web Developer

-- Task 16: Find companies that have posted jobs with a salary higher than the average salary

```
SELECT
    c.CompanyName,
    j.JobTitle,
    j.Salary
FROM
    Companies c
JOIN Jobs j ON c.CompanyID = j.CompanyID
WHERE
    j.Salary > (SELECT AVG(Salary) FROM Jobs WHERE Salary > 0);
```

CompanyName	JobTitle	Salary
TechCorp	Data Scientist	90000
TechIndia	Java Developer	85000

-- Task 17: Display a list of applicants with their names and a concatenated string of their city and state

```
SELECT
    a.FirstName,
    a.LastName,
    CONCAT(c.Location, ', ', 'State') AS CityAndState
FROM
    Applicants a
JOIN Applications app ON a.ApplicantID = app.ApplicantID
```

```
JOIN Jobs j ON app.JobID = j.JobID
JOIN Companies c ON j.CompanyID = c.CompanyID;
```

FirstName	LastName	CityAndState
John	Doe	Delhi, State
Jane	Smith	Delhi, State
Rahul	Sharma	Mumbai, State
Priya	Patel	Bangalore, State
Sandeep	Kumar	Chennai, State

-- Task 18: Retrieve a list of jobs with titles containing either 'Developer' or 'Engineer'

```
SELECT
    JobTitle
FROM
    Jobs
WHERE
    JobTitle LIKE '%Developer%' OR JobTitle LIKE '%Engineer%';
```

JobTitle
Software Engineer
Web Developer
Java Developer

-- Task 19: Retrieve a list of applicants and the jobs they have applied for

```
SELECT
    a.FirstName,
    a.LastName,
    a.Email,
    c.CompanyName,
    j.JobTitle
FROM
    Applicants a
JOIN Applications app ON a.ApplicantID = app.ApplicantID
JOIN Jobs j ON app.JobID = j.JobID
JOIN Companies c ON j.CompanyID = c.CompanyID
```

```
UNION ALL

-- Applicants who have not applied
SELECT
    a.FirstName,
    a.LastName,
    a.Email,
    NULL AS CompanyName,
    NULL AS JobTitle
FROM
    Applicants a
WHERE
    NOT EXISTS (SELECT 1 FROM Applications app WHERE a.ApplicantID = app.ApplicantID);
```

FirstName	LastName	Email	CompanyName	JobTitle
John	Doe	john.doe@email.com	TechCorp	Software Engineer
Jane	Smith	jane.smith@email.com	TechCorp	Data Scientist
Rahul	Sharma	rahul.sharma@email.com	TechIndia	Java Developer
Priya	Patel	priya.patel@email.com	InnoTech India	Data Analyst
Sandeep	Kumar	sandeep.kumar@email.com	InnoTech	Web Developer

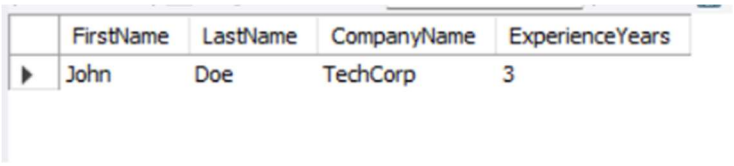
-- Task 20: List all combinations of applicants and companies with specific city and more than 2 years of experience

```
ALTER TABLE Applicants
ADD COLUMN ExperienceYears INT;

UPDATE Applicants
SET ExperienceYears = 3
WHERE ApplicantID = 1;

SELECT
    a.FirstName,
    a.LastName,
```

```
    c.CompanyName,
    a.ExperienceYears
FROM
    Applicants a
JOIN Applications app ON a.ApplicantID = app.ApplicantID
JOIN Jobs j ON app.JobID = j.JobID
JOIN Companies c ON j.CompanyID = c.CompanyID
WHERE
    c.Location = 'Delhi'
    AND a.ExperienceYears > 2;
```



	FirstName	LastName	CompanyName	ExperienceYears
▶	John	Doe	TechCorp	3