

Coding Challenge -2 Career Hub

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Tasks:

1. Provide a SQL script that initializes the database for the Job Board scenario "CareerHub".

```
4      -- Q-1
5 •    create database CareerHub;
6 •    use CareerHub;
7
```

2. Create tables for Companies, Jobs, Applicants and Applications

```
8      -- Q-2
9 •    create table Companies(CompanyID int primary key auto_increment,CompanyName varchar(30),
10     Location varchar(30));
11
12 •    create table Jobs(JobID int primary key auto_increment,CompanyID int,JobTitle varchar(30),
13     JobDescription text,JobLocation varchar(30),salary float,JobType varchar(30),
14     PostedDate datetime, foreign key (CompanyID) references Companies(CompanyID));
15
16 •    create table Applicants(ApplicantID int primary key auto_increment,first_name varchar(30),
17     last_name varchar(30),Email varchar(30),Phone varchar(30),Resume text);
18
19 •    create table Applications(ApplicationID int primary key auto_increment,JobID int,ApplicantID int,
20     ApplicationDate datetime,CoverLetter text,foreign key (JobID) references Jobs(JobID),
21     foreign key(ApplicantID) references Applicants(ApplicantID));
```

5. Write an SQL query to count the number of applications received for each job listing in the "Jobs" table. Display the job title and the corresponding application count. Ensure that it lists all jobs, even if they have no applications.

```
71      -- Q-5
72 •    SELECT J.JobID, J.JobTitle, COUNT(A.ApplicationID) AS ApplicationCount
73      FROM Jobs J
74     LEFT JOIN Applications A ON J.JobID = A.JobID
75     GROUP BY J.JobID, J.JobTitle
76     ORDER BY J.JobID;
```

JobID	JobTitle	ApplicationCount
1	Software Engineer	1
2	Data Analyst	1
3	IT Support Specialist	1
4	Marketing Manager	1
5	Web Developer	1

6. Develop an SQL query that retrieves job listings from the "Jobs" table within a specified salary range. Allow parameters for the minimum and maximum salary values. Display the job title, company name, location, and salary for each matching job.

```

78  -- Q-6
79  •  select min(salary), max(salary) from Jobs;
80  •  SELECT J.JobTitle, C.CompanyName, J.JobLocation, J.Salary
81  FROM Jobs J
82  INNER JOIN Companies C ON J.CompanyID = C.CompanyID
83  WHERE J.Salary BETWEEN 60000 AND 95000;
84

```

JobTitle	CompanyName	JobLocation	Salary
Software Engineer	ABC Corporation	New York	80000
Data Analyst	XYZ Industries	San Francisco	75000
IT Support Specialist	Tech Solutions Ltd	London	60000
Marketing Manager	Global Innovations Inc	Tokyo	90000
Web Developer	Data Systems Co.	Sydney	70000
Network Administrator	Innovate IT Services	Paris	65000
Business Analyst	SmartTech Enterprises	Berlin	72000
Environmental Scientist	EcoTech Solutions	Toronto	85000

7. Write an SQL query that retrieves the job application history for a specific applicant. Allow a parameter for the ApplicantID, and return a result set with the job titles, company names, and application dates for all the jobs the applicant has applied to.

```

85  -- Q-7
86  •  SELECT J.JobTitle, C.CompanyName, A.ApplicationDate
87  FROM Applications A
88  INNER JOIN Jobs J ON A.JobID = J.JobID
89  INNER JOIN Companies C ON J.CompanyID = C.CompanyID
90  WHERE A.ApplicantID = 7;

```

JobTitle	CompanyName	ApplicationDate
Business Analyst	SmartTech Enterprises	2023-07-15 00:00:00

8. Create an SQL query that calculates and displays the average salary offered by all companies for job listings in the "Jobs" table. Ensure that the query filters out jobs with a salary of zero.

```

92  -- Q-8
93  • SELECT AVG(Salary) AS AverageSalary
94  FROM Jobs
95  WHERE Salary > 0;
96

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

AverageSalary
76000

9. Write an SQL query to identify the company that has posted the most job listings. Display the company name along with the count of job listings they have posted. Handle ties if multiple companies have the same maximum count.

```

97  -- Q-9
98  • SELECT C.CompanyName, COUNT(J.JobID) AS JobCount
99  FROM Companies C
100 JOIN Jobs J ON C.CompanyID = J.CompanyID
101 GROUP BY C.CompanyName
102 ORDER BY JobCount DESC
103 LIMIT 1;

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows: |

CompanyName	JobCount
ABC Corporation	1

10. Find the applicants who have applied for positions in companies located in 'CityX' and have at least 3 years of experience.

```

105  -- Q-10
106  • SELECT DISTINCT A.first_name, A.last_name, A.email, regexp_substr(resume, '[3-9]') as Experience
107  FROM Applicants A
108  INNER JOIN Applications Ap ON A.ApplicantID = Ap.ApplicantID
109  INNER JOIN Jobs J ON Ap.JobID = J.JobID
110  INNER JOIN Companies C ON J.CompanyID = C.CompanyID
111  WHERE C.Location = 'London' AND regexp_substr(resume, '[3-9]');

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

first_name	last_name	email	Experience
Mike	Johnson	mike@example.com	3
Chris	Davis	chris@example.com	3
Olivia	Martinez	olivia@example.com	5

11. Retrieve a list of distinct job titles with salaries between \$60,000 and \$80,000.

```

113  -- Q-11
114  • SELECT DISTINCT JobTitle
115  FROM Jobs
116  WHERE Salary BETWEEN 60000 AND 80000;
117

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

JobTitle
Software Engineer
Data Analyst
IT Support Specialist
Web Developer
Network Administrator
Business Analyst
Accountant

12. Find the jobs that have not received any applications.

```

118  -- Q-12
119  • SELECT JobID, JobTitle
120  FROM Jobs
121  WHERE JobID NOT IN (SELECT DISTINCT JobID FROM Applications);

```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

JobID	JobTitle
NULL	NULL

13. Retrieve a list of job applicants along with the companies they have applied to and the positions they have applied for.

```

123  -- Q-13
124  • SELECT A.first_name, A.last_name, C.CompanyName, J.JobTitle
125  FROM Applicants A
126  JOIN Applications Ap ON A.ApplicantID = Ap.ApplicantID
127  JOIN Jobs J ON Ap.JobID = J.JobID
128  JOIN Companies C ON J.CompanyID = C.CompanyID;

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

first_name	last_name	CompanyName	JobTitle
John	Doe	ABC Corporation	Software Engineer
Jane	Smith	XYZ Industries	Data Analyst
Mike	Johnson	Tech Solutions Ltd	IT Support Specialist
Emily	Brown	Global Innovations Inc	Marketing Manager
Chris	Davis	Data Systems Co.	Web Developer
Sarah	Wilson	Innovate IT Services	Network Administrator
Alex	Garcia	SmartTech Enterprises	Business Analyst

Result 38

14. Retrieve a list of companies along with the count of jobs they have posted, even if they have not received any applications.

```
130      -- Q-14
131 •    SELECT C.CompanyName, COUNT(J.JobID) AS JobCount
132      FROM Companies C
133     LEFT JOIN Jobs J ON C.CompanyID = J.CompanyID
134     LEFT JOIN Applications A ON J.JobID = A.JobID
135     GROUP BY C.CompanyName;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	CompanyName	JobCount
▶	ABC Corporation	1
	XYZ Industries	1
	Tech Solutions Ltd	1
	Global Innovations Inc	1
	Data Systems Co.	1
	Innovate IT Services	1
	SmartTech Enterprises	1

15. List all applicants along with the companies and positions they have applied for, including those who have not applied.

```
137      -- Q-15
138 •    SELECT A.first_name, A.last_name, C.CompanyName, J.JobTitle
139      FROM Applicants A
140     LEFT JOIN Applications Ap ON A.ApplicantID = Ap.ApplicantID
141     LEFT JOIN Jobs J ON Ap.JobID = J.JobID
142     LEFT JOIN Companies C ON J.CompanyID = C.CompanyID;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	first_name	last_name	CompanyName	JobTitle
▶	John	Doe	ABC Corporation	Software Engineer
	Jane	Smith	XYZ Industries	Data Analyst
	Mike	Johnson	Tech Solutions Ltd	IT Support Specialist
	Emily	Brown	Global Innovations Inc	Marketing Manager
	Chris	Davis	Data Systems Co.	Web Developer
	Sarah	Wilson	Innovate IT Services	Network Administrator
	Alex	Garcia	SmartTech Enterprises	Business Analvst

```

144  -- 16
145  • SELECT DISTINCT C.CompanyName
146      FROM Companies C
147      JOIN Jobs J ON C.CompanyID = J.CompanyID
148      WHERE J.Salary > (
149          SELECT AVG(Salary)
150          FROM Jobs
151      );

```

Result Grid

CompanyName
ABC Corporation
Global Innovations Inc
EcoTech Solutions
Sunrise Technologies

```
153 -- 17 (Since there are no columns defined for address,city or state so there is error in running the query)
154 • SELECT first_name, last_name, CONCAT(city, ', ', state) AS Location
155 FROM Applicants;
```

[illegible]

19. Retrieve a list of applicants and the jobs they have applied for, including those who have not applied and jobs without applicants.

```

162  -- 19
163  • SELECT A.first_name, A.last_name, J.JobTitle, C.CompanyName
164  FROM Applicants A
165  LEFT JOIN Applications Ap ON A.ApplicantID = Ap.ApplicantID
166  LEFT JOIN Jobs J ON Ap.JobID = J.JobID
167  LEFT JOIN Companies C ON J.CompanyID = C.CompanyID;

```

first_name	last_name	JobTitle	CompanyName
John	Doe	Software Engineer	ABC Corporation
Jane	Smith	Data Analyst	XYZ Industries
Mike	Johnson	IT Support Specialist	Tech Solutions Ltd
Emily	Brown	Marketing Manager	Global Innovations Inc
Chris	Davis	Web Developer	Data Systems Co.
Sarah	Wilson	Network Administrator	Innovate IT Services
Alex	Garcia	Business Analyst	SmartTech Enterprises

20. List all combinations of applicants and companies where the company is in a specific city and the applicant has more than 2 years of experience. For example: city=Chennai

```

169  -- 20
170  • SELECT A.first_name, A.last_name, regexp_substr(resume, '[2-9]') as Experience, C.CompanyName, C.location
171  FROM Applicants A
172  CROSS JOIN Companies C
173  WHERE regexp_substr(resume, '[2-9]') and
174  C.Location = 'London';

```

first_name	last_name	Experience	CompanyName	location
John	Doe	2	EcoTech Solutions	London
John	Doe	2	Data Systems Co.	London
John	Doe	2	Tech Solutions Ltd	London
Jane	Smith	3	EcoTech Solutions	London
Jane	Smith	3	Data Systems Co.	London
Jane	Smith	3	Tech Solutions Ltd	London
Mike	Johnson	3	EcoTech Solutions	London
