SQL CODING CHALLENGE J223

create database careerhub;

use careerhub;

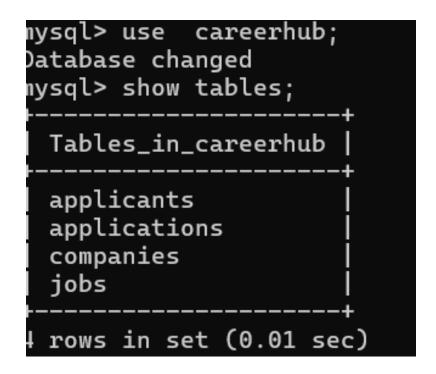
- -- 1. Provide a SQL script that initializes the database for the Job Board scenario "CareerHub".
- -- 2. Create tables for Companies, Jobs, Applicants and Applications.
- -- 3. Define appropriate primary keys, foreign keys, and constraints.

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-- 4. Ensure the script handles potential errors, such as if the database or tables already exist.
create table companies(
companyID int primary key auto_increment,
companyName varchar(50),
location varchar(100));
create table jobs(
jobid int primary key auto_increment,
companyid int,
jobtitle varchar(50),
jobDescription varchar(200),
joblocation varchar(50),
jobsalary decimal(10,2),
jobtype varchar(100),
jobpostdate date,
foreign key(companyid) references companies(companyid)
on delete cascade
alter table jobs auto_increment=100;
create table applicants(
applicantid int primary key auto_increment,
firstname varchar(100),
lastname varchar(100),
email varchar(50),
phone varchar(9),
aresume varchar(200));
alter table applicants auto_increment=1000;
alter table applicants add column experience int;
create table applications(
applicationid int primary key auto_increment,
jobid int,
applicantid int,
applicationdate datetime,
coverletter varchar(200),
```

```
foreign key(jobid) references jobs(jobid) on delete cascade );  \\
```

alter table applications auto_increment=2000;

ALTER TABLE applications ADD CONSTRAINT fk_applicant FOREIGN KEY (applicantid) REFERENCES applicants(applicantid) ON DELETE CASCADE;



applicantid	firstname	lastname	email	phone	aresume	experience	city	state
1000	Ross	Geller	rahul.sharma@email.com	912345678	resume_rahul.pdf	3	New York	NY
1001	Monica	Geller	soojin.kim@email.com	923456789	resume_soojin.pdf	2	Los Angeles	CA
1002	Chandler	Bing	daniel.lee@email.com	934567890	resume_daniel.pdf	4	Chicago	IL
1003	Rachel	Green	emily.clark@email.com	945678901	resume_emily.pdf	1	Houston	TX
1004	Joe	Tibiyani	john.doe@email.com	956789012	resume_john.pdf	8	Miami	FL
1005	Phoebe	Buffae	sophia.martinez@email.com	967890123	resume_sophia.pdf	4	San Francisco	CA
1006	Amir	Kahn	amir.khan@email.com	978901234	resume_amir.pdf	10	Dallas	TX
1007	Harini	Suresh	hana.yamamoto@email.com	989012345	resume_hana.pdf	10	Seattle	WA
1008	Girha	Lekshmi	carlos.gomez@email.com	990123456	resume_carlos.pdf	6	Denver	CO
1009	Gautham	M	linda.scott@email.com	901234567	resume_linda.pdf	6	Boston	MA

```
mysql> select*from applications;
                                                                         coverletter
  applicationid
                     jobid
                              applicantid
                                               applicationdate
                                               2024-04-02 10:30:05
                                                                            have 5 years of experience in software engineering
                                                                            have experience producing albums for K-pop artists.
             2031
                        101
                                       1001
                                               2024-03-16 11:45:01
                                               2024-03-21 09:15:01
                                                                            have 5 years of experience in talent management
                        102
             2032
                                       1002
                                                                            have 5 years of experience in tatent management
have 5 years of experience in content analysis
have 5 years of experience in data analyssis
have 5 years of experience in UX design.
                        103
                                               2024-02-11 14:20:07
             2033
                                       1003
                                               2024-01-26 16:00:09
             2034
                        104
                                       1004
             2035
                        105
                                       1005
                                               2024-02-29 13:10:50
                                                                            have 5 years of experience in AI development.
             2036
                        106
                                       1006
                                               2024-03-06 08:30:50
                                                                          Ι
                                                                            have 5 years of experience in AI development.
                        107
                                               2024-03-13 15:45:05
             2037
                                       1007
                                                                            have 5 years of experience in social media management
                                               2024-02-21 10:00:00
             2038
                        108
                                       1008
                        109
                                               2024-01-31 12:25:50
                                                                          I have 5 years of experience in ecom management
                                       1009
             2039
10 rows in set (0.00 sec)
```

mysql> select*From companies;						
companyID	companyName	location				
1 1 2 3 4 4 5 6 7 8 9 10 11 12 13	Hexaware Hybe YG Netflix Google Apple Tesla IBM Facebook Amazon AGC RCB Fifa	Mumbai South Korea South Korea Los Angeles Chicago California Austin NYC Seattle Mexico San Tiago India Israel				
13 rows in se	et (0.00 sec)	•				

jobid	companyid	jobtitle	jobDescription	joblocation	jobsalary	jobtype	jobpostdat
100	1	Software Engineer	maintain software applications	Mumbai	80000.00	Full-Time	2024-04-01
101	2	Music Producer	Manage artist coordination	Seoul	95000.00	Full-Time	2024-03-15
102	3	Talent Manager	Handle contracts and schedule for artists	Seoul	75000.00	Full-Time	2024-03-26
103	4	Content Analyst	recommend digital content	Los Angeles	8500.00	Full-Time	2024-02-10
104	5	Data Scientist	Work with large datasets	Chicago	11000.00	Full-Time	2024-01-2
105	6	UX Designer	Design interfaces	California	10000.00	Full-Time	2024-02-2
106	7	Automotive Engineer	Develop new car designs	Austin	1200.00	Full-Time	2024-03-0
107	8	AI Researcher	Work on AI models	NYC	1150.00	Full-Time	2024-03-1
108	9	Social Media Manager	Manage social media engagement	Seattle	6500.00	Full-Time	2024-02-2
109	10	E-commerce Analyst	digital strategies	Mexico	7000.00	Full-Time	2024-01-3
110	11	E-com analyst	digital stratergies	Mexico	60000.00	Full-time	2024-01-2
111	11	E-com analyst	digital stratergies	Mexico	74000.00	Full-time	2024-04-2
112	9	software engineer	digital stratergies	Mexico	74000.00	Full-time	2024-04-2

-- 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.

select j.jobtitle as job, count(a.applicationid) as JCount from jobs j left join applications a on j.jobid=a.jobid group by j.jobtitle;

job	JCount
Software Engineer Music Producer Talent Manager Content Analyst Data Scientist UX Designer Automotive Engineer AI Researcher Social Media Manager E-commerce Analyst	1 1 1 1 1 1 1 1 1 0
11 rows in set (0.00 sec	-

-- 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.

select j.jobtitle, c.companyname, j.joblocation, j.jobsalary

from jobs j join companies c on c.companyid=j.companyid

where j.jobsalary between 10000 and 50000;

-- 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.

select j.jobtitle, c.companyname, a.applicationdate from jobs j

join applications a on j.jobid=a.jobid

join companies c on c.companyid=j.companyid

where applicantid=1008;



-- 8. 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.

select c.companyname, j.jobtitle, avg(j.jobsalary) from companies c

join jobs j on c.companyid=j.companyid

where j.jobsalary>0

group by c.companyname, j.jobtitle;

companyname	+ jobtitle	++ avg(j.jobsalary)
+	Software Engineer Music Producer Talent Manager Content Analyst Data Scientist UX Designer Automotive Engineer AI Researcher Social Media Manager E-commerce Analyst E-com analyst software engineer	80000.0000000 95000.0000000 75000.0000000 8500.0000000 11000.0000000 1200.0000000 150.0000000 6500.0000000 7000.0000000 67000.0000000 74000.0000000
Facebook + 12 rows in set	+	74000.000000 ++

-- 9 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.

select c.companyname, count(j.jobid) as jobCount from companies c
join jobs j on c.companyid=j.companyid group by c.companyname
order by jobCount desc limit 1;



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

select a.firstname, a.lastname from applicants a join applications ap on ap.applicantid=a.applicantid

join jobs j on j.jobid=ap.jobid

join companies c on c.companyid=j.companyid

where c.location="South Korea" and a.experience>=3;

```
-> where c.tocation- so

+-----+

| firstname | lastname |

+----+

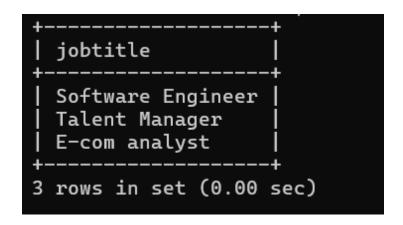
| Chandler | Bing |

+----+

1 row in set (0.00 sec)
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-- 11 Retrieve a list of distinct job titles with salaries between \$60,000 and \$80,000.

select distinct(jobtitle) from jobs where jobsalary between 60000 and 80000;



-- 12 Find the 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;

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

select a.firstname, c.companyname, j.jobtitle from applications ap

join jobs j on ap.jobid=j.jobid

join companies c on c.companyid=j.companyid

join applicants a on a.applicantid=ap.applicantid;

+ firstname	+ companyname	++ jobtitle
Ross Nonica Chandler Rachel Joe Phoebe Amir Harini Girha Gautham	Hexaware Hybe YG Netflix Google Apple Tesla IBM Facebook Amazon	Software Engineer Music Producer Talent Manager Content Analyst Data Scientist UX Designer Automotive Engineer AI Researcher Social Media Manager
10 rows in se	et (0.00 sec)	

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

select c.companyname, count(j.jobid) from companies c

left join jobs j on j.companyid=c.companyid group by c.companyname;

companyname ++- Hexaware Hybe YG Netflix Google	count(j.jobid) 1 1 1
Hybe YG Netflix	1
Apple Tesla IBM Facebook Amazon AGC	1 1 1 1 1 2 1 2
RCB Fifa	0 0

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

select ap.firstname, c.companyname, j.jobtitle from applicants ap

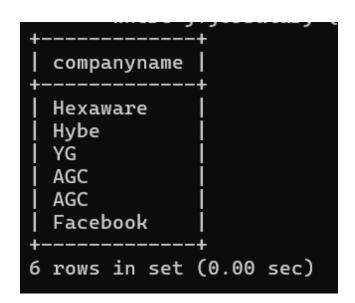
left join applications a on a.applicantid-ap.applicantid

left join companies c on c.companyid=j.companyid;

+	companyname	++ jobtitle
Ross Ronica Chandler Rachel Joe Phoebe Amir Harini Girha Gautham	Hexaware Hybe YG Netflix Google Apple Tesla IBM Facebook Amazon	Software Engineer Music Producer Talent Manager Content Analyst Data Scientist UX Designer Automotive Engineer AI Researcher Social Media Manager E-commerce Analyst

-- 16 Find companies that have posted jobs with a salary higher than the average salary of all jobs.

select c.companyname from companies c join jobs j on c.companyid=j.companyid where j.jobsalary>(select avg(jobsalary) from jobs j);



-- 17 Display a list of applicants with their names and a concatenated string of their city and state. select a.firstname, concat(city,";,state)as location from applicants a;

```
firstname
               location
               New York,NY
  Ross
  Monica
               Los Angeles,CA
  Chandler
               Chicago, IL
  Rachel
               Houston, TX
  Joe
               Miami, FL
  Phoebe
               San Francisco,CA
  Amir
               Dallas, TX
  Harini
               Seattle, WA
               Denver,CO
  Girha
               Boston, MA
10 rows in set (0.00 sec)
```

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

select *from jobs where jobtitle like "%engineer%" or jobtitle like "%developer%";

jobid	companyid	jobtitle	jobDescription	joblocation	jobsalary	jobtype	jobpostdate
100 106 112	7	Software Engineer Automotive Engineer software engineer	maintain software applications Develop new car designs digital stratergies	Mumbai Austin Mexico	1200.00	Full-Time Full-Time Full-time	2024-03-05
3 rows in	set (0.00 s	sec)		+		+	

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

select a.applicantid, a.firstname, a.lastname, j.jobid, j.jobtitle, c.companyname

from applicants a

left join applications ap on a.applicantid = ap.applicantid

left join jobs j on ap.jobid = j.jobid

left join companies c on j.companyid = c.companyid

union

select a.applicantid, a.firstname, a.lastname, j.jobid, j.jobtitle, c.companyname

from jobs j

left join applications ap on j.jobid = ap.jobid

left join applicants a on ap.applicantid = a.applicantid

left join companies c on j.companyid = c.companyid

where a.applicantid is null;

+	firstname	+ lastname	+ iobid	iobtitle	companyname
+			+		+
1000	Ross	Geller	100	Software Engineer	Hexaware
1001	Monica	Geller	101	Music Producer	Hybe
1002	Chandler	Bing	102	Talent Manager	YG
1003	Rachel	Green	103	Content Analyst	Netflix
1004	Joe	Tibiyani	104	Data Scientist	Google
1005	Phoebe	Buffae	105	UX Designer	Apple
1006	Amir	Kahn	106	Automotive Engineer	Tesla
1007	Harini	Suresh	107	AI Researcher	IBM
1008	Girha	Lekshmi	108	Social Media Manager	Facebook
1009	Gautham	M	109	E-commerce Analyst	Amazon
NULL	NULL	NULL	110	E-com analyst	AGC
NULL	NULL	NULL	111	E-com analyst	AGC
NULL	NULL	NULL	112	software engineer	Facebook
+	·	+ -	+		+
13 rows in set	(0.00 sec)				

-- 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

select a.firstname, c.companyname, a.experience from applications ap join applicants a on a.applicantid=ap.applicantid join jobs j on j.jobid=ap.jobid join companies c on c.companyid=j.companyid where experience>2 and j.joblocation="Mexico";

