

CS 586 Introduction to Databases
Assignment 1 – Basic SQL Queries
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1.

(a) `SELECT * FROM Agent WHERE city = 'Milan' AND country = 'Italy';`

We want to know the basic information about agents who are from Milan, Italy. Basic information includes agent id, agents' full name, address, salary and clearance_id.

Total number of rows: 6

agent_id	first	middle	last	address	city	country	salary	clearance_id
30	Kristin	NULL	Moody	34 16th Avenue	Milan	Italy	54803	5
87	Tim	NULL	Brock	45 50th Avenue	Milan	Italy	56704	6
113	Mary	NULL	Baker	7 69th Avenue	Milan	Italy	53152	2
364	Andrew	NULL	Odegard	28 42nd Avenue	Milan	Italy	56281	2
378	Mary	NULL	Thomas	39 51st Avenue	Milan	Italy	56152	3
394	Pete	NULL	Campos	3 63th Avenue	Milan	Italy	54801	1

(b) `SELECT mission_status FROM Mission;`

We want to know all the mission status in the Mission table. As we can see, there are three types of mission status: success, failed, ongoing.

Total number of rows: 404

mission_status
success
failed
success
ongoing
ongoing

(c) `SELECT DISTINCT mission_status FROM Mission;`

We want to know the types of mission status. In other words, we do not want to see duplicates. There are three types of mission status: success, failed, ongoing.

Total number of rows: 3

mission_status
success
failed
ongoing

(d) `SELECT agent_id, city, country FROM Agent WHERE salary < 50500 AND country != 'Poland';`

We want to know information about agent who is not from Poland and who makes less than \$50500. The information includes agent id, which country and city he/she comes from.

Total number of rows: 25

agent_id	city	country
20	Paris	France
88	Hong Kong	China
92	Baghdad	Iraq
129	Baghdad	Iraq
151	Rome	Greece

(e) `SELECT team_id, name FROM Team;`

Agents form different teams. We want to know all the team ids and team names in the Team table.

Total number of rows: 42

team_id	name
1	Renegade
2	Haberdash
3	Roadkill
4	Oink
5	Blaster

2.

(a) `SELECT name, meeting_frequency FROM Team WHERE team_id = 18;`

We want to know the team name of team id number 18, and how frequent they host meetings. We extract the information from Team table.

Total number of rows: 1

name	meeting_frequency
SqueakyClean	weekly

(b) `SELECT name, meeting_frequency FROM Team WHERE Team.team_id = 18;`

We want to know the team name of team id number 18, and how frequent they host meetings. We extract the information from Team table. We specified the table name in the WHERE clause “Team.team_id”.

Total number of rows: 1

name	meeting_frequency
SqueakyClean	weekly

(c) `SELECT name, meeting_frequency FROM Team T WHERE T.team_id = 18;`

We want to know the team name of team id number 18, and how frequent they host meetings. We extract the information from Team table, and we give a name “T” to the table. We specified the table name in the WHERE clause “T.team_id”.

Total number of rows: 1

name	meeting_frequency
SqueakyClean	weekly

3.

(a) `SELECT * FROM Agent A, SecurityClearance S`

`WHERE A.salary = 54264`

`AND (S.sc_level = ‘Secret’ OR S.sc_level = ‘Majestic’);`

We want to know all the agent and clearance information (from Agent and SecurityClearance table), where security clearance level is Secret or Majestic, and agents’ salary amount is exact \$54264.

Total number of rows: 12

agent_id	first	middle	last	address	city	country	salary	clearance_id	sc_id	sc_level	description
58	Jason	NULL	Pavel	17A 30th Avenue	Baghdad	Iraq	54264	5	2	Majestic	Second highest level of access
58	Jason	NULL	Pavel	17A 30th Avenue	Baghdad	Iraq	54264	5	5	Secret	Fifth highest level of access
175	Luke	NULL	Barklay	2 15th Avenue	Rome	Greece	54264	1	2	Majestic	Second highest level of access
175	Luke	NULL	Barklay	2 15th Avenue	Rome	Greece	54264	1	5	Secret	Fifth highest level of access
235	Hembert-Glen	NULL	Tanner	85 53rd Avenue	Paris	France	54264	5	2	Majestic	Second highest level of access

(b) SELECT * FROM Agent A, SecurityClearance S
 WHERE A.salary = 54264
 AND (S.sc_level = 'Secret' OR S.sc_level = 'Majestic')
 AND A.clearance_id = S.sc_id;

We want to know all the agent and clearance information (from Agent and SecurityClearance table), where the agent's security clearance level is Secret or Majestic, and the agent's salary amount is exact \$54264. (Here we eliminate information of agents whose security clearance level is not Secret or Majestic).

Total number of rows: 4

agent_id	first	middle	last	address	city	country	salary	clearance_id	sc_id	sc_level	description
58	Jason	NULL	Pavel	17A 30th Avenue	Baghdad	Iraq	54264	5	5	Secret	Fifth highest level of access
235	Hembert-Glen	NULL	Tanner	85 53rd Avenue	Paris	France	54264	5	5	Secret	Fifth highest level of access
938	Nick	T	Hartenstein	32 39th Avenue	Warsaw	Poland	54264	2	2	Majestic	Second highest level of access
959	Ted	M	Fregosi	4 42nd Avenue	Paris	France	54264	2	2	Majestic	Second highest level of access

4.

(a) SELECT A.agent_id, A.first, A.last, A.city, A.country
 FROM Agent A, SkillRel SR, Skill S
 WHERE A.agent_id = SR.agent_id AND SR.skill_id = S.skill_id
 AND S.skill = 'Locksmith';

We want to know some basic information of agents who have Locksmith skill. Basic information includes agent id, agent first and last name, and which city and country they come from.

Total number of rows: 48

agent_id	first	last	city	country
2	Bill	Bundt	Paris	France
65	Jonh	Wan	San Francisco	USA
78	Bill	Gill	Baghdad	Iraq
157	Mary	Proell	Paris	France
170	Theodore	Vireday	Baghdad	Iraq

(b) SELECT A1.first, A1.last, A2.city, A2.country FROM Agent A1, Agent A2
 WHERE A1.city = A2.city AND A1.country = A2.country
 AND A1.clearance_id > A2.clearance_id AND A1.salary >= A2.salary;

We compare two agents. These two agents come from the same city and country. Agent #1 has bigger clearance id than agent #2. Moreover, agent #1's salary is greater or equal to agent #2's salary. We want to know agent #1's first and last name, agent #2's city and country.

Total number of rows: 5227

first	last	city	country
Nick	Black	Athens	USA
Nick	Black	Athens	USA
Nick	Black	Athens	USA
Nick	Black	Athens	USA
Bill	Bundt	Paris	France

5. What are the team ID and the meeting frequency for the Cyclone team?

```
SELECT team_id, meeting_frequency
```

```
FROM team
```

```
WHERE name='Cyclone';
```

Total number of rows: 1

team_id	meeting_frequency
11	monthly

6. Which countries have agents with Presidential or Majestic clearance?

(Your query shouldn't depend on what clearance IDs are used for these clearance levels, just the names of the levels.)

```
SELECT DISTINCT agent.country
```

```
FROM agent, securityclearance
```

```
WHERE agent.clearance_id=securityclearance.sc_id
```

```
AND (securityclearance.sc_level='Presidential' OR securityclearance.sc_level='Majestic');
```

Total number of rows: 20

country
China
England
Turkey
Germany
Poland

7. What are the ids and last names of all agents with at least two skills?

(You can do this without COUNT.)

```
SELECT DISTINCT AG.agent_id, AG.last
```

```
FROM agent AG, skillrel S1, skillrel S2
```

```
WHERE AG.agent_id=S1.agent_id
```

```
AND AG.agent_id=S2.agent_id
```

```
AND S1.skill_id!=S2.skill_id;
```

Total number of rows: 524

agent_id	last
96	Lyamar
243	Peevy
272	Chung
578	Gallie
563	Fast

8. List the name and status of all missions that have at least one agent who speaks Russian. Don't repeat missions in your result.

```
SELECT DISTINCT M.name, M.mission_status
FROM mission M, agent A, language L, languagerel LR, team T, teamrel TR
WHERE M.team_id = T.team_id
AND T.team_id = TR.team_id
AND TR.agent_id = A.agent_id
AND L.lang_id = LR.lang_id
AND LR.agent_id = A.agent_id
AND L.language = 'Russian';
```

Total number of rows: 340

name	mission_status
Hay Gate	ongoing
Lograd	failed
Rasputin	failed
Melian	success
Mindolluin	failed

9. Which pairs of agents have the same first and last names? (List each pair only once.)

```
SELECT A1.agent_id, A1.first, A1.last, A2.agent_id, A2.first, A2.last
FROM agent A1, agent A2
WHERE A1.first = A2.first
AND A1.last = A2.last
AND A1.agent_id != A2.agent_id
AND A1.agent_id > A2.agent_id;
```

Total number of rows: 3

agent_id	first	last	agent_id	first	last
326	Anri	Lazaryan	306	Anri	Lazaryan
429	George	Carter	419	George	Carter
432	John	Miller	258	John	Miller

Reference: Discussed Question 9 with Zhan Li