# CS386 Homework 1

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## Part 1

**For each query: describe what it does, give first five rows, include total number of rows.**

1. **SELECT agent_id,first,last FROM agent;**
   List all agents' ids and full names.
   1 Nick Black
   2 Bill Bundt
   3 Mathew Cohen
   4 Jim Cowan
   5 George Fairley
   662 rows.

2. **SELECT DISTINCT country FROM agent;**
   List the country of each agent, without repeating any.
   China
   England
   Turkey
   Germany
   Singapore
   22 rows.

3. **SELECT agent_id FROM affiliationrel;**
   List all agent ids in affiliationrel.
   2
   3
   5
   5
   7
   954 rows.

4. **SELECT team.name,agent.last FROM team,teamrel,agent**
   **WHERE teamrel.agent_id=agent.agent_id AND team.team_id= teamrel.team_id AND team.team_id = 7;**
   List all team names and agent last names of agents on team 7.
   Requires that agent ids and team ids match between tables.
   FlyOnTheWall Kadam
   FlyOnTheWall Yu
   FlyOnTheWall Bliss
   FlyOnTheWall Kottler
   FlyOnTheWall Cockerham
   10 rows.

5. **SELECT count(*) FROM language,skill;**
   Count the number of rows after joining language table and skill table.
   1320
   1 row.

6. **SELECT * FROM language,skill;**
   Join and list the entire contents of the language table and skill table.
   1 English 1 Sniper
   1 English 2 Demolition Expert
   1 English 3 Driver
   1 English 4 Computer Hacker
   1 English 5 Communications
   1320 rows.

**Why are there so many rows in query #5 and #6?**
When querying from multiple tables, the DBMS produces the cartesian product of the tables. The language table has 20 rows, and the skill table has 66. $20 \times 66 = 1320$.

**What is the SQL engine doing to produce this output?**
Finding every possible combination of the rows from each table.

# Part 2

**Create SQL Queries for the following.**

List the missions for team 44.
SELECT * FROM mission WHERE team_id = 44;

List the skills and their skill_id.
SELECT skill,skill_id FROM skill;

List mission names for missions that have an access_id greater than 4.
SELECT name FROM mission WHERE access_id >4;

Show agent names (first and last) that have more than a $150,000 per year salary.
SELECT first,last FROM agent WHERE salary >150000;

List the agents on team 13.
SELECT * FROM agent,teamrel WHERE teamrel.agent_id = agent.agent_id AND team_id = 13;