Assignment 1 : DBMS

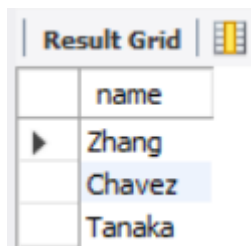## MIS No.: 612303083 (TY 1, ADS 3)

Q.1 University

DQL - Solution queries:

- Code:

```
-- Find the names of all the students whose total credits are greater than 100.
SELECT name FROM student WHERE tot_cred > 100;
```
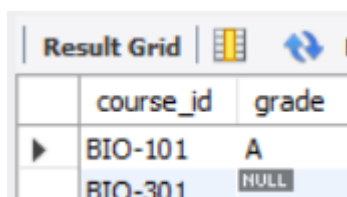
- Output:

- Code:

```
-- Find the course id and grades of all courses taken by any student named
'Tanaka'.
SELECT takes.course_id, takes.grade
FROM student
INNER JOIN takes
ON student.ID = takes.ID
where name = "Tanaka";
```

- Output:

- Code:

```
-- Find the courses which are offered in both 'Fall' and 'Spring' semester (not
necessarily in the same year).
SELECT title
```

```
FROM course
INNER JOIN section
ON course.course_id = section.course_id
WHERE semester = 'Fall'
    AND section.course_id IN (
        SELECT course_id
        FROM section
        WHERE semester = 'Spring'
    );
```

- Output:

name
Srinivasan
Katz
Brandt

- Code:

```
-- Find the names of all the instructors from Comp. Sci. department.
SELECT name FROM instructor WHERE dept_name = 'Comp. Sci.';
```

- Output:

course_id	title
CS-101	Intro. to Computer Science
CS-315	Robotics
CS-347	Database System Concepts

- Code:

```
-- Find the course id and titles of all courses taught by an instructor named
'Srinivasan'
SELECT DISTINCT course.course_id, course.title
FROM course
JOIN teaches ON course.course_id = teaches.course_id
JOIN instructor ON teaches.ID = instructor.ID
WHERE instructor.name = 'Srinivasan';
```

- Output:

- Code:

```
-- Find the names of instructors who have taught at least one course in Spring
2009.
SELECT DISTINCT name FROM instructor
JOIN teaches ON instructor.ID = teaches.ID
JOIN section ON teaches.course_id = section.course_id
WHERE section.semester = 'Spring' AND section.year = 2009;
```

- Output:

Q.2 Railway Station

DQL - Solution queries:

- Code:

```
-- Find pairs of stations (station codes) that have a track (direct connection)
with distance less than 20Kms between them.
SELECT stcode1, stcode2
FROM track
WHERE distance < 20;
```

- Output:

- Code:

```
-- Find the IDs of all the trains which have a stop at THANE
SELECT id
FROM trainhalts
JOIN station
ON trainhalts.stcode = station.stcode
WHERE station.name = 'Thane';
```

- Output:

id
A65
KP11

- Code:

```
-- Find the names of all trains that start at MUMBAI.
SELECT train.name
FROM train
JOIN trainhalts ON train.id = trainhalts.id
JOIN station ON trainhalts.stcode = station.stcode
WHERE trainhalts.seqno = 0 AND station.name = 'Mumbai';
```

- Output:

name
CST-AMR_LOCAL
CST-KYN

- Code:

```
-- List all the stations in order of visit by the train 'CST-AMR_LOCAL'.
SELECT station.name
FROM station
JOIN trainhalts ON station.stcode = trainhalts.stcode
JOIN train ON trainhalts.id = train.id
WHERE train.name = 'CST-AMR_LOCAL'
ORDER BY trainhalts.seqno;
```

- Output:

	name
▶	MUMBAI
	BYCULLA
	DADAR
	KURLA
	GHATKOPAR
	THANE
	DOMBIVALI
	KALYAN
	AMBARNATH

Result Grid