

# Assignment 1 : DBMS

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MIS No.: 612303083 (TY 1, ADS 4)

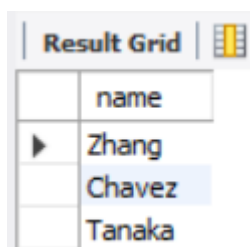
## Q.1 University

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:



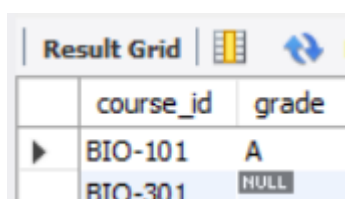
The screenshot shows a 'Result Grid' window with a table containing student names. The first row is the header 'name'. The subsequent rows are 'Zhang', 'Chavez', and 'Tanaka'. The 'Chavez' row is highlighted in blue.

	name
▶	Zhang
	Chavez
	Tanaka

- 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:



The screenshot shows a 'Result Grid' window with a table containing course IDs and grades. The first row is the header 'course\_id' and 'grade'. The subsequent rows are 'BIO-101' with grade 'A' and 'BIO-301' with grade 'NULL'. The 'BIO-301' row is highlighted in blue.

	course_id	grade
▶	BIO-101	A
	BIO-301	NULL

- 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:

Result Grid	
	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:

Result Grid		Filter Rows:
	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:

Result Grid	
	name
▶	Brandt
	Kim

- 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:

	title
▶	Intro. to Computer Science

## 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:

	stcode1	stcode2
▶	BYC	DR
	BYC	KRL
	CST	BYC
	CST	DR
	CST	KRL
	GRP	TNA
•	HULL	HULL

- 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:

Result Grid	
	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:

Result Grid	
	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:

Result Grid	
	name
▶	MUMBAI
	BYCULLA
	DADAR
	KURLA
	GHATKOPAR
	THANE
	DOMBIVALI
	KALYAN
	AMBARNATH