

## Part 1

The screenshot shows a database console interface with the following components:

- Database Explorer:** A tree view on the left showing the database structure. The 'main' schema is expanded, showing tables like 'grades', 'instructors', 'majors', 'sqlite\_master', 'students', and 'collations'.
- Query Editor:** The main area contains a SQL query: 

```
/*What is the name of the instructor with CWID='98763'?*/  
SELECT name  
FROM instructors  
WHERE CWID = '98763'
```
- Output Panel:** Below the query editor, the output shows a single row: 

Name
Row/Land, J
- Services Panel:** At the bottom, it shows the execution time for the query as 135 ms.

## Part 2

The screenshot shows the same database console interface, but with a different query and results:

- Database Explorer:** The 'main' schema is expanded, showing the 'instructors' table.
- Query Editor:** The main area contains a SQL query: 

```
/*What is the total number of instructors by department?*/  
SELECT Dept, COUNT(Name) as Number_of_Instructors  
FROM instructors  
GROUP BY Dept
```
- Output Panel:** Below the query editor, the output shows two rows: 

Dept	Number_of_Instructors
CS	1
SFEN	2
- Services Panel:** At the bottom, it shows the execution time for the query as 68 ms.

## Part 3

The screenshot shows a database console interface with a query editor and a results pane. The query is as follows:

```
1 /*What is the most frequent grade across all students and courses?*/
2
3 SELECT Grade --,COUNT(Grade)
4 FROM grades
5 GROUP BY Grade
6 ORDER BY Count(Grade) DESC
7 LIMIT 1
```

The results pane shows a single row with the grade 'A'.

Grade
A

The Services pane on the left shows the execution times for various database operations:

- default: 25 ms
- main.grades: 47 ms
- main.grades: 47 ms
- console: 24 ms

The bottom status bar indicates: university.db: Synchronization successful (123 ms) (11 minutes ago).

## Part 4

The screenshot shows a database console interface with a query editor and a results pane. The query is as follows:

```
1 /*Show the student's name, CWID, and major along with the courses and grades each student received in that course for all grades.w/
2
3 SELECT s.Name, s.CWID, s.Major, g.Course, g.Grade
4 FROM grades AS g
5 JOIN students AS s
6 ON g.StudentCWID = s.CWID
7
```

The results pane shows 9 rows of data:

	Name	CWID	Major	Course	Grade
1	Jobs, S	10103	SFEN	SSW 810	A-
2	Jobs, S	10103	SFEN	CS 501	B
3	Bezos, J	10115	SFEN	SSW 810	A
4	Bezos, J	10115	SFEN	CS 546	F
5	Musk, E	10103	SFEN	SSW 555	A
6	Musk, E	10103	SFEN	SSW 810	A
7	Gates, B	11714	CS	SSW 810	B-
8	Gates, B	11714	CS	CS 546	A
9	Gates, B	11714	CS	CS 570	A-

The Services pane on the left shows the execution times for various database operations:

- default: 25 ms
- main.majors: 55 ms
- main.majors: 55 ms
- console: 18 ms
- main.grades: 51 ms
- main.grades: 51 ms
- main.students: 48 ms
- main.students: 48 ms

The bottom status bar indicates: university.db: Synchronization successful (123 ms) (39 minutes ago).

## Part 5

The screenshot shows a database console interface with a SQL query and its results. The query is as follows:

```
1 /*Show the names of students who have grades for 'SSW 810'*/
2
3 SELECT s.Name, s.CWID, s.Major, g.Course, g.Grade
4 FROM grades AS g
5 JOIN students AS s
6 ON g.StudentCWID = s.CWID
7 WHERE g.Course='SSW 810'
8
```

The results are displayed in a table with 4 rows:

Name	CWID	Major	Course	Grade
Jobs, S	10103	SFEN	SSW 810	A-
Bezos, J	10115	SFEN	SSW 810	A
Musk, E	10183	SFEN	SSW 810	A
Gates, B	11714	CS	SSW 810	B-

The Services panel shows the execution time for the console query as 23 ms. The bottom status bar indicates that the database synchronization was successful (123 ms) (43 minutes ago).

## Part 6

The screenshot shows a database console interface with a SQL query and its results. The query is as follows:

```
1 SELECT i.CWID, i.Name, i.Dept, g.Course, COUNT(g.StudentCWID) AS Students
2 FROM instructors AS i
3 JOIN grades AS g
4 ON i.CWID = g.InstructorCWID
5 GROUP BY g.Course, g.InstructorCWID
6 ORDER BY i.CWID DESC, COUNT(g.StudentCWID) DESC
7
```

The results are displayed in a table with 6 rows:

CWID	Name	Dept	Course	Students
98764	Cohen, R	SFEN	CS 546	1
98763	Rowland, J	SFEN	SSW 810	4
98763	Rowland, J	SFEN	SSW 555	1
98762	Hawking, S	CS	CS 501	1
98762	Hawking, S	CS	CS 546	1
98762	Hawking, S	CS	CS 570	1

The Services panel shows the execution time for the console query as 22 ms. The bottom status bar indicates that the database synchronization was successful (104 ms) (22 minutes ago).