**Assignment-2**

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**30th August 2022**

1. The following table contains all the integrity constraints for each table definition in the university schema.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table** | **Primary Key** | **Domain of PK** | **Foreign Key** | **Not NULL** |
| classroom | building, room\_number | varchar | None | building, room\_number |
| department | dept\_name | varchar | None | dept\_name, budget |
| course | course\_id | varchar | dept\_name (*references department*) | course\_id, credits |
| instructor | ID | Varchar | dept\_name (*references department*) | ID, name, salary |
| section | course\_id, sec\_id, semester, year | varchar, numeric | course\_id (*references course*), building, room\_number (*references classroom*) | course\_id, sec\_id, semester, year |
| teaches | ID, course\_id, sec\_id, semester, year | varchar, numeric | course\_id, sec\_id, semester, year (*references section*), ID (*references instructor*) | ID, course\_id, sec\_id, semester, year |
| student | ID | varchar | dept\_name (*references department*) | ID, name |
| takes | ID, course\_id, sec\_id, semester, year | varchar, numeric | course\_id, sec\_id, semester, year (*references section*), ID (*references student*) | ID, course\_id, sec\_id, semester, year |
| advisor | s\_ID | varchar | i\_ID (*references instructor (ID)*), s\_ID (*references student (ID)*) | s\_ID |
| time\_slot | time\_slot\_id, day, start\_hr, start\_min | varchar, numeric | None | time\_slot\_id, day, start\_hr, start\_min |
| prereq | course\_id, prereq\_id | varchar | course\_id (*references course*), prereq\_id (*references course*) | course\_id, prereq\_id |

1. Query used:

**SELECT** \*  
**FROM** student s, department d, takes t, advisor a, instructor i  
**WHERE** s.name = ‘Brown’ **and** s.id = t.id **and** s.id = a.s\_id **and** a.i\_ID =  
i.id **and** s.dept\_name = d.dept\_name;

Output:



1. The following answer contains 2 images for each table 1st before running the query and 2nd the output after running the query.
2. *Advisor*

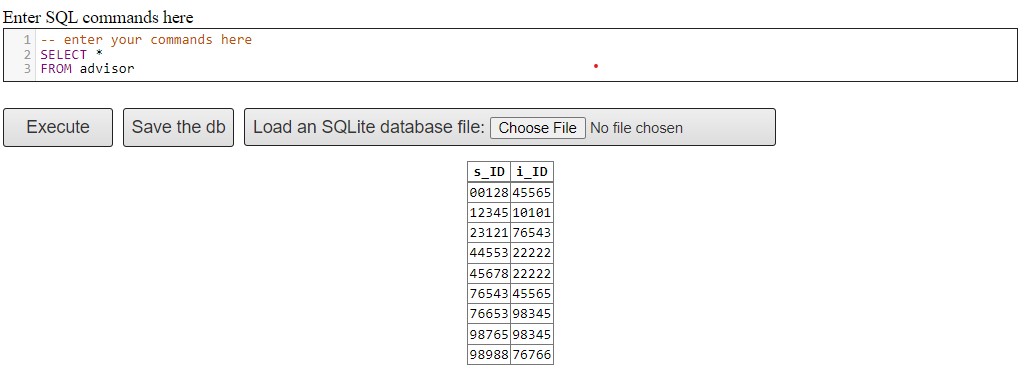


Figure 1 Advisor Table

Query:

**SELECT** s\_id

**FROM** advisor

**WHERE** s\_id%2 == 0

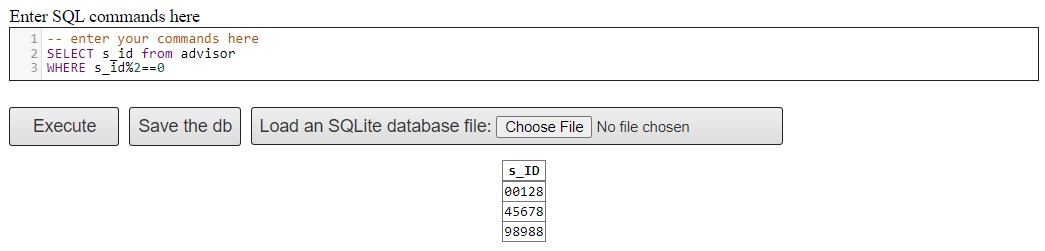


Figure 2 Output after running above query on Advisor

1. *classroom*

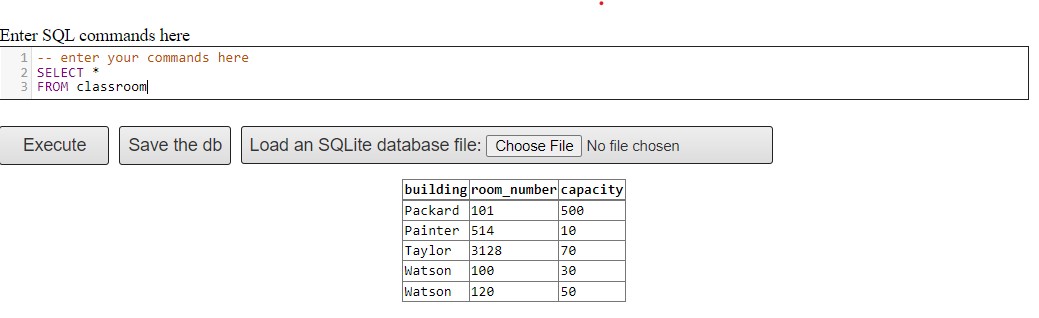


Figure 3 classroom table

Query:

**INSERT INTO** classroom

**VALUES** (‘IIT’, 2000, 150);

**SELECT** \* **FROM** classroom

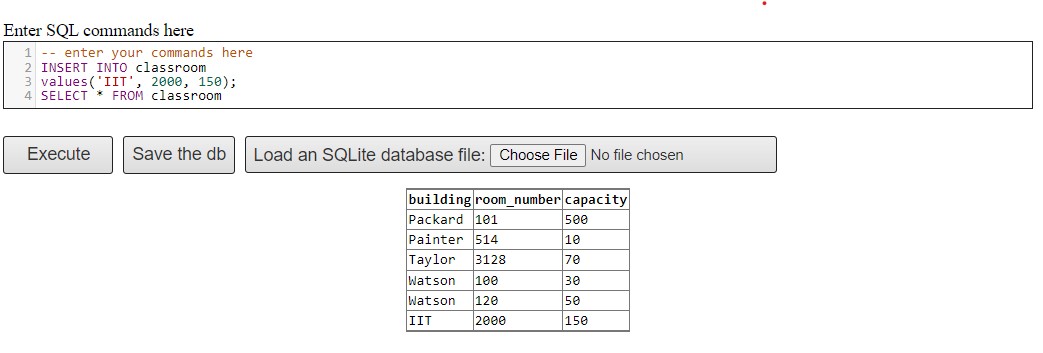


Figure 4 Output after running the above query

1. *course*

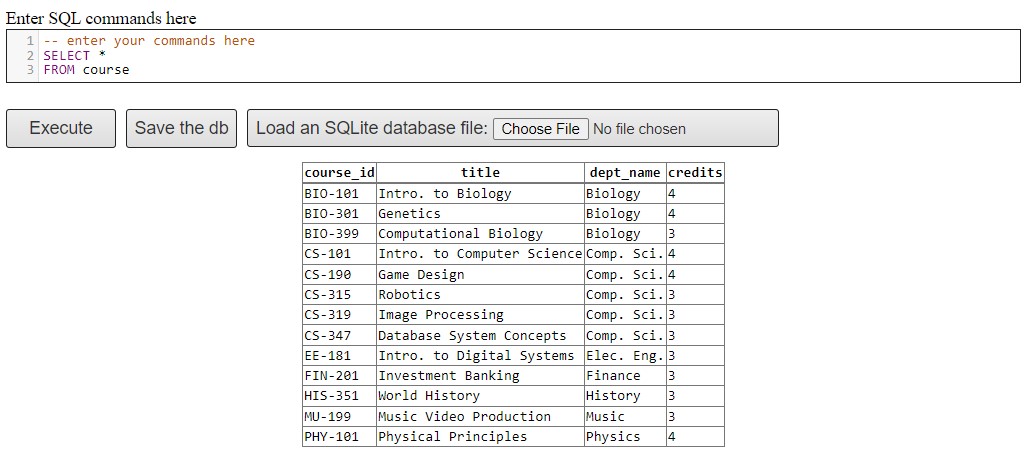
Query:

Figure course table

**UPDATE** course

**SET** TITLE = Biology For Engineers’, credits = 6

**WHERE** course\_id = ‘BIO-101’;

**SELECT** \* **FROM** course

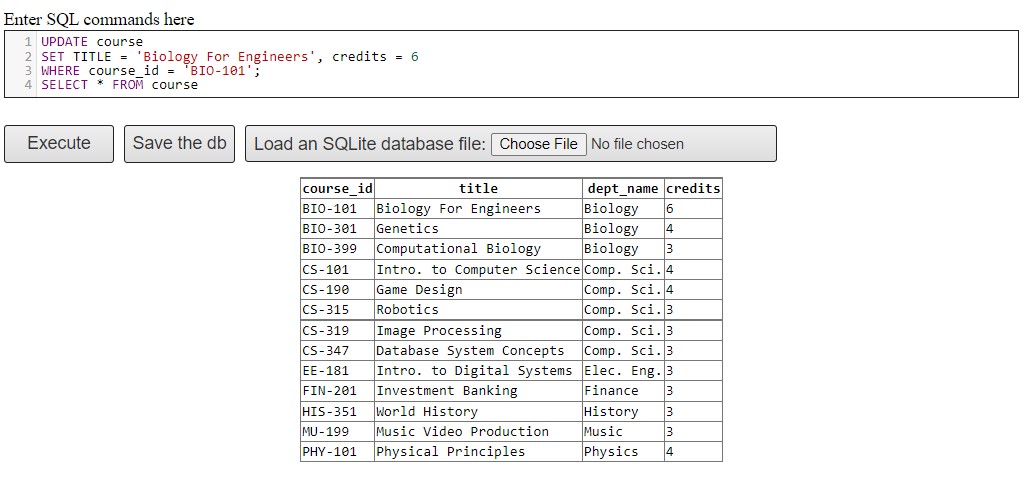


Figure 6 Output after running above Query

1. *department*

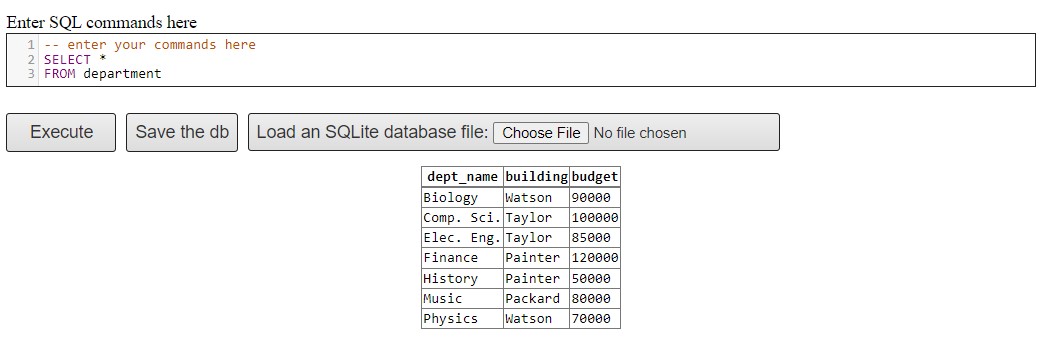
**

Figure 7 department table

Query:

**DROP TABLE** department

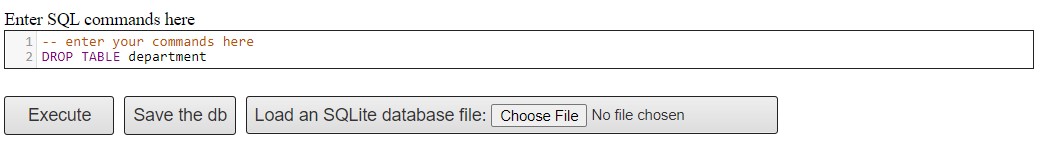


Figure 8 Output after running above query

1. *instructor*

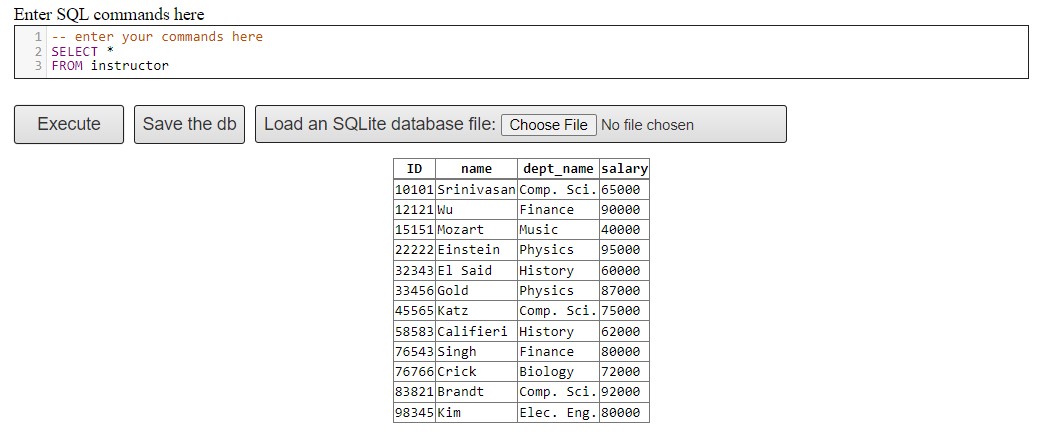


Figure instructor table

Query:

**DELETE FROM** instructor

**WHERE** salary=65000;

**SELECT** \* **FROM** instructor

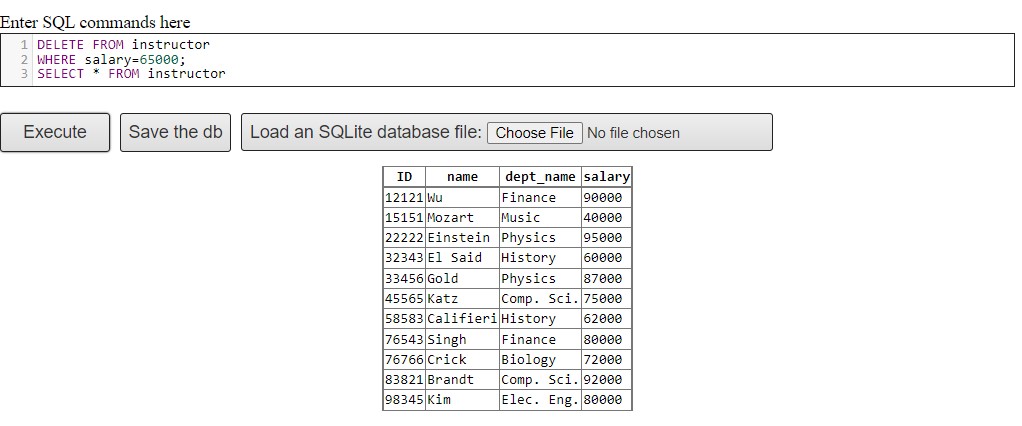


Figure Output after running above query

1. *prereq*

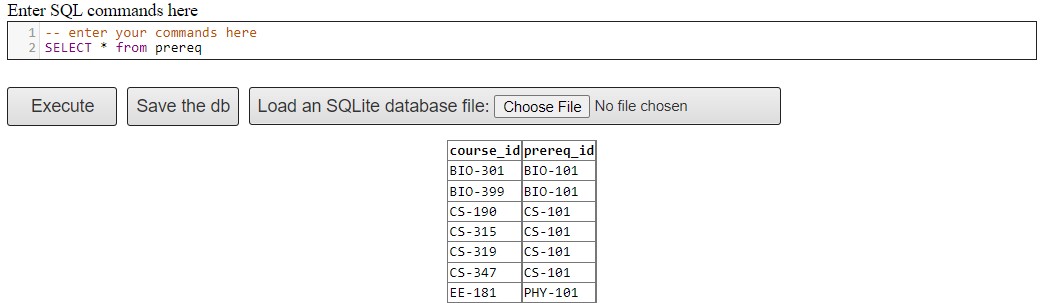
**

Figure prereq table

Query:

**SELECT** course\_id

**FROM** prereq

**WHERE** prereq\_id **LIKE** ‘C%’

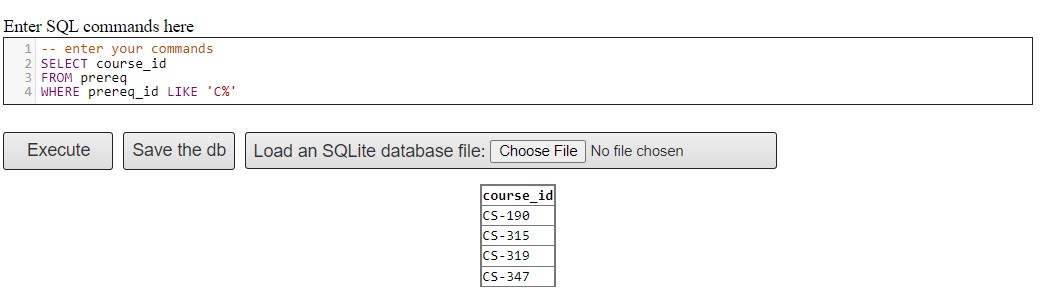


Figure output after running above query

1. *section*

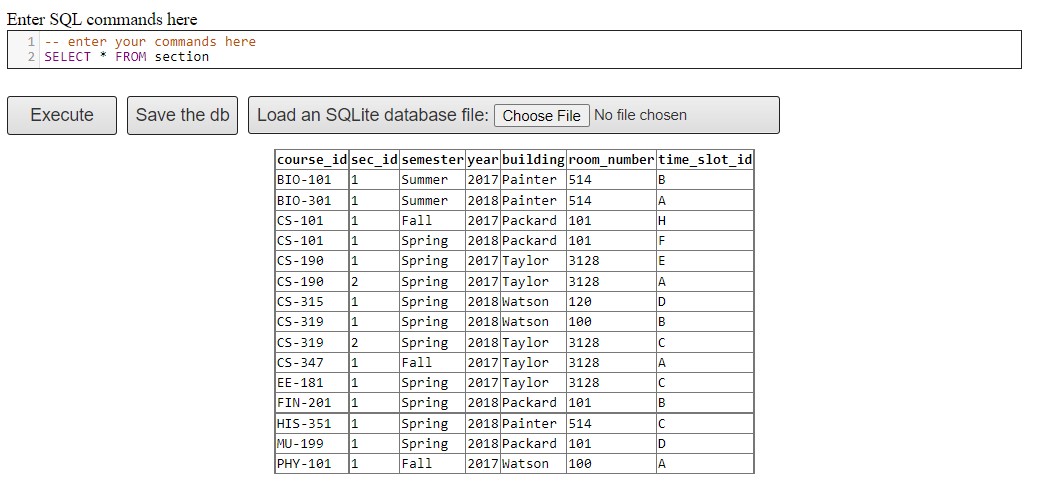
**

Figure section table

Query:

**DELETE FROM** section

**WHERE** semester = ‘Spring’ **and** room\_number = 3128;

**SELECT** \* **FROM** section

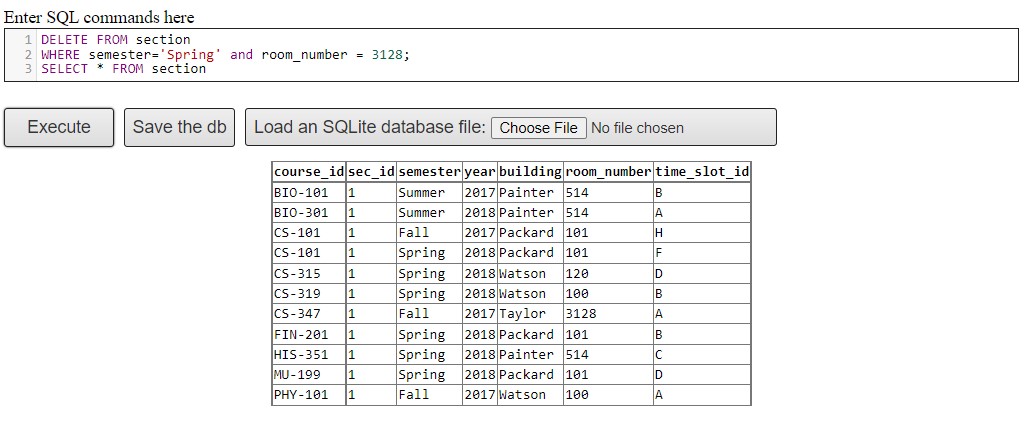


Figure output after running above query

1. *student*

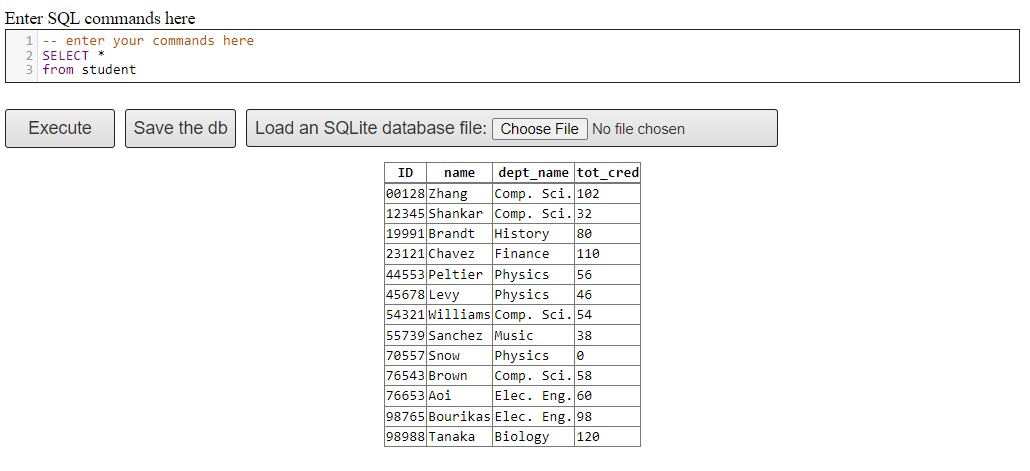
**

Figure student table

Query:

**SELECT** \*

**FROM** student **ORDER BY** name

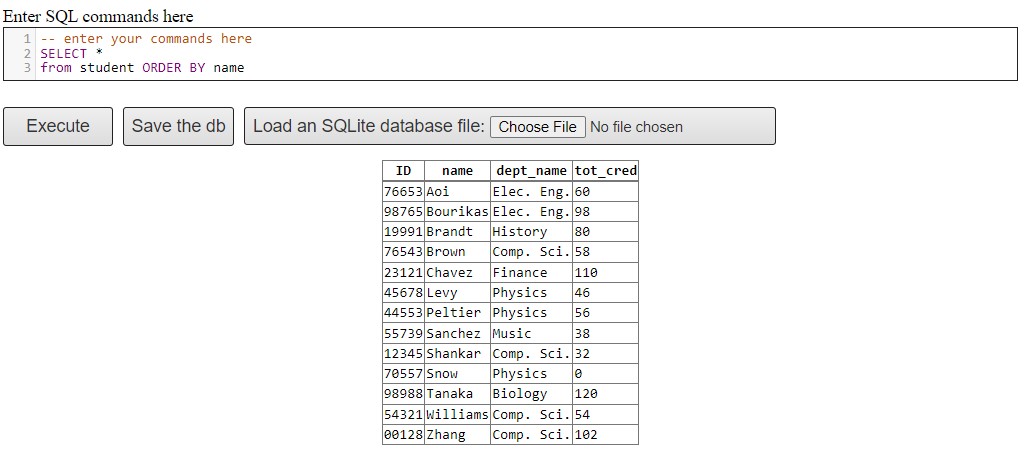


Figure result after running above query

1. *takes*

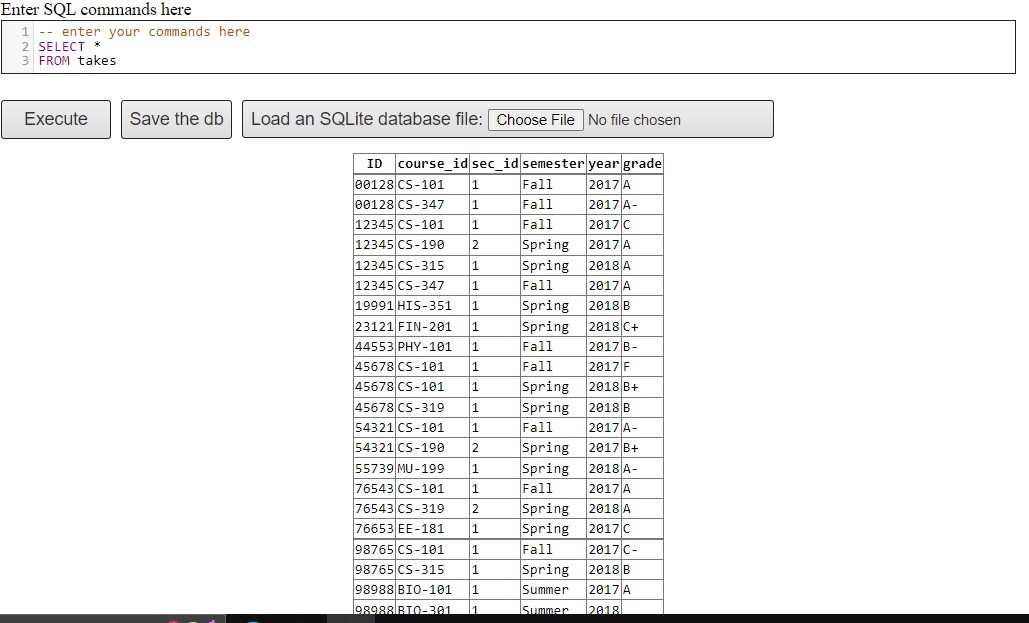
**

Figure takes

Query:

**ALTER TABLE** takes

**ADD** Result varchar (50);

**SELECT** \* **FROM** takes

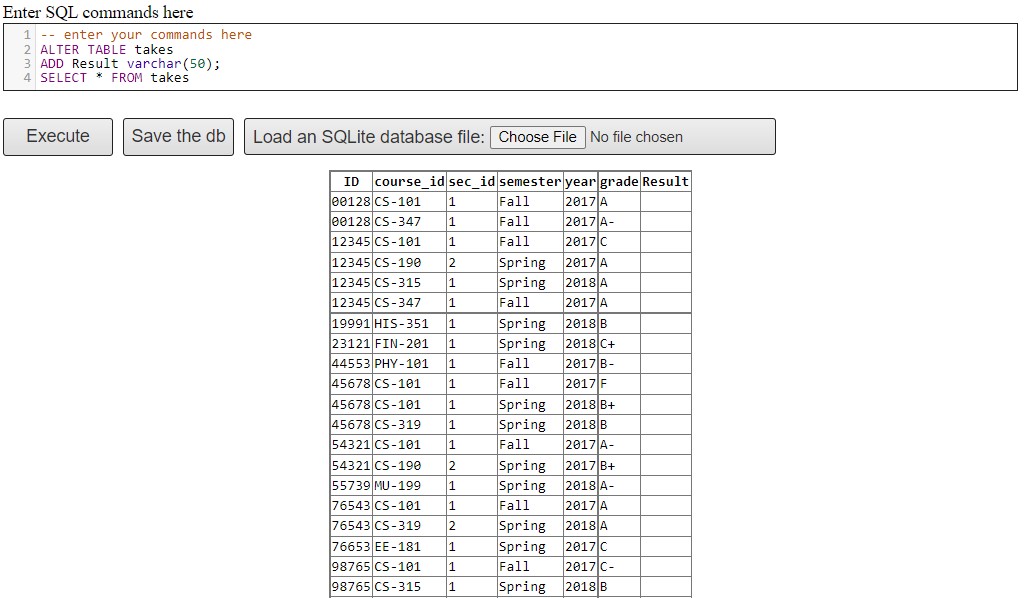


Figure output after running above query

1. *teaches*

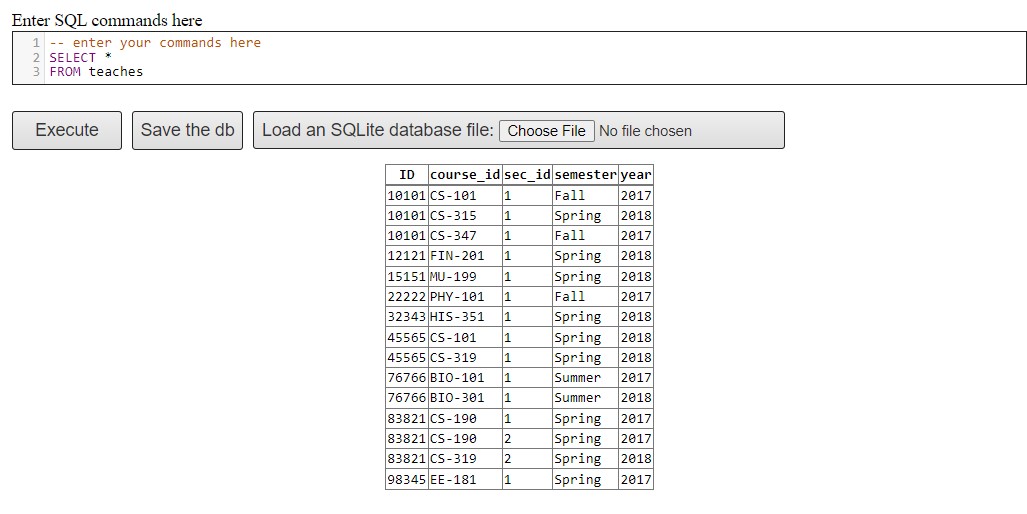
**

Figure teaches table

Query:

**SELECT** \* **FROM** teaches **ORDER BY** year;

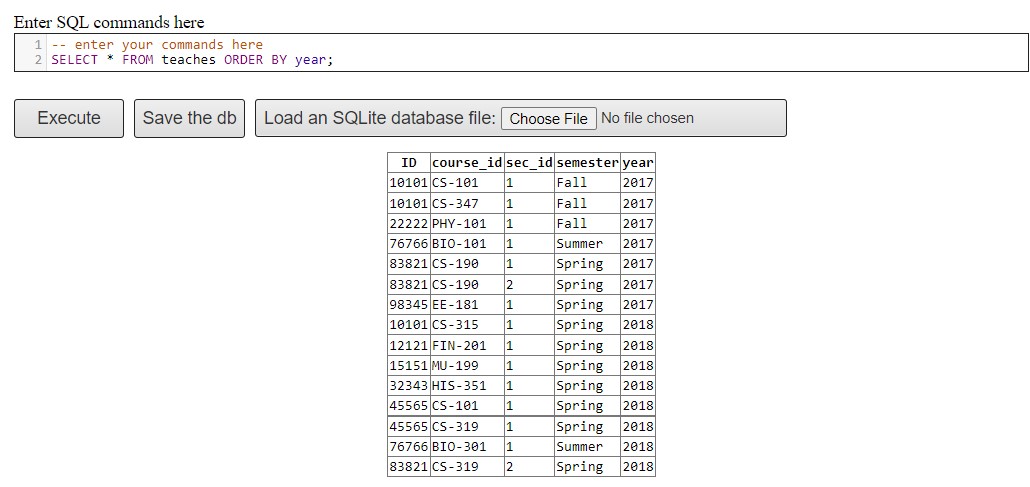


Figure output after running above query

1. *time\_slot*

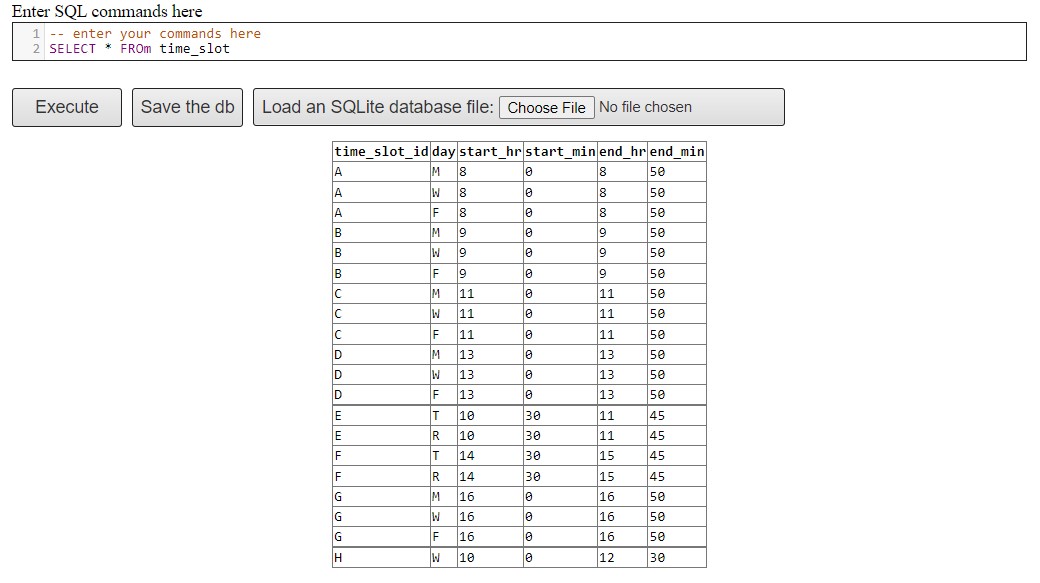
**

Figure time\_slot table

Query:

**SELECT** time\_slot\_id, day

**FROM** time\_slot

**WHERE** start\_min = 0 **and** end\_hr<10

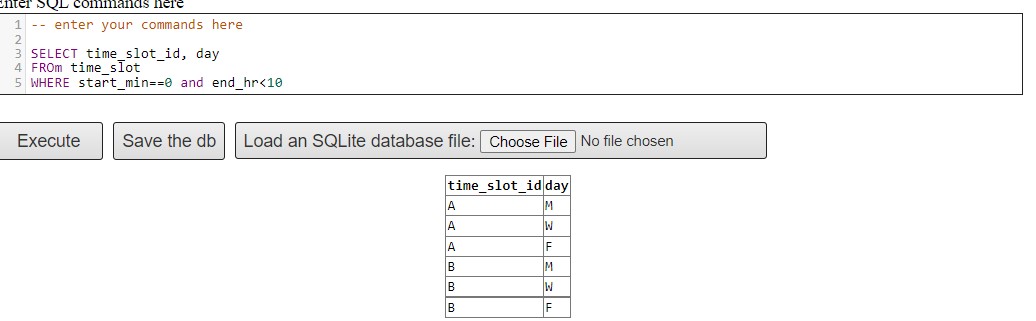


Figure output after running above query

1. a)

In these question I have taken xxx = ‘Music’ and yyy = ‘Packard’

Query:

**SELECT** **DISTINCT** student.ID, student.name

**FROM** student, department, section

**WHERE** department.dept\_name = ‘Music’ **and** department.building = ’Packard’ **and** student.dept\_name = department.dept\_name and section.building = department.building

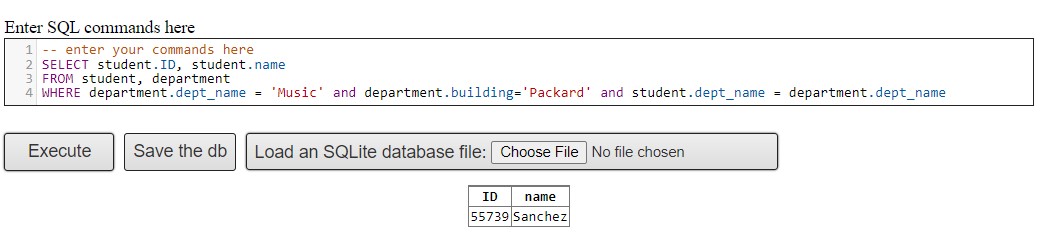


Figure Output

b)

Query:

**SELECT** student.ID, student.name

**FROM** takes, student

**WHERE** grade = ‘A’ **and** student.id = takes.id

INTERSECT

**SELECT** student.ID, student.name

**FROM** takes, student

**WHERE** grade = ‘C’ **and** student.id = takes.id

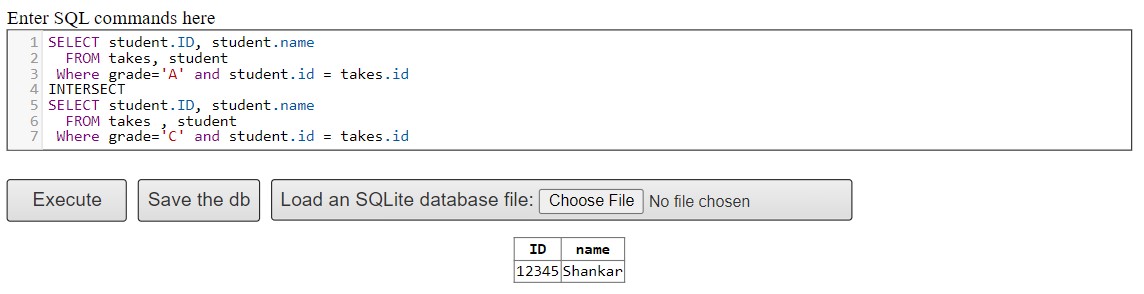


Figure output

c)

Query:

**SELECT DISTINCT** classroom.building, classroom.room\_number

**FROM** section, classroom, time\_slot

**WHERE** classroom.building = section.building **and** classroom.room\_number = section.room\_number **and** section.time\_slot\_id = time\_slot.time\_slot\_id **and** day = ’W’

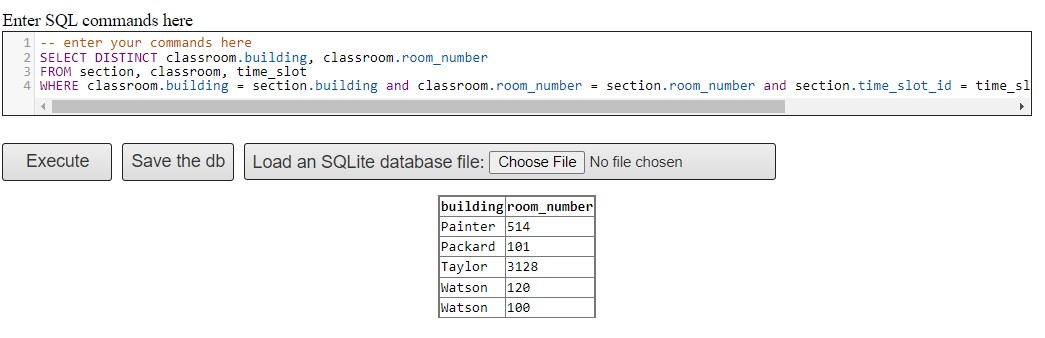


Figure output