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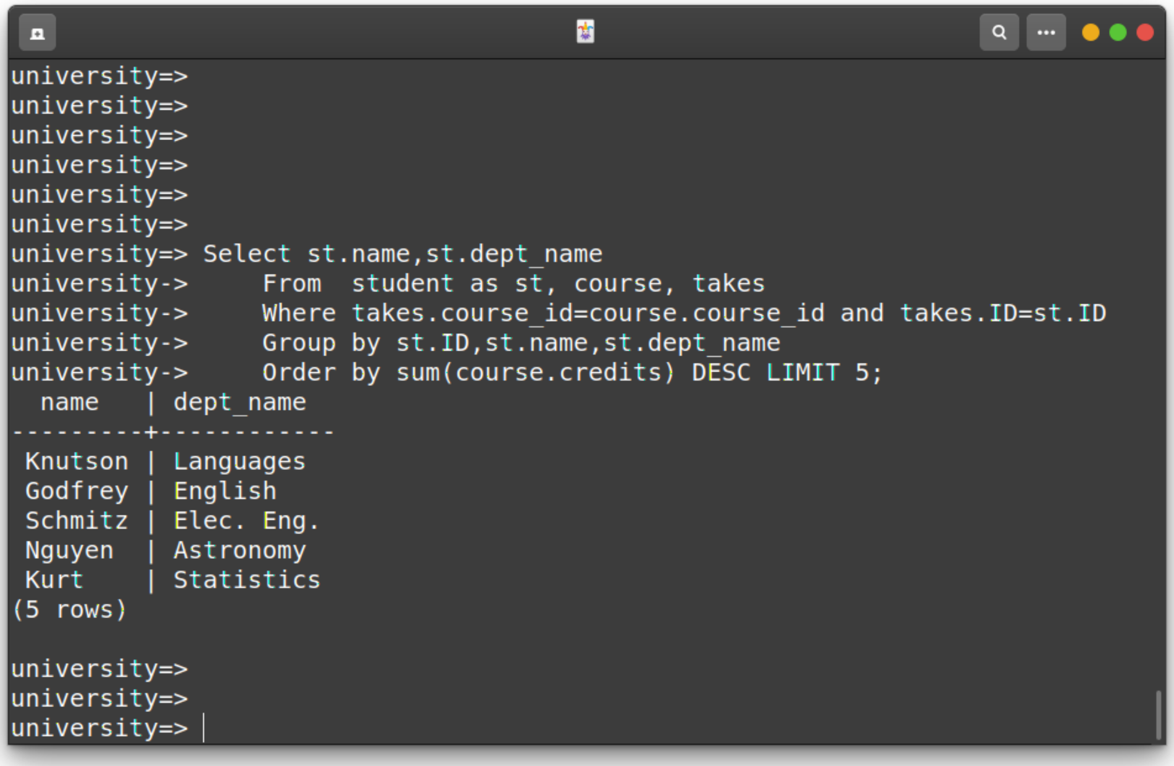
CS313 - Lab 5

Q.1

Q2. Find top 5 students (get their names and department) by tot_cred (i.e, those top 5 who have completed highest total credits).
(This question needs to be submitted with query and output).

```
Select st.name,st.dept_name
    From  student as st, course, takes
    Where takes.course_id=course.course_id and takes.ID=st.ID
    Group by st.ID,st.name,st.dept_name
    Order by sum(course.credits) DESC LIMIT 5;
```



```
university=>
university=>
university=>
university=>
university=>
university=>
university=> Select st.name,st.dept_name
university->     From  student as st, course, takes
university->     Where takes.course_id=course.course_id and takes.ID=st.ID
university->     Group by st.ID,st.name,st.dept_name
university->     Order by sum(course.credits) DESC LIMIT 5;
  name   | dept_name
---------+------------
 Knutson | Languages
 Godfrey | English
 Schmitz | Elec. Eng.
 Nguyen  | Astronomy
 Kurt    | Statistics
(5 rows)

university=>
university=>
university=> |
```

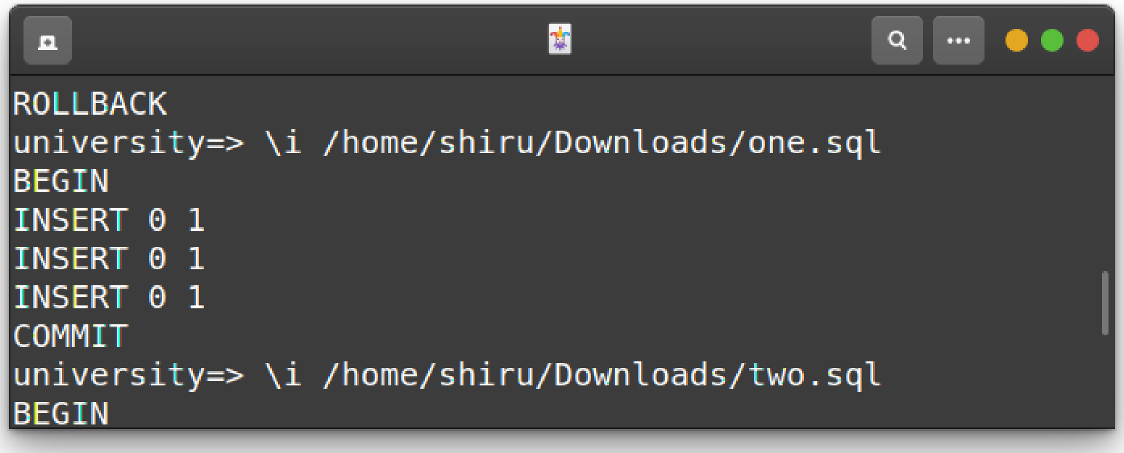
Q.2

Q5. Use begin transaction SQL statement along with commit/rollback.
(This question needs to be submitted with a query or statements of sql file and output)

You need to write insert statements for the following:
i) add a course
ii) create a section for it within some year/semester etc.
iii) assign a teacher to it

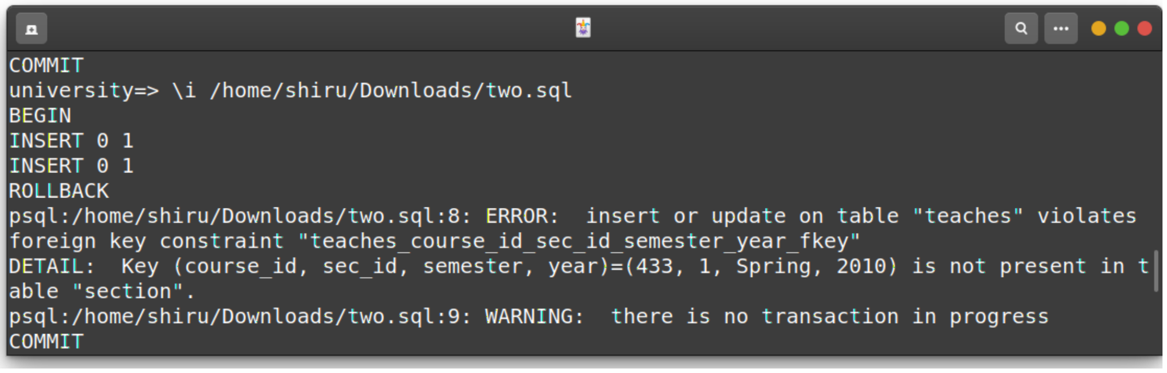
Create a file (.sql type) containing the above statements with begin,commit or rollback transactions as per the following cases.Create separate .sql file for each of the following cases and execute :

```
Begin TRANSACTION;
Insert into course VALUES ('433', 'Potterology', 'Comp. Sci.', 4);
Insert into section VALUES (433, '1', 'Spring', '2010', 'Whitman', '434', 'O');
Insert into teaches VALUES ('3335', 433, '1', 'Spring', '2010');
Commit TRANSACTION;
```



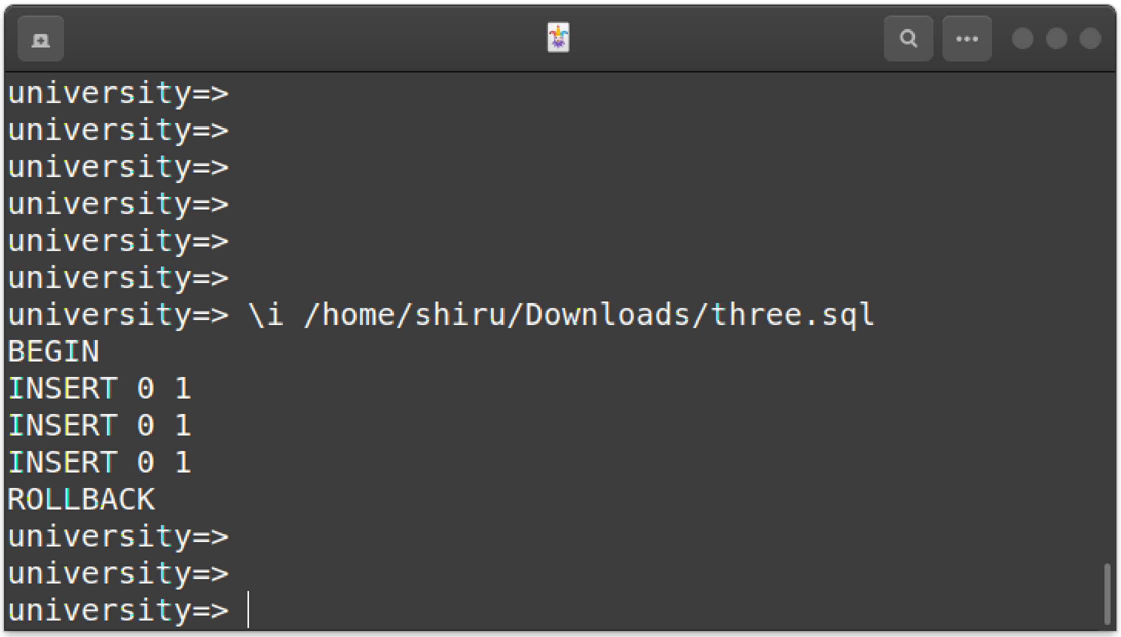
```
ROLLBACK
university=> \i /home/shiru/Downloads/one.sql
BEGIN
INSERT 0 1
INSERT 0 1
INSERT 0 1
COMMIT
university=> \i /home/shiru/Downloads/two.sql
BEGIN
```

Begin TRANSACTION;
Insert into course VALUES (433, 'Potterology', 'Comp. Sci.', 4);
Insert into section VALUES (433, '1', 'Spring', '2010', 'Whitman', '434', 'O');
Rollback TRANSACTION;
Insert into teaches VALUES ('3335', 433, '1', 'Spring', '2010');
Commit TRANSACTION;



```
COMMIT
university=> \i /home/shiru/Downloads/two.sql
BEGIN
INSERT 0 1
INSERT 0 1
ROLLBACK
psql:/home/shiru/Downloads/two.sql:8: ERROR:  insert or update on table "teaches" violates
foreign key constraint "teaches_course_id_sec_id_semester_year_fkey"
DETAIL:  Key (course_id, sec_id, semester, year)=(433, 1, Spring, 2010) is not present in t
able "section".
psql:/home/shiru/Downloads/two.sql:9: WARNING:  there is no transaction in progress
COMMIT
```

Begin TRANSACTION;
Insert into course VALUES ('433'', 'Weasleyology', 'Comp. Sci.', 4);
Insert into section VALUES ('433', '1', 'Spring', '2010', 'Whitman', '134', 'O');
Insert into teaches VALUES ('3335', '433', '1', 'Spring', '2010');
Rollback TRANSACTION;



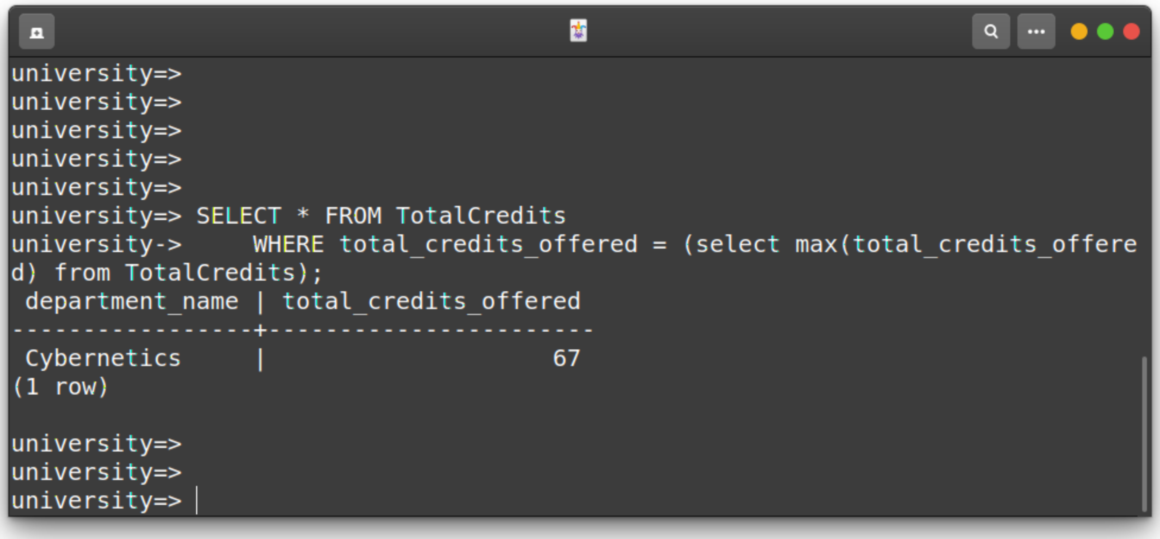
```
university=>
university=>
university=>
university=>
university=>
university=>
university=> \i /home/shiru/Downloads/three.sql
BEGIN
INSERT 0 1
INSERT 0 1
INSERT 0 1
ROLLBACK
university=>
university=>
university=> 
```

Q.3

```
CREATE VIEW TotalCredits AS
   SELECT department.dept_name AS department_name, sum(course.credits)
AS total_credits_offered
   FROM department,course WHERE   department.dept_name =
course.dept_name
   group by department.dept_name;
```

Output : CREATE VIEW

```
SELECT * FROM TotalCredits
   WHERE total_credits_offered = (select max(total_credits_offered) from
TotalCredits);
```

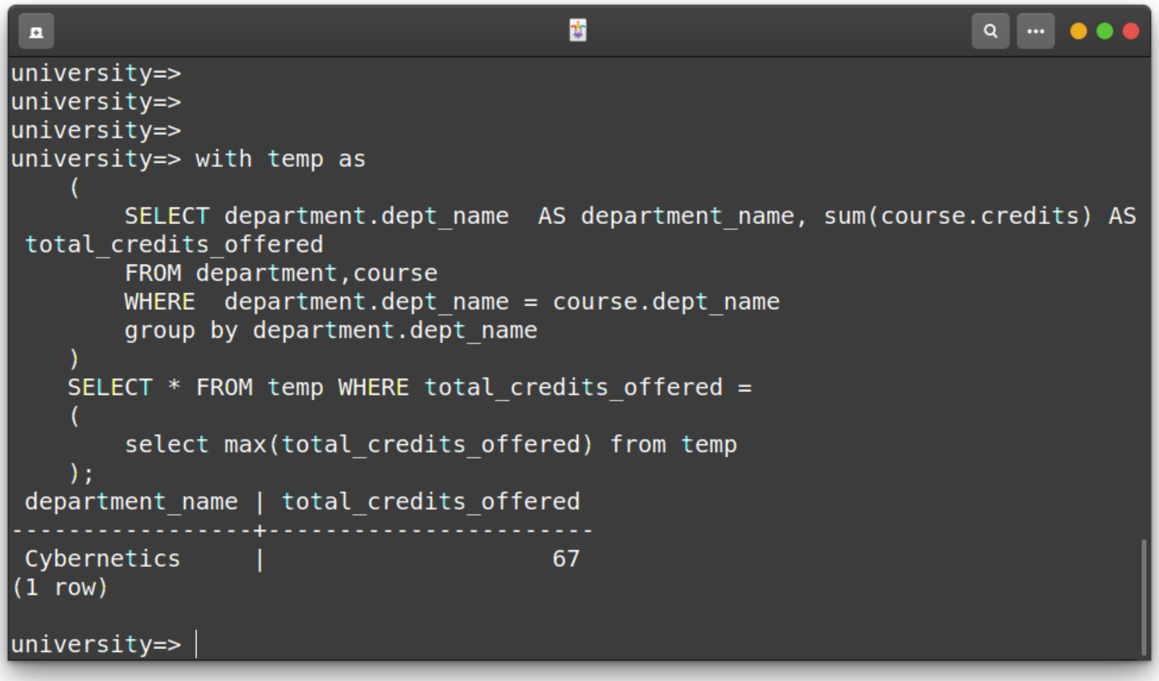


```
university=>
university=>
university=>
university=>
university=>
university=> SELECT * FROM TotalCredits
university->     WHERE total_credits_offered = (select max(total_credits_offere
d) from TotalCredits);
 department_name | total_credits_offered
-----------------+-----------------------
 Cybernetics     |                    67
(1 row)

university=>
university=>
university=> 
```

Base Table Query:

```
with temp as
   (
      SELECT department.dept_name  AS department_name,
sum(course.credits) AS total_credits_offered
      FROM department,course
      WHERE  department.dept_name = course.dept_name
      group by department.dept_name
   )
   SELECT * FROM temp WHERE total_credits_offered =
   (
      select max(total_credits_offered) from temp
   );
```



```
university=>
university=>
university=>
university=> with temp as
    (
        SELECT department.dept_name  AS department_name, sum(course.credits) AS
 total_credits_offered
        FROM department,course
        WHERE  department.dept_name = course.dept_name
        group by department.dept_name
    )
    SELECT * FROM temp WHERE total_credits_offered =
    (
        select max(total_credits_offered) from temp
    );
 department_name | total_credits_offered
-----------------+-----------------------
 Cybernetics     |                    67
(1 row)

university=> 
```