Lab_6A

In addition to the key constraints, you should also be familiar with UNIQUE, NOT NULL, CHECK and CASCADE. Cascade is the constraint most associated with referential integrity (if you haven't already watched the video, please do, now.). Cascades control how changes ripple through a database. For example, if a student is removed from the classes table, they probably shouldn't be removed from the enrollment table but if they are removed from the table of enrolled students, they should be removed from the classes table.

```
Here is an example of a CHECK constraint:

CREATE TABLE check_constraint_example (
user_id bigserial,
user_role varchar(50),
salary integer,

CONSTRAINT user_id_key PRIMARY KEY (user_id)

CONSTRAINT check_role_in_list CHECK (user_role IN ('Admin', 'Staff')),

CONSTRAINT check_salary_nonzero CHECK (salary)
```

1. write some code to test this our. See what happens if your attempt to insert violates either CHECK constraint.

```
Data Output Messages Notifications

ERROR: Failing row contains (1, Guest, 1000).new row for relation "check_constraint_example1" violates check constraint "check_role_in_list1"

ERROR: new row for relation "check_constraint_example1" violates check constraint "check_role_in_list1"

SQL state: 23514

Detail: Failing row contains (1, Guest, 1000).

Data Output Messages Notifications

ERROR: Failing row contains (2, Admin, 0).new row for relation "check_constraint_example1" violates check constraint "check_salary_nonzero1"

ERROR: new row for relation "check_constraint_example1" violates check constraint "check_salary_nonzero1"

SQL state: 23514

Detail: Failing row contains (2, Admin, 0).
```

2. create some code to construct a CHECK constraint that uses a logical operator such as AND or OR.

```
Data Output Messages Notifications

ERROR: Failing row contains (1, -1, 10).new row for relation "check_constraint_logical" violates check constraint "check_values_logical"

ERROR: new row for relation "check_constraint_logical" violates check constraint "check_values_logical"

SQL state: 23514

Detail: Failing row contains (1, -1, 10).
```

```
Data Output Messages Notifications

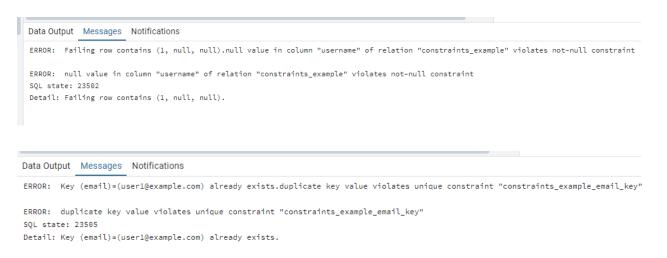
ERROR: Failing row contains (2, 5, -5).new row for relation "check_constraint_logical" violates check constraint "check_values_logical"

ERROR: new row for relation "check_constraint_logical" violates check constraint "check_values_logical"

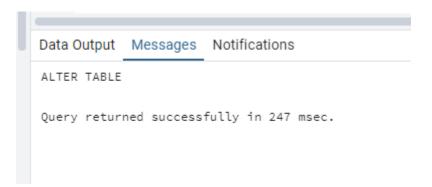
SQL state: 23514

Detail: Failing row contains (2, 5, -5).
```

3. now that you know how to create CONTRAINTS, write some code that creates a NOT NULL and a UNIQUE constraint.



4. write some code that uses ALTER TABLE to remove a constraint



5. write some code that adds a constraint



```
Data Output Messages Notifications

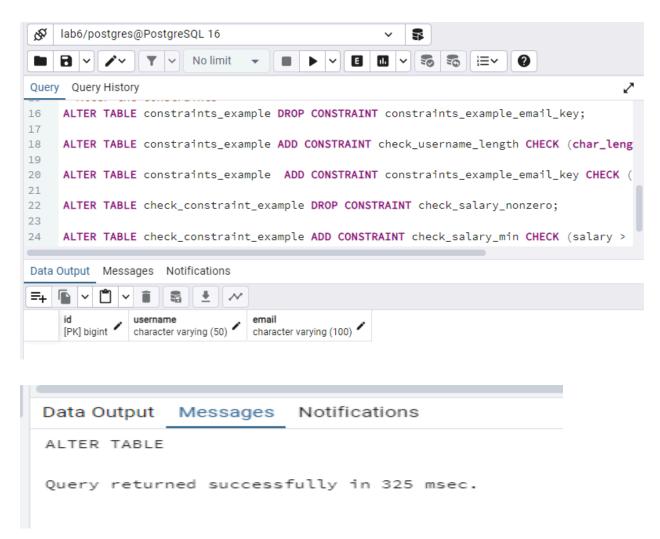
ALTER TABLE

Query returned successfully in 325 msec.
```

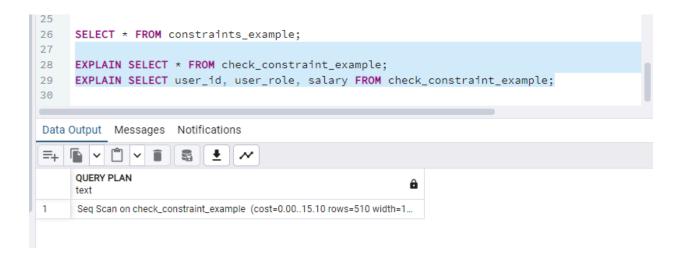
6. write some code that changes the salary constraint to greater than 1,000

NOTE: if you attempt to add or alter a contraint that would be violated by data already in the table, you will be prevented from performing the modification.

You can use EXPLAIN to compare the execution time of two queries.



7. Use explain to compare the processing speed of a query using * and a query enumerating each column. Cascade, as described above, controls how changes propagate through a database.



8. Using two related tables that you create here or that you've already created, write some code (ON DELETE CASCADE) that, when you delete the row containing the foreign key in one table, it also deletes the row in the related table containing the primary key.

