CECS 323 LAB KEYS

OBJECTIVE: Get some firsthand experience with keys and how they work.

INTRODUCTION: Whenever we build a primary key in a table, the database management system also builds a uniqueness constraint in the background. That uniqueness constraint, in turn, relies on an index to enforce the uniqueness of the key. The existing data and the presence of uniqueness constraint(s) on the table determine what data we can and cannot insert into the table at any given time. This lab asks you to think about the response that the database management system will give you before you actually try a given insert.

PROCEDURE:

Please, in this lab, run each individual statement separately. If you just cut and paste the whole thing into NetBeans and run it in a rush, you will miss some learning opportunities.

For starters, look at each of these statements and copy the statement into a Word document. Write down what you think the result of the statement will be. If you think that the database will produce an error, please be as specific as you can about just what sort of error you think it will receive.

To capture your expectations and the results from these statements, use the following table as a template:

SQL statement	My guess	Actual
CREATE TABLE customers (first_name VARCHAR(20) NOT NULL, last_name VARCHAR(20) NOT NULL, phone VARCHAR(20) NOT NULL, street VARCHAR(50), zipcode VARCHAR(5));	Table called "customers" will be created	Executed successfully in 0.014 s. no rows affected. Line 1, column 1 Execution finished after 0.091 s, no errors occurred.

Add one row to the above table for each statement.

Then, please run each statement one at a time, and paste in **the exact response that you receive from the database management system** gave you in response. If there is no error, you can just type in "No error" on your lab sheet.

If you get an error that you did not expect, please give that some thought and try to come up with a reason that you think you might have gotten that error.

Take your completed document and drop it into the appropriate drop box.

```
CREATE TABLE customers (
first_name VARCHAR(20) NOT NULL,
last_name VARCHAR(20) NOT NULL,
phone VARCHAR(20) NOT NULL,
street VARCHAR(50),
zipcode VARCHAR(5));

insert into customers (first_name, last_name, phone, street, zipcode)
values ('Tom', 'Jewett', '562-555-1122', '123 Mockingbird Lane', '90210');
```

```
insert into customers (first_name, last_name, phone, street, zipcode)
values ('Tom', 'Jewett', '562-555-1122', '123 Mockingbird Lane', '90210');

delete from customers where first_name = 'Tom';

alter table customers
add constraint customers_pk primary key (first_name, last_name, phone);

insert into customers (first_name, last_name, phone, street, zipcode)
values ('Tom', 'Jewett', '562-555-1122', '123 Mockingbird Lane', '90210');

insert into customers (first_name, last_name, phone, street, zipcode)
values ('Tom', 'Jewett', '562-555-1122', '123 Mockingbird Lane', '90210');

-- Every table must have at least one superkey, the entire set of columns
-- Generally, we will not create such a uniqueness constraint because it is
-- rare that other, more restrictive uniqueness constraints will catch a
-- duplicate row before this "global" uniqueness constraint does.
alter table customers add constraint customer_uk01
unique (first_name,last_name,phone,street,zipcode);

insert into customers (first_name, last_name, phone, street, zipcode)
values ('Tom', 'Jewett', '562-555-1122', '123 Mockingbird Lane', '90210');

alter table customers add constraint customer_uk02
unique (first_name,last_name,phone,street);

alter table customers add constraint customer_uk03
unique (first_name,last_name,phone,zipcode);

alter table customers add constraint customer_uk04
unique (first_name,last_name,street,zipcode);

insert into customers (first_name, last_name, phone, street, zipcode)
values ('Tom', 'Jewett', '714-888-1212', '123 Mockingbird Lane', '90713');

insert into customers (first_name, last_name, phone, street, zipcode)
values ('Tom', 'Jewett', '714-888-7000', '123 Mockingbird Lane', '90210');

alter table customers add constraint customer_uk05
unique (first_name,last_name,street);
```

```
alter table customers add constraint customer_uk06
unique (first_name,last_name);
```

WHAT TO TURN IN:

- Your Word document with your results from running these statements.
- Your team's Collaboration document. You can find the template for that document at BeachBoard | Content | Student Helps | Lab Collaboration Document.