**Views And Indexes Lab**

This is a required but ungraded activity to learn about views and indexes.

## Part A: Indexes

Step 1. Import a fresh copy of the northwind database provided on the course webpages.

Step 2. Examine the customers table. Which columns currently have indexes defined?

Step 3. What SQL statement would create a new index on the home phone numbers?

ALTER TABLE customers ADD INDEX(home\_phone);

Discussion question: what are the advantages and disadvantages of creating the new index on home phone numbers?

Advantage: lookups based on home phone number will be faster.

Disadvantage: insertions into the table will be slower.

## Part B: Views

Step 1. Examine the order\_details table. Write an SQL command that selects only the id and order\_id and product\_id columns from the order\_details table, restricting to tuples whose order\_id is less than 40.

SELECT id, order\_id, product\_id FROM order\_details WHERE order\_id<40

Step 2. Create a new view that contains the information from the previous step. Name your view order\_details\_under40.

CREATE VIEW order\_details\_under40 AS SELECT id, order\_id, product\_id FROM order\_details WHERE order\_id<40

Step 3. Browse the order\_details\_under40 view and experiment with its properties. In what ways is it similar to a table? How does it differ from a table? Which of the following actions can be performed on the view:

* delete a tuple
* alter a value in one of the tuples
* insert a new tuple

What effect do these actions have on the original table order\_details?

These are all possible and they alter the original table. However, note that not all views are updatable. It depends on whether there is a unique mapping back to the original table(s).

Step 4. Create a new view called order\_details\_under40checked. This view is identical to the previous one except the SQL command will be appended with WITH CHECK OPTION. Experiment with inserting new tuples into this view. Is it possible to insert tuples whose order\_id is greater than 40? How does this compare with the previous view?

The check option prevents us adding tuples that don’t satisfy the WHERE clause in the view definition.