**SQL Semantic Checks**

* **CREATE DATABASE**
  + When switching databases, make sure that the database the user wants to switch to is not the current one.
    - More stipulation on this – we need to decide if we want to not allow user to create a database if one already exists.
* **DROP DATABASE**
  + Make sure the database exists.
* **SAVE**
* **LOAD DATABASE**
  + Make sure the database exists.
* **CREATE TABLE**
  + Cannot create a table that’s already defined.
  + Cannot create a column with a restriction if the number is not a positive int, must be 1 or greater.
  + When creating tables, make sure there are no duplicate column names.
  + Cannot create a field of NUMBER(a,x) where x is greater than a.
* **DROP TABLE**
  + Cannot drop a table that doesn’t exist.
* **INSERT INTO**
  + Cannot insert into a table that doesn’t exist.
  + Cannot insert into a table if there are duplicate column names specified.
  + Cannot insert into a table if the data types of the fields do not equal the data types of the values being passed.
  + Cannot insert into a table if the values would end up getting truncated
  + Cannot insert into a table if not inserting into a NOT NULL column
  + If we’re inserting a BIT value, make sure that it is a number with either 0 or 1 value.
  + Cannot insert into table if the fields do not exist in the table.
  + Cannot insert into a table if the # of values being passed does not equal the # of columns specified.
  + Cannot insert a NULL value into a column where NULLs are not allowed.
* **DELETE**
  + Cannot delete from a table if the table doesn’t exist.
  + Cannot use a WHERE clause if the columns don’t exist.
  + Cannot use a WHERE clause if the data types of the column does not match the data type of the value.
  + Cannot use a WHERE clause where the relative operator does not function with the data type specified. (ex. You can’t do >= with VARCHARs but you can with numbers)
* **UPDATE/wUPDATE**
  + Cannot use a WHERE clause if the columns don’t exist.
  + Cannot use a WHERE clause if the data types of the column does not match the data type of the value.
  + Cannot use a WHERE clause where the relative operator does not function with the data type specified. (ex. You can’t do >= with VARCHARs but you can with numbers)
* **SELECT/Wselect**
  + Cannot SELECT from a table if the table doesn’t exist.
  + Cannot use a WHERE clause if the columns don’t exist.
  + Cannot use a WHERE clause if the data types of the column does not match the data type of the value.
  + Cannot use a WHERE clause where the relative operator does not function with the data type specified. (ex. You can’t do >= with VARCHARs but you can with numbers)