CS579 – Fall 2023
Lab 4 (Project Part 4)

Due: 12/5

This assignment is a practice of implementing constraints using triggers and writing a stored procedure. Implement the following three triggers and one stored procedure.

1. A bid date cannot be earlier than the listed date of the property. If inserting a new tuple into the BID_HISTORY table would violate this constraint, your trigger must reject the insert and issue an appropriate error message.
2. When a tuple is inserted into the BID_HISTORY table, make sure that the buyer's realtor and the seller's realtor are not the same. If inserting a new tuple into the BID_HISTORY table would violate this constraint, your trigger must reject the insert and issue an appropriate error message.
3. When a tuple is inserted into the BID_HISTORY table, make sure that the bid price is higher than the current lowest bid price for the property. If inserting a new tuple into the BID_HISTORY table would violate this constraint, your trigger must reject the insert and issue an appropriate error message. Assume that there is at least one tuple in the BID_HISTORY table.
4. Write a stored procedure named *get_highest_bidder*. It receives as an input parameter a property ID, *PID*, and returns the following information about the highest bidder for the property: the name of the seller, the name of the seller's realtor, and the bid price.

For each of the first three constraints: If an insert operation is attempted (after initial population) which would violate the constraint, the operation should not be performed and an appropriate error message must be issued. Write a trigger and ***two test sql statements***. The first statement should succeed and the second statement should fail (i.e., the second statement violates the constraint and your trigger must block it and issue an error message). Write and execute the create trigger statements. Then, issue the test sql statements one at a time and capture the screenshots of the resulting screens.

For the stored procedure: Write the procedure and execute it. Then write ***two test sql statements***. The first sql statement must call the procedure and the second sql statement must be a select statement which displays the values of the three required columns (i.e., the name of the seller, the name of the seller's realtor, and the bid price) retrieved by the first sql statement. Run the two test sql statements and capture the screenshot of the resulting screen.

Deliverable:

1. Electronic copy: Include all three create trigger statements, a create procedure statement, and all test sql statements in a single file and name the file *p4.sql*. Your scripts must be syntactically correct and executable without error. Include all screenshots in a separate file and name it *screens.EXT*, where *EXT* is an appropriate file extension. DO NOT submit individual image files.

2. Combine the above two files into a single archive file and name it *LastName_FirstName*_P4.*EXT*, where *EXT* is an appropriate file extension (e.g., zip or *rar*) and submit it to Blackboard.

2 **Important:** The TA will test your triggers and the stored procedure on your database he created based on your Part 3 submission. If you changed your database tables or inserted more tuples after you submitted Part 3, then you have to also turn in all scripts with which the TA can update (or recreate) your database for this Part 4.