

## Assignment 2

Urban Real Estate Part 2 (10%)

### DUE DATE

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Session 12

### OBJECTIVE

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- Update Data
- Delete Data
- Create Tables
- Update Tables
- Delete Tables
- Rename Tables
- Create Views
- Filter by Subquery
- Use Subqueries as Calculated Fields
- Create a Join
- Use Table Aliases
- Use Different Join Types
- Use Joins with Aggregate Functions
- Use Joins and Join Conditions
- Create Combined Queries
- Copy from One Table to Another

### DESCRIPTION

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The Urban Real Estate Agency is undergoing expansion. The real estate boom has led to a sharp increase in real estate transactions. The agency has more than tripled its volume of transactions and as such has also increased its number of employees, including real estate agents, administrative staff and managers. The employees are divided into Accounting, Human Resources, Sales, Administration, Marketing, and Management. Agents are not all employees of the agency. Some are independent agents that work only on a commission basis. Each employee has a unique employee number.

Clients approach the agency for a variety of different transactions. The majority of clients come in to the agency looking for properties to purchase. Likewise, some clients come in to list their properties to sell. Some clients come looking for properties that are available for short term or long term renting or leasing.

The agency is adamant on providing personalized service to all their clients. A dedicated Agent or agent is assigned to each client to guide him or her through the entire process of purchasing or selling his or her property. Each client only works with one Agent. However, each Agent may work with several clients. The Agent is responsible for documenting each transaction related to each client.

The Agent meets the client to learn more about their needs, what they are looking for, where they are interested in purchasing a property (if it is for a purchase), price range, services, etc.

Clients are invited to search through the property listings database to identify the properties that interest them. They should be able to search for properties based on a variety of search criteria to refine their search. Typically, clients refine their searches on price, location, number of bedrooms, and types of properties. However, additional criteria may also be used for searching for the ideal property.

To ensure that the agency is able to track all transactions properly, each transaction must capture data that links the client to the property in question and the Agent that worked with them.

The agency lists a large number of different types of properties ranging from detached single dwelling properties, duplexes, triplexes, semi-detached, town houses, condominiums, to large multi dwelling properties.

The agency managers want all the data that relates to the agency operations to be stored in a robust database so that it can be easily accessed as needed, remains intact, and prevents information from being lost. All data must be stored in a way that is easily accessible, searchable, and maintained in an efficient manner.

### **Business rules:**

Management of the Urban Real Estate Agency wants the following business rules integrated into the database design.

- Each property must have a unique listing number that identifies it.
- Searches for properties can be made by property type, price, location, number of bedrooms, or any combination of property descriptors.
- Transaction types are Purchase, Sell, or Rental
- One Agent is assigned to multiple clients, but each client only works with one Agent.
- Agents must be identified by a unique identifier.
- Not all Agents are employees. Some Agents are independent agents that work for the agency on a commission basis. Management wants to be able to access Agent related data quickly. Agent specific data, should be able to track the usual information, (Name address etc) but also the Agents real estate license number and , and track the commissions paid to the Agent on all transactions
- Management want to be able to quickly identify what clients each Agent is working with.
- Each transaction must have a unique transaction identifier that serves to track the transaction,

the transaction details, and the client that entered into the transaction.

- Transaction details must be easily accessible by management for accounting requirements. They must be able to track transactions by date, (by week, month, year as needed) and by Agent.
- Each property that is listed for sale has a listing Agent. The listing Agent may be different from the Agent that is working with the client on a property purchase.
- Commission on each transaction is set as 6% of the transaction amount if the listing Agent is the same as the selling Agent. If the selling Agent is different from the listing Agent, then the commission is set at 3% each
- The Agency retains a total of 6% of the transaction as fees. From this amount, 1.5% is given as commission to the listing agent and 1.5% is given as commission to the selling agent.

## INSTRUCTIONS

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For the purposes of Assignment 2, you will be using your final database design for Assignment 1. You will be required to write a number of SQL scripts to create the database, its tables and populate it with some data.

1. Using your DBMS (SQL Server, or MySQL) create the Urban Real Estate Database. ( 1 marks)
2. Write an SQL script that will create the tables for the Urban Real Estate Database based on your design. You tables should include the proper field names, data types, and any specific details such as allowing or not allowing null values. (20 marks)
3. Write a script or series of scripts that will populate the tables with the following details. (30 marks)
  - Create 5 employees of your choice, 3 of which are agents
  - Add 10 clients
  - Add 6 properties to the properties tables ( include the required details)
  - Add 4 complete transactions where at least one is a rental
  - Populate any lookup tables that your design may include (this is for items like property types or transaction types.
4. Write a script that will display the Client details for the clients that have purchased a property. ( 3 marks)
5. Write a script that will show the properties that each agent has listed grouped by agent. (3 marks)
6. Write a script that will show the commission earned for each agent ( Must use a calculated field for this

## SUBMISSION INSTRUCTIONS

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- Copies of the scripts produced
- Screen captures of the results of running your scripts
- You do not need to print out a copy of the final work, simply save it as a Word or PDF document and email it to your instructor.

Work must be submitted in the correct file type and be properly labelled as per the College naming convention:

NAME\_COURSE\_ASSIGNMENT. E.g. XuXiaLing\_FM50D\_A01.

## GRADING CRITERIA

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Assignment Value: **10%**

Grading Criteria	Grading
Creation of the Urban Real Estate database	1
Creation of tables and attributes	20
Populating the tables	30
Client purchase query script	3
Properties listed by agent script	3
Commission calculation script	3
<b>TOTAL</b>	<b>/60</b>