**Simple/Basic SQL queries when opening database:**

SHOW DATABASE;

USE “Databasename”;

SHOW TABLES;

DESCRIBE “PropertyInfo”;

SELECT DISTINCT “FieldName”

FROM “Tablename”;

SELECT \* FROM “TableName” Limit 1;

**\G** (Makes everything readable)… example:

**SELECT \* FROM “TableName” Limit 1 \G;**

Examples questions to construct **SQL queries** housing and realtor data:

1. **Which houses are currently on the market and what are their prices?**

SELECT HouseStatus, PropType, ListPrice, Address, City, Acres, StyleOrRentType

FROM PropertyInfo

WHERE HouseStatus ="ACTV"

ORDER BY ListPrice ASC;

1. **What is the average price of a house in a particular city or zip code?**

SELECT AVG(ListPrice)

FROM PropertyInfo

WHERE city “East Hartford” ;

**Print the Average price of more than 1 city.**

SELECT AVG(ListPrice)

FROM PropertyInfo

Where City IN (“East Hartford” , “Manchester”)

GROUP BY City;

**Print the AVG of 2 cities combined:**

SELECT AVG(ListPrice)

FROM PropertyInfo

Where City IN (“East Hartford” , “Manchester”)

GROUP BY City;

1. **Which realtor has the most listings currently on the market?**

SELECT R.ListingAgent, COUNT(RL.MLSNum) AS TotalListings

FROM Realtor AS R

INNER JOIN RealtorListing AS RL ON R.AgentID = RL.AgentID

INNER JOIN PropertyInfo AS PI ON RL.MLSNum = PI.MLSNum

GROUP BY R.ListingAgent

ORDER BY TotalListings DESC;

~~LIMIT 1;~~

1. How many houses have been sold in the past year and what were their prices?
2. What is the total commission earned by a particular realtor in a given time period?
3. How many houses are available for rent and what is their average monthly rent?
4. Which houses have been on the market for more than 6 months and have not sold yet?
5. What is the distribution of house prices by neighborhood?
6. Which houses have a pool and what is their average price compared to houses without a pool?
7. Which realtors have sold the most houses in a given time period?
8. What is the average square footage of houses in a particular neighborhood?
9. Which houses have a garage and what is their average price compared to houses
10. without a garage?
11. How many houses are owned by a particular real estate company?
12. What is the average time it takes for a house to sell in a particular neighborhood?
13. Which realtors have the highest sales commission percentage?

**Simple/Basic NoSQL queries when opening database:**

show databases/dbs

use “DataBaseName”

Show tables

db.PropertyInfo.findOne() 🡪 **Returns the first document in collection**

Object.keys(db.PropertyInfo.findOne()) 🡪 **Returns document Field names**

db.collection.countcollection() 🡪 Returns # of documents in collection

Examples questions to construct **NoSQL queries** housing and realtor data:

1. Which houses are currently on the market and what are their prices?
2. What is the average price of a house in a particular city or zip code?
3. Which realtor has the most listings currently on the market?
4. How many houses have been sold in the past year and what were their prices?
5. What is the total commission earned by a particular realtor in a given time period?
6. How many houses are available for rent and what is their average monthly rent?
7. Which houses have been on the market for more than 6 months and have not sold yet?
8. What is the distribution of house prices by neighborhood?
9. Which houses have a pool and what is their average price compared to houses without a pool?
10. Which realtors have sold the most houses in a given time period?
11. What is the average square footage of houses in a particular neighborhood?
12. Which houses have a garage and what is their average price compared to houses
13. without a garage?
14. How many houses are owned by a particular real estate company?
15. What is the average time it takes for a house to sell in a particular neighborhood?
16. Which realtors have the highest sales commission percentage?

**MySQL (SQL) CODE**

1. **Find all the MLSNum in PropertyInfo table with ListPrice greater than $500,000.**

SELECT MLSNum

FROM PropertyInfo

WHERE ListPrice > 500000;

1. **Find all the distinct PropType in PropertyInfo table.**

SELECT DISTINCT PropType

FROM PropertyInfo;

1. **Find the number of houses with HouseStatus of "For Sale" in PropertyInfo table.**

SELECT COUNT(\*)

FROM PropertyInfo

WHERE HouseStatus = 'For Sale';

1. **Find the average ClosePrice for each City in PropertyInfo table.**

SELECT City, AVG(ClosePrice)

FROM PropertyInfo

GROUP BY City;

1. **Find all the Realtors who have a Listing in the RealtorListing table.**

SELECT DISTINCT AgentID

FROM RealtorListing;

1. **Find all the Realtors who have a Listing with a ListPrice greater than $500,000.**

SELECT DISTINCT r.AgentID

FROM Realtor r

INNER JOIN RealtorListing rl ON r.AgentID = rl.AgentID

INNER JOIN PropertyInfo pi ON rl.MLSNum = pi.MLSNum

WHERE pi.ListPrice > 500000;

1. **Find the total number of houses that each Realtor has in the RealtorListing table.**

SELECT AgentID, COUNT(\*) as TotalListings

FROM RealtorListing

GROUP BY AgentID;

1. **Find the number of houses with HouseStatus of "For Sale" in each City in PropertyInfo table.**

SELECT City, COUNT(\*) as TotalForSale

FROM PropertyInfo

WHERE HouseStatus = 'For Sale'

GROUP BY City;

1. **Find the average ListPrice for each PropType in PropertyInfo table.**

SELECT PropType, AVG(ListPrice)

FROM PropertyInfo

GROUP BY PropType;

1. **Find the top 10 most common ListingAgents in the Realtor table.**

SELECT ListingAgent, COUNT(\*) as TotalListings

FROM Realtor

GROUP BY ListingAgent

ORDER BY TotalListings DESC

LIMIT 10;

1. **Find the average ClosePrice for each year a house was built in PropertyInfo table.**

SELECT YearBuilt, AVG(ClosePrice)

FROM PropertyInfo

GROUP BY YearBuilt;

**MONGODB (NoSQL) CODE**

1. **Find all the MLSNum in PropertyInfo collection with ListPrice greater than $500,000.**

db.PropertyInfo.find({ListPrice: {$gt: 500000}}, {MLSNum: 1})

1. **Find all the distinct PropType in PropertyInfo collection.**

db.PropertyInfo.distinct("PropType")

1. **Find the number of houses with HouseStatus of "For Sale" in PropertyInfo collection.**

db.PropertyInfo.countDocuments({HouseStatus: "For Sale"})

1. **Find the average ClosePrice for each City in PropertyInfo collection.**

db.PropertyInfo.aggregate([{$group: {\_id: "$City", avgClosePrice: {$avg: "$ClosePrice"}}}])

1. **Find all the Realtors who have a Listing in the RealtorListing collection.**

db.RealtorListing.distinct("AgentID")

1. **Find all the Realtors who have a Listing with a ListPrice greater than $500,000.**

db.RealtorListing.aggregate([{$lookup: {from: "PropertyInfo", localField: "MLSNum", foreignField: "MLSNum", as: "property"}}, {$unwind: "$property"}, {$match: {"property.ListPrice": {$gt: 500000}}}, {$group: {\_id: "$AgentID"}}])

1. **Find the total number of houses that each Realtor has in the RealtorListing collection.**

db.RealtorListing.aggregate([{$group: {\_id: "$AgentID", TotalListings: {$sum: 1}}}])

1. **Find the $ of houses with HouseStatus of "For Sale" in each City**

db.PropertyInfo.aggregate([{$match: {HouseStatus: "For Sale"}}, {$group: {\_id: "$City", TotalForSale: {$sum: 1}}}])

1. **Find the average ListPrice for each PropType in PropertyInfo collection.**

db.PropertyInfo.aggregate([{$group: {\_id: "$PropType", avgListPrice: {$avg: "$ListPrice"}}}])

1. **Find the top 10 most common ListingAgents in the Realtor collection.**

db.Realtor.aggregate([{$group: {\_id: "$ListingAgent", TotalListings: {$sum: 1}}}, {$sort: {TotalListings: -1}}, {$limit: 10}])

1. **Find the average ClosePrice for each year a house was built in PropertyInfo collection.**

db.PropertyInfo.aggregate([{$group: {\_id: "$YearBuilt", avgClosePrice: {$avg: "$ClosePrice"}}}])