**General Questions**

1. **How do you calculate the Health Ratio for a Retail Tenant?**

The Health Ratio assesses how well a tenant’s business is performing. It is the percent of rent being paid to the owner verses the tenant’s gross sales.

Take the annual rent paid and divide it by the annual gross sales

For example if a tenant is paying $100,000 a year in rent and the tenant’s store sales are $1,000,000, the Health Ratio would be 10%.

1. **Explain what a Cap Rate is and how it is used in Real Estate Transactions?**

The Cap Rate is used in the world of commercial real estate to indicate the rate of return that is expected to be generated on a real estate investment property.

Its use in Real Estate Transactions is to estimate the investor’s potential return on their investment in the real estate market. The Cap Rate represents the yield of a property over a one-year time horizon assuming the property is purchased in cash and not a loan. The Cap Rate indicates the property’s intrinsic, natural, and un-levered rate of return.

1. **In SQL, Explain the difference between the following terms and explain how you would use each of these in a query:**
   1. **Inner Join** – Selects records that have matching values in both tables. The inner join selects all rows from both tables as long as there’s a match between the columns.
   2. **Outer Join** – Will return all records that have values in either the left (called table 1) or right table (called table 2). It will return all matching records from both tables whether the other tables matches or not.
   3. **Left Join** – Returns all records from the left table, and the matching records from the *right table*. If you have 2 separate tables, and Table 1 has an ID and NAME column, you can implement a **left join** with Table 2’s Order ID and Customer ID using the ON clause, and return the matches, as well as no matches with Null value.
   4. **Right Join** – Returns all records from the right table, and the matching records from the left table. If you have the 2 separate tables, where Table 1 has an ID and NAME column, you can implement a **right join** to return the values from the right table and match values from the left table. It will return Null if there are not matches.
   5. **Outer Apply** –Returns all records from an outer table, without regard to its match with the inner table………’s expression. It will return Null for non-matches. If you have a Department Table and you have an Employees Table (Employee would belong to a Department), you can use the Outer Apply to evaluate Employee’s Table for each record in the Department Table. It will then return non-correlated data as well.
2. **In SQL there is a concept called a Cursor. Some hate them, some love them. Explain when you can use them, and other solutions.**

There are 2 types, **Weakly-typed cursor** and **strongly-typed cursor** data types. Weekly typed is a generic version while Strongly typed means you know which type it is. The cursor is the pointer in memory of 0 to many rows from a query. The cursor is typically used in stored procedures best for large datasets due to efficiency. With this there is less traffic between client & server, and the database would be most efficient at crunching the data.

1. **Pick three (3) of Datex’s clients and tell us about them (from at least two different portfolio types).**

**Glimcher Group** is a commercial real estate development company that have assets across 14 states. They are adept with the development and refurbishing of all areas in commercial development. Their focus is mainly centered on developing premier retail shopping centers, acquiring under-performing retail assets with the ultimate end goal of maximizing their values through first-class redevelopment, re-leasing and management. Their primary focus is on community, small box store-anchored, and grocery-anchored shopping centers. Glimcher is well-positioned as a strongly capitalized company to work with lenders and developers in acquiring properties that have great turnaround opportunities. As part of their future plans, Glimcher is looking for acquisitions of underperforming assets as their main growth engine. They offer full complement leasing, tenant representation and property management services to their various shopping centers. In addition, their success is lays in their good relations with their tenants as well as their professional associates and fellow brokers.

**Acadia Realty Trust** is an equity real estate investment trust that has assets across 23 states and is focused on developing long-term, profitable growth through core/stabilized acquisitions and value-add /opportunity fund platforms. They seek to build a best-in-class, location driven real estate portfolio that has concentration in the nation’s most dynamic urban zones. Their strategic approach is to find properties that require redevelopment and re-tenanting in order to take advantage of utilizing their in-house leasing, construction, legal and management teams. They pride themselves in having a strong leadership team with a proven track record of maintaining and acquiring the high-quality retail properties. Additionally, they are environmentally conscious in its business affairs, adopting sustainability & energy efficiency and supports the Sustainable Development Goals.

**LS Capital** is a private equity firm that employs an investment strategy into residential & commercial real estate, property management and distressed debt properties. Their investment portfolio extends across 35 states and have invested approximately half billion of dollars in equity. They are skilled in leveraging their downsides while returning value to their investors. Because of this they are able to react quickly to opportunities in the market and have ultimately built a proven-track record for valuation, negotiation and asset management. As a result of their profound work, they have been able to maintain long-standing relationships within the real estate investment sphere. They seek to build long-term value with an outlook for growth.

1. **What are some core KPI’s that Datex Clients use and how are they used?**

KPI refers to the Key Performance Indicators, which is a quantifiable metric used to assess the performance of a business in the real estate industry. The goal of the KPI is to achieve high occupancy, low vacancy and maximize income, while lowering expenses. Datex Clients use various KPI’s to monitor the occupancy & vacancy, and income maximization coupled with smart expenses. This is indicative of the Return on Investment (ROI). Datex provides tools to manage expenses and give their client actionable insights such as reducing overhead and give the clients the control they need to yield favorable KPI’s that ultimately make them successful in their investment strategies.

1. **What is IRR and how does it apply to Real Estate?**

IRR refers to the Internal Rate of Return, measures the return of potential investment. The “Internal” means that the calculation does not factor in inflation and the cost of capital. The IRR is designed to help investors and business managers compare the profitability of different investments or capital expenditures. The higher the IRR, it’s considered favorable to that of a lower IRR.

1. **What is the difference between Java and JavaScript?**

Java is used for the backend and is a strongly typed language where variables must be declared first, with a type in order to use them. It is an object-oriented programming language that allows you to create compiled programs that run on nearly every platform. JavaScript is a dynamic, weakly typed programming language compiled at runtime. It is most commonly executed in a browser or any environment that has the “host environment” to parse the script and is the client-side language.

1. **What is a UDF in SQL?**

UDF refers to a User-Defined Function that lets you create a function by using a SQL expression or JavaScript code.

* 1. **Explain the different types.**

**Scalar Functions** – a function that returns one value per invocation, or returning one value per row.

Inline Table-Valued Functions – A table-valued function returns a single rowset (unlike stored procedures, which can return multiple result shapes)

Multi-Statement Table-Value functions – An MSTVF is a table-valued function that returns the result of multiple statements.

* 1. **Why are they used?**

**Technical Application Test**

1. **An HTML report retrieves more than 10,000 rows of data from an internal API for a particular set of parameters, and is already filtered down to its most specific contexts. This data is rendered into a table dynamically using templating in JavaScript. Each row contains not only text output, but includes dynamic client-side interactivity such as column-specific drilldown modals, commenting, etc. *The large dataset is causing performance issues on initial load times, user experience* *due to high client-side memory usage, etc*. Describe different strategies you could use to alleviate this issue, including** **at least:**
   1. **Client-Side Solution**

Async and Fetch the Data and using paging for the client-side to display

* 1. **Server-Side Solution**

Working with the DBA on a Database Optimalization Technique – likely normalization. Look at the WHERE clause would give an idea of where to create indexes. Paging would be getting a subset at a time, and as more data is needed, you can request it. So the server request only request a certain amount at a time.

* 1. **Pros/cons/nuances of different solutions**

**Pro** is improving performance. **Con**: Implementing the paging is complex. Latency – will slow down in response from the server

1. **In JavaScript, why does if(“false”) evaluate as true?**

JavaScript will treat any non-empty string, including string value “false” to as a truthy value. And a truthy value is considered true when encountered in a Boolean context. The non-empty string value of “false” yields true because JavaScript’s if statements assess Boolean values. And if there’s simply a non-empty string being evaluated in an if check, JavaScript uses coercion to evaluate a Boolean value if there is no Boolean comparison and also not a Boolean itself.

1. **You're building a single page application that has a <table> of different financial metrics about a property, dropdowns that filter the data client-side, and the ability to drill down from aggregate to more detailed views of the data.**
   1. **Test: Mock up a generic state tracking framework in JavaScript (or pseudocode) that:**
      1. **Tracks the state of dropdown filters**
      2. **Tracks drilldown state and activation / entry context**
      3. **Tracks and displays intra-drilldown traversal (drilldown within drilldown) state as breadcrumbs**
      4. **Manages URL updates with every state change, so that the user can use the Back and Forward buttons in their browser to traverse report states, as well as share a link to the specific view state on the page (parameters, filters, drill-down, etc).**
   2. **Note: Do not force a reload of the page, route, partials, etc. when the state changes; assume that all relevant data is retrieved on page load, or is retrieved asynchronously on certain user events such as drilldown. Your goal should be to mock the kind of objects and functions necessary to track every aspect of the user’s specific view state.**
2. **Write a C# Function that converts a list of any object type to a DataTable.**
3. **Given a table “users” with columns “Id” (identity integer primary key) and “Name” (varchar):**
   1. **Test: SQL**
4. **Given a data set with columns “Id,” “Name,” “Role, and “StartDate,” where while “Id” and “Name” are unique, there may be multiple rows with the same “Role” value:**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Name** | **Role** | **StartDate** |
| **1** | **Alice** | **Graphic Artist** |  |
| **2** |  |  |  |
| **3** |  |  |  |
| **4** |  |  |  |
| **5** |  |  |  |
| **6** |  |  |  |
| **7** |  |  |  |
| **8** |  |  |  |

1. **Test: Write a SQL query that returns all columns of the subset of rows, where each row represents the most recent “StartDate” for each “Role”**