1. **What is a data type? Why do we have data types?**

A data type refers to whether an attribute is an, interger, character, string, double. Regular data types include CHAR and VARCHAR, and Unicode data types include NCHAR and NVARCHAR. We have data types in order to ensure that only the correct type of data is stored in that column. Data types provide the most fundamental data integrity constraints.

1. **What is a collation? Name four elements of a collation.**

Collation is a property of character data that encapsulates several aspects: language support, sort order, case sensitivity, etc. It is a setting that determines how the database engine should treat each character. It is a set of rules of how to handle each data type, and it defines characteristics of that data type. The four (levels) of collation are, instance, database, column, and expression.

1. **How would you strip whitespace from a string? For example, suppose you had “ Dave ” but wanted only “Dave”.**

SELECT RTRIM(LTRIM(' Dave ');

1. **Suppose you wanted to make a list of every college and university that was called an Institute from the college table. Write the query.**

SELECT name FROM college WHERE name LIKE "%institute%"

1. **How would you find out the index of the first space in a string? For example, the index of the first space in “Barack Hussein Obama” would be 7.**

SELECT charindex(' ', 'Barack Hussein Obama')

1. **How would you select just the first name in a list of the presidents. First names can be an arbitrary length, from “Cal” to “Benjamin.”**

SELECT SUBSTRING('FirstName LastName', 1, CHARINDEX('FirstName LastName', ' '))

1. **Payments are due exactly 30 days from the date of the last function. Write a select query that calculates the date of the next payment. Pretend we want to update a column in a database that contains the date of the next payment. We will do this when we write UPDATE queries.**

SELECT DATEADD(day, 30, PaymentDate)

1. **Suppose your son or daughter wants to run a query every day that tells them the number of days until their 16th birthday. Write a select query that does this.**

DATEDIFF(day, customerbirthday, getdate());

1. **What function returns the current date? This is very useful in a table that maintains a log of events, such as user logins.**

Getdate()