# Assignment 7: Functions

Functions are used for transforming and manipulating the data within a database. They come in a wide variety and are very versatile, allowing the user to get a variety of answers from their data.

Scalar functions

Scalar functions only return a single value. They include the answer of calculations, and well as the answers to true-or-false queries. Scalar functions can be very useful in adding constraints or columns to tables where otherwise the needed data would not exist in the correct form.

Tabular functions

Tabular functions, in contrast, return a table as an answer to a query. This can be useful when trying to sort a table by a certain parameter. These UDF’s are a bit like views but include a variable that the table will be selected by. They come in two types: in-line and multi-statement.

* In-line: An In-line UDF returns one table per specified variable, no additional processing needed. An example is shown below. A screenshot of a computer program

  Description automatically generated

*Shows code for an In-line UDF. From:* [*https://www.wiseowl.co.uk/blog/s347/in-line.htm*](https://www.wiseowl.co.uk/blog/s347/in-line.htm)

* Multi-statement function: The biggest difference between these and the Inline functions is that these have multiple statements in the one UDF.

A screenshot of a computer code

Description automatically generated

*Example of a multi-statement function from:* [*https://www.wiseowl.co.uk/blog/s347/multi-statement.htm*](https://www.wiseowl.co.uk/blog/s347/multi-statement.htm)

Functions and Views

Views are considered easier to use than functions and so are preferred when making a table. To make a unique column, a user can use scalar UDF’s in their view creation so that the data they want is there.

Tabular functions are very useful when a user wants to make several different views without having to change one clause. A function will allow them to only have to code everything once.