

wawiwa

Tech Training

# Data Analysis SQL Home Booklet

**THE FAST TRACK TO TECH!**

# SQL Unit – Home practice booklet

## Lesson 13 – A Data Analyst's Workflow

### Subjects:

- SQL Working for the Analyst

1. Learn independently (search the web) how to create a new table from query results.

Hint: Select into

2. Write a query that creates a new table named panel\_EDA<sup>1</sup>, which contains the following data:

(Select the data from the tables that seem appropriate.)

- SalesOrderID,
- OrderDate,
- ShipToAddressID,
- ShipDate,
- CustomerID,
- OrderQty,
- ProductID,
- LineTotal

3. Write 5 business questions (only the questions, not the answers) that can be answered from the data in the panel\_EDA<sup>1</sup> table.

<sup>1</sup> EDA = Exploratory Data Analysis

# SQL Unit – Home practice booklet

## Lesson 14 – DML (Data Manipulation Language) and Import/Export to csv file

### Subjects:

- DML – Data Manipulation Language
- Import/Export to csv file

### Instructions:

After each section, be sure to check that what you did works, and that the data has changed!

You will work as an analyst. Checking your work is necessary and critical for your professional credibility.

1. Check that you have a database called Test\_DML. (It was created during the class practice.)

If not, copy and run the following line of code:

```
create database Test_DML
```

2. In the Test\_DML database, create a table with the same format as the Order header table, with all the data about the orders in 2011.

Name the table SalesOrderHeader2011.

3. In the Test\_DML database, create a table with the same format as the Order details table, with all the order records for 2011.

Name the table SalesOrderDetail2011.

4. Now begin to work on the new DB: Test\_DML
5. Change the date of all the orders from the month of May to the date 31-01-2011.
6. Check that section 5 worked properly.  
How can this be checked?

## Lesson 15 – DDL (Data Definition Language) and View

# SQL Unit – Home practice booklet

## Subjects:

- DDL – Data Definition Language
- View

## Instructions:

After each section, be sure to check that what you did works, and that the data has changed!

You will work as an analyst. Checking your work is necessary and critical for your professional credibility.

1. Check that you have a database called Test\_DML. (It was created during the class practice.)

If not, copy and run the following line of code:

```
Create database Test_DML
```

2. Now begin to work on the new DB: Test\_DML
3. Create a new table named "student" (with commands or with the UI) that contains 3 fields:
  - a. Student number (int) - primary key
  - b. First name - string 15
  - c. Last name - string 15
4. Add a nonclustered index to the student table.  
The index will be on the First name and then on the Last name.
5. Add another field called "Email", a string 255 type, to the new Student table.
6. Add two records to the student table: the first with your details, and the second with another student's details.
7. Change the second student's last name to a new last name.
8. Change the other student's email to his or her email address.

# SQL Unit – Home practice booklet

9. After reexamining the table structure, it was decided that there is no need for the Email column, so please remove the Email column from the Student table.
10. Go back to the AdventureWorks database we usually work with, and create a VIEW called vSaleItemDetails that contains the detailed order data, i.e., a combination of the data from Order details, Order header, Customer data and Product details, as follows:
  - a. Order details: Order number, Discounted item price (calculated), Total payment per order.
  - b. Order header: Order Date, Customer ID.
  - c. Persons table: First name, Last name.
  - d. Items table: Item name, Item color.
11. Such a VIEW can make which calculations, reports or statistics easier?
12. Prepare a list of 3 Views that you think will be useful in your regular work as an analyst. Describe in general terms what the purpose of the VIEW is, what it should contain and what can be deduced from it.

# SQL Unit – Home practice booklet

## Lesson 16 – User-Defined Scalar Functions

Subjects:

- User-Defined Scalar Functions

1. Define a function that takes as parameters a year and a customer number, and returns the quantity of sales for that customer in that year.

Call the function and check that it is working properly

2. Make a list of 4 functions that could be useful in the day-to-day work of a data analyst.

Describe what each function does.

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## Lesson 17 – Temporary tables & Stored procedures

### Subjects:

- User-Defined Scalar Functions

#### 1. \*\* Challenge Question \*\*

Create a procedure called spSubcategoryMinMax that executes a query based on the Products table, and displays the following data for each subcategory (ProductSubcategoryId):  
the ProductSubcategoryId, the ProductID with the lowest ListPrice in this subcategory, and the ProductID with the highest ListPrice in this sub-category.

Hint 1:

Subquery

Hint 2:

Related sub query + additional operations for retrieving data

#### 2. Call the procedure and check the correctness of the results by running the following code:

**Exec spSubcategoryMinMax**

A preview of the results of the procedure:

	ProductSubcategoryId	MinID	MaxID
1	1	989	772
2	2	977	750
3	3	958	954
4	4	808	810
5	5	994	996
6	6	948	948
7	7	952	952
8	8	949	951
9	9	945	894

## Lesson 18 – Stored Procedures & Triggers

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## Subjects:

- Stored Procedures
- Triggers

There is no home practice,  
Work on the unit summary project.