Lab 1

I. Introduction

In this lab you will have the opportunity to get familiar with and manipulate the main components of a Data Warehouse (**Data Mart**). The DW is implemented in Access, an easy-to-use tool for creating **business applications**. The case study used here is a **grocery store application** (sales data). By consulting the related tables created for this example, you will learn about the typical modelling of a DW (**star schema**) and the different way to explore its dimensions.

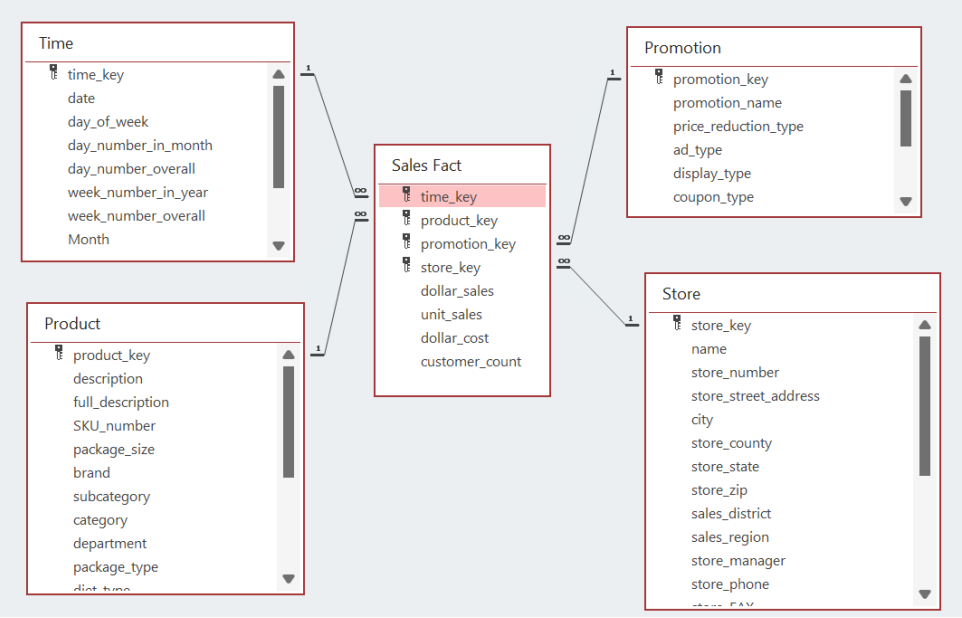
The objective of this tutorial is to understand the flexibility of the Cube modelling to summarize and consult a large quantity of data according to different business perspectives. To do so, you will have to select and display the relevant content of the DW in an Excel pivot table. You will realise that the pivot table is a very useful data processing tool to extract information from a large and detailed dataset in a quick and easy way.

II. Task

II.1. Tutorial

Complete the video tutorial available here: https://www.youtube.com/watch?v=eGhjklYyv6Y

The video is presenting a grocery DW (actually, it is a Data Mart), which is modelled through a **Star schema.**



Description of the figure above:

- **1 Fact Table:** 'Sales Fact' which stores measures (dollar_sales, unit_sales, dollar_cost, customer_count).
- **4 Dimensions:** When (Time table), What (Product table), Where (Store table), and Why (Promotion).

- Link between the tables: The **primary key** for all the four **dimensional tables** has been placed as **foreign key** in the **fact table.**

1) Explore the several tables and try to understand their content and how they are related to each other.

2) Connect an Excel file to the DW and create **Pivot table** as demonstrated on the video.

3) Understand how the several dimensions can be used and manipulated to analyse the business performance of the company according to different views (**roll-up, drill-down, slice and pivot**).

II.2. Exercises

Use the DW and the Pivot table to answer the questions as follows:

- How many products did the store No. 19 sale in 1994?
- Which type of promotion provides the highest amount of unit sales?
- Which are the top 10% best stores in terms of dollar sales in 1995?
- Which one of the stores has the highest amount of customers?
- Which product is the most lucrative?
- What was the most lucrative day, month, and year?

Draw conclusions about the pros and cons regarding the use of a DW to support decision making.