**Advanced Databases**

**Assignment 1: Mini-Project (15%)**

**Design and Implement a Data Mart**

**Due before Friday 27th October 2017 at 23:55**

Using an appropriate OLTP database students are requested to implement a Data Mart by identifying an important business process and associated business requirements, designing a dimensional model that will support the requirements, implementing it using MySQL and populating it with appropriate data. The students should also demonstrate how the data mart meets the business requirements by the use of querying. Some of the more demanding earlier tasks such as dimensional modelling may be done during normal class time.

In order to implement the Data Mart students are required to produce:

1. At least four important business requirements, based on the identification of one or more important business processes, for the Data Mart. The OLTP system must be able to support these requirements.
2. A dimensional model (using Star or Snowflake schema) for the Data Mart to support the business requirements. Dimensional model to clearly show the tables, column names, primary keys and foreign keys.
3. An SQL Script to create the Fact table(s) and the Dimension tables.
4. An SQL script to load data into the Data Mart from the Sakila database and/or evidence of the use of manual or automatic data loading into the Data Mart. As there may be quite a lot of data that needs to be loaded into some of the tables it will be sufficient to just present a subset of the data in the document.
5. At least four queries and their outputs to demonstrate that the requirements are satisfied. Important to state any assumptions that are made.

All this should go into **one** document and be submitted on or before **Friday, 27th October**. Every student is to submit a complete document. List of up to 4 team members to appear on each cover page.

Breakdown as marks as follows:

Requirements 20%

Dimensional Model 20%

DDL Script 20%

DML Script 20%

Queries 20%

OLTP Database

Students may create their own OLTP database to use for the project or find an existing one that is appropriate. If they wish they may also use the Sakila sample OLTP database that will be used in the labs. The Sakila sample database was initially developed by Mike Hillyer and is intended to provide a standard schema that can be used for examples in books, tutorials, articles, samples, and so forth.

An ER model for the database and a description of each table can be found at:

[**https://dev.mysql.com/doc/sakila/en/sakila-structure.html**](https://dev.mysql.com/doc/sakila/en/sakila-structure.html)

The database itself can be download from:

**https://dev.mysql.com/doc/index-other.html**