Relational Databases –

Project Specification **2017**

Introduction
You are required to design **and** develop a database in Oracle as part of your practical work. The database can be for any business, organization, or voluntary group. This document lays out what the deliverables are, what they should contain.

Project Deliverables
1) Project Design Document & SQL Implementation: Week 7: Sunday 29th October
2) Project Implementation : Week 11: Sunday 3rd December

1. Project Design Document (due Sunday 29th Oct)

This document serves as the design and plan for the database. It is at this stage that the database should be modelled using an Enhanced Entity Relationship diagram and associated documentation should be developed. This report should have the following structure. Each student should submit a **hard copy** and it should **also** be uploaded to Moodle.

- Title Page
  - This should contain the name of the report, student number and student name, date and module.

- Dynamic Table of Contents
  - This should include major sections and page numbers.

- Introduction to project
  - What project is about, what sections will be presented etc.

- Business Description
  - The business description should include a description of the business, along with its major functions. The benefits of implementing a database for the chosen business should be highlighted. Structural and Procedural rules identified for the business with an indication of those that were modeled and those that require programming.

- Enhanced Entity Relationship Model EER

  - The EER model should be sufficiently large as to expect six or more tables in the database. Where appropriate use a super/sub type relationship on the EER Model.

2. Project Implementation (due Sunday 3rd Dec)

This document serves as the report of your implementation of the database. It is at this stage that the normalised tables, table mapping, SQL statements and SQL queries

are created. This report should have the following structure. Each student should submit a **hard copy** and it should **also** be uploaded to Moodle.

- Updated ER diagram

- Normalised Tables (3NF sufficient).
    - Student should list the tables that will be created from the EER diagram above. Also check all tables are normalized to BCNF. No need to preform each stage just ensure all the rules are satisfied.

Sample Normalised Table
Student(Student Number, Student Name, Address, Mature)

- Table mapping
    - This is a detailed description of each table. It should incorporate the data shown in the sample below. This section should also identify the relevant integrity constraints and keys required for database table. Remember to include all the appropriate foreign keys and tables created by association entities. It would be advisable to indicate where the use of indexes would be appropriate. You should justify your choice of index. Remember to fill in all columns for all fields.

Sample Table mapping
Table name: Student

Field	Type	Size	Null/Not Null	Default	Constraints	Description
StdNo	char	8	Not Null		PK	Unique student number
Name	char	20	Not Null			Surname followed by first name
Address	char	100				College address
Mature	char	1		N	Y or N	States if student is greater than 24 years old in year 1.

SQL Implementation

- Any revisions to the project design should be reported in the final document. The student is expected to submit an SQL script as part of the Moodle submission. This script should contain all the necessary SQL commands to create, populate and query the database to be created. It should also contain all the necessary SQL commands required to create all constraints required by the database. SQL for useful queries suitable for the business. Marks will be allocated according to the complexity of the SQL provided in this script. All SQL

statements must be of your own authorship and written from scratch without the use of application express gui tools. It must be your own work which you can explain completely in the interview in class on week 12.

- List of frequently used queries (ranging in complexity). Please select useful queries. Think of how this business might use this database.

- Privileges – you should identify categories of users and the privileges associated with those categories e.g. read-only access on the student table for lecturers but update access on results table. All access to Admin staff on student table etc.