**Due: Friday 27th March at 5pm via Moodle Upload**

The aim of the project is to assess your ability to design and construct a database that can be deployed on “the cloud” using WAMP. You are required to design a relational database for the narrative below. The business rules must be developed and implemented via the database and queries as follows:

1. Relational Schema
   1. Tables, choose a Character Set and Collation that best reflects your test dataset.
      1. Relationships between tables could be 1:1, 1:M or Many to Man
   2. Attributes: Attribute Constraints
      1. Range e.g. Choose a datatype that best reflects the dataset
      2. Value e.g. use a SET or ENUM for data entry, where appropriate.
      3. Default e.g. use default value, where appropriate.
   3. Primary Keys
   4. Foreign Keys
2. Test Data must be loaded into the tables, MUST include BLOBs for patient images, patient xrays, etc
3. Queries
   1. CREATE, INSERT, SELECT, UPDATE, DELETE

**DELIVERABLEs**

Cloud environment configured with the following:

1. ReadMe.txt file to include CLOUD IP, Username & password for examiner to logon
2. Working MySQL database
3. Relational Schema (Diagram) – Could use Designer in PhpMyAdmin
4. Script to build and populate database with test data.
5. Scripts (PHP or Java) to remotely to query the database. 1-2 Scripts sufficient.
6. All script files to be saved to your CLOUD desktop and uploaded to Moodle.

**Marks will be awarded for**

1. Database Schema, Tables, Keys, Constraints, Encrypted data (25%)
2. Error free Queries (35%)
3. Local and remote PHP / Java scripts (30%)
4. Cloud Access (10%)

Marks are assigned under the following categories:

1. Functionality
2. Complexity
3. Originality
4. Completeness

**Narrative**

Dr Mary Mulcahy runs a dental practice. She treats most cases, although a few specialist cases are referred to larger practices. Patients ask Helen, the office secretary, for appointments, either on-line, by post, phoning or dropping in. She arranges a suitable appointment by referring to the appointments diary unless they owe **over** a certain amount, or for too long.

Every Monday morning, Helen checks the appointment diary and makes a list of all appointments this week. She sends a text reminder to all the patients 2 days prior to their appointment. She also prepares bills looking up the Treatment Fees guidelines book. The bills, itemising all unpaid treatments and late cancellations, are emailed to patients. Patients pay online, by cheque, credit card or cash, either by post or by dropping in. Occasionally, patients arrange to make several small payments for a large bill.

After each visit, Dr Mulcahy completes an appointment card with details of work done. Helen takes the card and arranges appointments with the patient for any required follow-up treatments written on the card.

If the patient needs specialist treatment, she writes the name of an appropriate specialist on the filled visit card and the secretary sends a patient referral to the specialist. After specialist treatment, the specialist posts a dental report to Dr Mulcahy, who reads it and files it in the patient's chart.

**Suggested Tables / Entities**

1. Appointment
2. Patient
3. Payment
4. Bill
5. Specialist
6. Treatment

**This project is worth 20% of the overall Module marks.**