****

**IT5x82**

**Fundamentals of Data Models and Databases**

**Level 5**

**Assignment One**

**Report and Data Models**

**Semester 2 2017**

**George Tongariro**

**Assignment One**

You are to create a report based on the scenario given which includes

* Designing the logical models which will include following:
  + UnNormalised Data to Normalised Data at 2NF (Second Normal Form)
  + ERD (Entity Relationship Diagram)
  + Business Process Model
  + Use Case Diagram
  + Functional Hierarchy Diagram
  + CRUD Matrix

**Aim**

To introduce students to the concepts of data models and databases

**Learning outcomes**

By the end of this Assignment you will create a report to the client on their database requirements using the following:

1. Design a logical model, that defines the data requirements of a simple system, that conforms to second normal form.
2. Create a functional hierarchy diagram that defines the functional requirements of a simple system and their logical groupings.

3. Develop a CRUD matrix that documents the database operations required to perform the steps defined in a process model.

**Scenario**

Tongariro Garage (2017) Ltd is a small independent garage who is wanting to upgrade it’s IT capability by storing some of its information in a SQL Database. At present, their details are stored in a book but this book is not efficient and is not very well ordered. So you will have to arrange a meeting with Client to get information as well as the information provided below:

1. The client would like to store details of their Clients, Vehicles, and Service
2. They would like to keep track of the Clients, Vehicles, and Servicing
3. Add/Update/Delete Records when appropriate
4. Add/Update/Delete Tables where appropriate
5. Do monthly Reports
   1. On all Clients, Vehicles and Servicing
   2. On specified Clients, Vehicles, and Servicing

**Other Details Business**

All staff can access the database, add and update details

Only the Admin Can Delete Tables

A customer will become a member of the Garage and fill out a form with their Customer details and Vehicle details.

If they become a regular customer they will get a 10% discount on work carried out.

A regular customer is one who uses the garage more than 3 times a year.

The form is processed by the Admin person onto the database. The mechanics can add details of servicing done on vehicles.

Any other queries will be discussed with Client Interview

**Marking Schedule**

|  |  |  |  |
| --- | --- | --- | --- |
| **Requirement** | **Criteria** | **Mark Out of** | **Your Mark** |
| **Client Report** | **To an Acceptable Formal Report Standard**  **Grammer and Spelling is correct**  **Layout**  **Diagrams are Clear and Readable**  **All Diagrams Have appropriate Titles and Your Details** | **20 Marks** |  |
| **Appropriate Tables** | **Actual Tables Required to complete Database** | **10 Marks** |  |
| **UnNormalised Data to Normalised Data at 2NF (Second Normal Form)** | **Must show 3 Stages of Normalisation**  **Appropriate Tables** | **10 Marks** |  |
| **Business Process Model** | **Identity of People and Tasks**  **Logical Sequence** | **10 Marks** |  |
| **ERD (Entity Relationship Diagram)** | **Use of Appropriate Diagram tools**  **Logical Sequence** | **10 Marks** |  |
| **Use Case Diagram** | **Use of Appropriate Diagram tools**  **Logical Sequence** | **10 Marks** |  |
| **Functional Hierarchy Diagram** | **Use of Appropriate Diagram tools Logical Sequence** | **10 Marks** |  |
| **CRUD Matrix** | **Use of Appropriate Diagram tools Logical Sequence** | **10 Marks** |  |
| **Appropriate Scenario Content** | **Within Report** | **10 Marks** |  |
| **Total** | | **100 Marks** |  |