

**FOUNDATION IN SCIENCE & TECHNOLOGY**

**COURSEWORK COVER SHEET**

**SUBJECT TITLE : BASIC COMPUTER CONCEPT**

**SUBJECT CODE : FSTM3054**

**INTAKE : JULY 2021**

**SEMESTER : 1**

**COURSEWORK TITLE : REVIEW 2 – DATABASE PROJECT**

**COURSEWORK** **:** **20%**

The objective of this assessment is:

* To design a relational database in Microsoft Access.
* To apply the use of SQL in relational database.

Instructions:

* Submit both hardcopy and softcopy of your assignment.
* Please include a cover page, table of contents and references in your assignment.

Student Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student ID : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# **ASSIGNMENT DURATION: 30/8/2021 – 20/9/2021**

# **INSTRUCTIONS:**

Form a group consisting of FOUR members. You are required to design and develop a database for a realistic scenario of your choice.

Submission: Word documentation and Microsoft Access File. Documentation should be formatted according the following heading / subheading. Use Times New Roman 12 with 1.5 spacing. List the contribution of each team member in the page after the cover page.

Word documentation is to be submitted on eLearn. Microsoft Access file must be e-mailed to [preedhar@sunway.edu.my](mailto:preedhar@sunway.edu.my).

# **TASK 1 – REQUIREMENTS REPORT**

## **1.1 Introduction**

Describe the proposed database management system highlighting the main functionality of creating the database. Explain the current situation in the organization without a proper database. Elaborate on the type of data the database is required to hold.

**1.2 Database Business Rules**

List the database business rules associated with the scenario and the entities involved. Describe all constraints.

You are required to use the information gathered from TASK 1 to model the design of the proposed database.

**TASK 2- DATA MODELLING**

**2.1 Entity Relationship Diagram**

* Design the entity relationship diagram using draw.io / Microsoft Visio software to model the relationship between the entities and attributes that the database will hold.
* Identify and describe a minimum of 4 related entities comprising database. A minimum of 3 of more attributes should be included for each entity.
* Clearly identify the relationship between the entities. Determine the primary key and foreign key that link the entities.
* Draw a complete ERD diagram stating the cardinality and optionality.
* Break down all the Many to Many relationships to One to Many relationships by introducing the Associative Entity.

**2.2 Data Dictionary**

Create a data dictionary for each entity with attributes name, data type, size and description.

Based on the completed Entity Relationship Diagram in Task 2, you are required to build the database containing all the tables using Microsoft Access.

**TASK 3 – CREATE A DATABASE**

## **3.1 Create and populate the Tables**

## Create table structure based on the data dictionary defined in Task 2.

* Add sample data into each table. The number of records for each table will be dependent on the chosen scenario.
* Include screenshot of each table with sample data.

**3.2 Establish the relationship**

Create the relationship between the tables. Include a screen shot of the relationship to show how each table is connected to each other.

**TASK 4 – CREATE SQL QUERIES**

**4.1 Create SQL queries**

Create **a total of 6** SQL queries categories such as:

* Comparison operator
* BETWEEN operator
* Logical operators
* Order by
* Compound conditions
* Group by
* Calculation
* Like operator
* In operator
* Having
* Date data type
* Null

The queries created should support the daily requirements of the users of the database.

Each query must be documented in the following format.

|  |
| --- |
| **QUERY PURPOSE:** |
| **SQL COMMANDS:** |
| **OUTPUT:** |