

Course Submission Cover Sheet**Module: CC6012 Data and Web Application****Deadline: 3PM, xx of March 2024****Module Leader: Dr Sandra Fernando Student ID:****PLAGIARISM**

You are reminded that there exist regulations concerning plagiarism. Extracts from these regulations are printed below. Please sign below to say that you have read and understand these extracts:

Extracts from University *Regulations on*

Cheating, Plagiarism and Collusion

Section 2.3: "The following broad types of offence can be identified and are provided as indicative examples.

- (i) **Cheating including taking unauthorised material into an examination; consulting unauthorised material outside the examination hall during the examination; obtaining an unseen examination paper in advance of the examination; copying from another examinee; using an unauthorised calculator during the examination or storing unauthorised material in the memory of a programmable calculator, which is taken into the examination; copying coursework.**
- (ii) **Falsifying data in experimental results.**
- (iii) Personation, where a substitute takes an examination or test on behalf of the candidate. Both candidate and substitute may be guilty of an offence under these Regulations.
- (iv) **Bribery or attempted bribery of a person thought to have some influence on the candidate's assessment.**
- (v) Collusion to present joint work as the work solely of one individual.
- (vi) Plagiarisms, where the work or ideas of another are presented as the candidate's own.
- (vii) Other conduct calculated to secure an advantage on assessment.
- (viii) Assisting in any of the above.

Some notes on what this means for students:

1. Copying another student's work is an offence, whether from a copy on paper or from a computer file, and in whatever form the intellectual property being copied takes, including text, mathematical notation and computer programs.

2. Taking extracts from published sources *without attribution* is an offence. To quote ideas, sometimes using extracts, is generally to be encouraged. Quoting ideas is achieved by stating an author's argument and attributing it, perhaps by quoting, immediately in the text, his or her name and year of publication, e.g. " $e = mc^2$ (Einstein 1905)". A *references* section at the end of your work should then list all such references in alphabetical order of authors' surnames. (There are variations on this referencing system, which your tutors may prefer you to use.) If you wish to quote a paragraph or so from published work, then indent the quotation on both left and right margins, using an italic font where practicable, and introduce the quotation with an attribution.

Introduction

The coursework assignment is an individual assessment weighted 40% of the marks for the module. It is designed mainly to assess students' practical problem-solving skills and critical thinking/evaluation on the design and development of database systems. It requires the student to analyse, design and implement a web-based database application based on a given business case study. You are asked to provide a software solution as well as appropriate documentation detailing the design and implementation of the system.

1 Case Study - Online Library Management System

Sydenham Library is a medium sized limited company, which provides educational resources e.g. books, CDs etc. to students in different subjects (computing, business etc). They have decided to develop an online library management system.

The Business Analyst has suggested the following minimum requirements for the online library management system:

1.1 System Requirements

Home Page

1. Home page (company information and sign in links for the admin)

Admin

- Can sign in
- Can add/delete books/CDs details
- Can edit/update books/CDs details
- Can issue a book and update returns
- Can view all book and CDs

Guest

- Can search a book(s)
- Can reserve a book(s)
- Can leave a message

You have been sub-contracted by Sydenham Library as a Junior Database Developer to design and implement a prototype of the web-based database system for the Sydenham Library. On completion of the system, you are required to provide a full set of documentation of the system to Sydenham Library

Your prototype of the system will be developed using Oracle *SQL Developer (or SQL Server)* and ASP.NET using C#.

2 Requirements of the Coursework

Marks are awarded for producing a working and properly documented system that meets the requirements as specified below:

2.1 Contents Page

A list of sections/subsections of the document, including page numbers.

2.2 Database generation

Specification of database relations – Using Oracle

- Relational ER diagram
- Data dictionary (attribute list and constraints for each table)
- Use *SQL Developer Data Modeler* to convert Entity Relationship Diagram into DB tables
-

Generation of Database – Using SQL Server/MongoDB

- Data Models of the CW tables and generated table structures.
- Input data into DB tables (INSERT)
- Display data in the tables (SELECT)

2.3 Implementation of the Web-based Database Application

Implementation of a web-based database application, which includes the following using MVC Technology: ASP.NET using C#:

Home Page

- Home page (company information and sign in links for secured users)

Admin

- Can sign in
- Can add/delete books/CDs details
- Can edit/update books/CDs details
- Can issue a book and update returns
- Can view all book and CDs

Guest

- Can search a book(s)
- Can reserve a book(s)
- Can leave a message

2.4 Documentation of the developed system

For each Requirement:

Implementation document

- Provide a set of screen dumps for all the functionalities you have produced.

Testing Document

- Provide a copy of the initial data (table contents) in your system.
- For each requirement, list the individual tests that have been carried out together with their results.

FOR THE APPLICATION

MVC application should be connected with SQL Server/Mongo database system

User Manual (up to 3 pages)

- The User Manual should have a contents page and separate sections for each form provided
- The User Manual should contain clear instructions on how to use the system and how to run each of the forms available to it.

2.5 Further Discussion

Your discussion should summarise your experience in undertaking this coursework.

Your work must be submitted in a single word document, with all output including diagrams, tables, classes, forms, SQL scripts clearly labelled and presented.

3 Marking Scheme

Marks will be awarded as follows

Specification of database relations – Using Oracle

- Relational ER diagram [15]
- Data dictionary (attribute list and constraints for each table) [5]
- Use *SQL Developer Data Modeler* to convert Entity Relationship Diagram into DB tables [5]

Generation of Database – Using SQL Server/MongoDB

- Data Models of the CW tables and generated table structures. [10]
- Input data into DB tables (INSERT) [5]
- Display data in the tables (SELECT) [5]

Implementation of Web-based Database Application

Home Page

- Home page (company information and sign in links for secured logins) [5]

Admin

- Can sign in [5]
- Can add/delete books/CDs details [5]
- Can edit/update books/CDs details [5]
- Can issue a book and update returns [5]
- Can view all book and CDs [5]

Guest

- Can search a book(s) [5]
- Can reserve a book(s) [5]
- Can leave a message [5]

Testing

- Testing [5]

Further discussion

- Discussion of own experience [5]

END