**Database Design SOFT7022 Project**

**Due Date:**

**Phase 1- Week 6 Database Design (20%)**

**Phase 2- Week 9 Database Design (30%)**

**Project Demo- Week 10**

Develop an application using Java that uses a DBMS (MySQL) to store data. You should download and install MySQL on your own device. It is also installed in most labs to which you have access. A quick link on how to download and install MySQL can be found here: <https://www.onlinetutorialspoint.com/mysql/install-mysql-on-windows-10-step-by-step.html>

You must investigate, organise and implement all technical aspects of the Application Design (called a tiered architecture e.g. client-server is minimum 2 tiers), Database Design involving ER Modelling and Normalization and building a Java interface to the Database Application.

**You have been hired by RyanAir to build a Java based application system for a Flight Booking System. It is up you the student to determine how this system will operate and to design a database that will support its operation.**

What you will need to consider at a minimum will include:

Airlines, Flights, Customers, Bookings Payment, etc. It is not necessary to have specific seat selection.

**Please note this is indicative and in no way limiting to what you may actually require to complete this project**

The project will run over a number of weeks, thus some marks will be assigned to project management. As manager/supervisor, I will require the following:

* Well managed time allocation to solve the problem i.e. you should devise and write a plan of action (A Project Plan). You could opt for weekly plan or a monthly plan. You need to devise an alternative if you opt not for this approach. It should be documented in your submitted report.
* List of references where you sourced code/explanations of concepts.
* Reporting of problems, and potential problems, in a timely manner.
* Verifiable work by you.

Minimum requirement is therefore, a plan (with stages/milestones) and an activity log. Each log entry must be dated.

**Phase 1 Hand-up/deliverable**

1. PDF documentation: well organised (e.g. index, page numbers, etc.) required. Ideally 1 file, but you may have multiple files.
   1. Your firstname, Surname, Student Number, Class (e.g. SDH2)
   2. Project description,
   3. Technical issues dealt with,
   4. Database Design (ER Model and Normalisation) & Creation of Database Scripts for creating tables.
   5. Outline application design
   6. Plan/log: neatness etc required,
   7. Conclusions/review
   8. References
2. Copy of the final code (maybe add as an appendix to the project Documentation)
   1. Code to include data Create Database on DBMS: SQL Create, insert, update.
3. Sign off of own work (see sample below)
4. You will also be required to submit a zipped copy of codebase with instructions on Canvas.
5. A demo of the working code in week 10 within your lab slot. You will need to share your screen with me over Zoom or by some other means at that time. You will be given a 5-7 minute slot to demo you work.

**Phase 2 Hand-up/deliverable**

**Please note you can make changes to your first submission in your second submission based on further discovery, errors or changes to your overall designs.**

1. PDF documentation: well organised (e.g. index, page numbers, etc.) required. Ideally 1 file, but you may have multiple files.
   1. Your firstname, Surname, Student Number, Class (e.g. SDH2)
   2. Project description,
   3. Technical issues dealt with,
   4. Database Design - All SQL Code for Implementation and any changes.
   5. Application implementation Using Java & MySQL. You Will need Connector/J to enable connectivity between Java and MySQL.
   6. Plan/log: neatness etc required,
   7. Conclusions/review
   8. References
2. Copy of the final code (maybe add as an appendix to the project Documentation)
   1. Code to include data I/O to DBMS: SQL Create. insert, update, select and Java code Project.
3. Sign off of own work (see sample below)
4. A demo of the working code in week 10 within your lab slot. You will need to share your screen with me over Zoom or by some other means at that time. You will be given a 5-7 minute slot to demo you work.

**Marking**:

The project is not just the programming application implementation. It also involves the project management and any technical issues surrounding an application that uses a general purpose procedural programming language in a system configuration that uses a DBMS to store the data (referred to as a ‘backend’ database).

In overall module terms, this project is worth 50%.

This will be broken down as follows:

50% implementation as follows:

* 30 Database Aspect
* 20% Front end (Java)

30% for Documentation

20% project management & technical understanding of issues.

**Guidelines:**

Build your log as a stack in a single journal/Google Doc.

Add new entries at the top. NB Date every entry

e.g.

Nov. 4th: didn't complete import in the estimated time due to problems with another subject, got sick, managed 60% but will need to redo the plan etc..... Tech issue with my PC relating to database install, found a solution at abc.com etc

Nov. 2: plan to work 4 hours on the import function of the app this week etc.

Sample Student statement

I hereby certify that this material which I now submit for assessment, is entirely my own work and has not been taken from the work of others, save and to the extent, that such work has been cited and acknowledged within the text of my work

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Signed

Project mgmt. & scheduling help: [**https://www.mindtools.com/**](https://www.mindtools.com/)

<http://www.oracle.com/technetwork/java/javase/jdbc/index.html>

<https://dev.mysql.com/doc/connector-j/5.1/en/connector-j-overview.html>

http://www.mysqltutorial.org/mysql-jdbc-tutorial/

<http://www.mysqltutorial.org/calling-mysql-stored-procedures-from-jdbc/>