



DI31003 Assignment 1 – Database Design

Deadline for Submission: Sunday of Week 9 (2nd, Nov, 2025) at 23:59 pm.

Hand in Method: MyDundee - You should upload a **single PDF document** containing all the components of your design. Failure to upload as a single file will reduce your overall mark.

Date Feedback will be Received by: This will be received within the University's 3-week policy which for this assignment.

Penalty for Late Submission: One grade point per day late (meaning if a submission is one day late and marked as a C2 it will receive a C3 grade). A day is defined as each 24 hour period following the submission deadline including weekends and holidays. Assignments submitted more than 5 days after the agreed deadline will receive a zero mark (AB).

Percentage of Module: This assignment is worth 20% of this module.

Overview of Assignment

Brief

The aim of the coursework in this module is to give you experience in the preparation and implementation of a database. In this first assignment, you are to explore the **conceptual and logical design** of the relational database and associated application interfaces which would be useful to the database users (the next coursework will involve using your design to **create the physical database** with a suitable **front-end interface**).

Both assignments will be conducted in teams of (typically) **five-six** students; **you will remain in the same team for both assignments**. Equal effort is expected from each member of the team, and a **peer review form** must be completed by each member of the team to confirm that this happens; students whom the team thinks have under-performed **will gain fewer marks**. Each team member is expected each to spend approximately **eight hours** working on this first assignment, which is worth **20%** of your total grade for this module.

Your **overall** task is to design a **MySQL relational database** with an attractive **front end** accessible by several categories of main users (e.g. managers, shop-floor staff, suppliers, existing customers, new customers who are just browsing) who may have different access/security requirements.

This assignment is the **design phase** of this process; your **next** assignment will be the **implementation phase**, where you create the system that you have designed here.



Background

Consider a business which currently has a number of physical branches and markets a range of **specialist products** (e.g. cycling accessories, adventure holidays) to customers throughout the **general population** (*not* special populations, such as children or elderly people). The business has a number of existing suppliers and customers but, up to now, has stored all records on paper - see the *example specification* at the end of this document.

Consider the structure, operation and policies of the company to a good level of detail, making **reasonable assumptions** where appropriate - you will need to match your database design to the structure and functioning of the company. Give your company a **descriptive name** and an inspirational slogan.

The **design process** should produce an **E-R diagram** (computer-created or neatly hand-drawn), corresponding **SQL CREATE statements** for (only) the **creation** of the database tables (but *no more at this stage*), and **prototypes** for the **user interfaces** that will be seen by the different users of your site (e.g. staff page, customer page, personnel page etc.) – note that, due to constraints on the database, **you can only have up to four different types of user** (although you can have *multiple* users of each type). It should be accompanied by a **report** which describes the structure and operation of your company in reasonable detail - you will need to **match** your database design to the structure and needs of the company, and show how this has informed the decisions made in arriving at your designs. **Fitness for purpose** will be a key consideration in evaluating your designs. The report should be written **for a consultant** knowledgeable in database design who can critique your design, rather than for a customer or anyone else; the bulk of your report should *describe the business* rather than the E-R model of the business.

As a *rough* guideline as to complexity, your data model should contain **around ten** normalised entities (*not* including any joining tables which may be needed) with appropriate attributes including their data types (**later**, as part of the next assignment, each table should be populated with **around 30-100** records for reasonable testing purposes).

Deliverables

Your team should submit a **single PDF document** comprising:

- the special **coversheet** for this assignment (upon which your team number, names of team members and the numbers of pages in total should be clearly shown)
- a specification **report** describing the relevant structure and workings of the company and how this has informed your design (900-1000 words)



- an **E-R Diagram** showing the full logical model of your database (computer-created or neatly hand-drawn - but *big enough to be legible ... double check that your PDF remains legible*)
- the design of *four* key **user interface screens**, one for each user **type** (computer-created or neatly hand-drawn) showing the typical data that they would expect to see and the functions they would want to carry out (via buttons or a menu)
- the **SQL statements** that you will use to **create** the tables in your database; these should include attributes and appropriate keys

You may also like to start **populating your tables with sample data** ahead of the next assignment, although this does not form part of *this* assignment.

Submission & Assessment

All of these elements should be included in a **single PDF document** submitted via MyDundee. You will also be required to complete a **peer review** (via the online peer review system) to ensure equitable distribution of marks. **One submission per team** is sufficient.

Submission deadline is Sunday of Week 9 (2nd, Nov, 2025) at 23:59 pm.

Constraints:

Your submission should be a **single PDF document**. UIs and ER diagrams (if hand-drawn) can be scanned as PDFs (Adobe DC can join separate PDF documents into one if required). **Check** that your page sizes are all similar, not a mixture of large and small pages.

Your SQL code needs only to include the **CREATE** statements for your tables – *do not include any more SQL at this stage*.

Marking Scheme

Marks will be allocated as follows:

- Specification report - **35%**
- E-R diagram - **40%**
- User interface designs - **20%**
- CREATE statements - **5%**

- A** Excellent report with an excellent description of the company and its relevant business organisation and how this has contributed to the design. Highly relevant E-R diagram. Excellent level of complexity in the data model. Complete set of Excellent user interface designs. Excellent and comprehensive SQL statements. No omissions from the brief.



- B** Good report with a good description of the company and its relevant business organisation and how this has contributed to the design. Relevant E-R diagram. Good level of complexity in the data model. Complete set of Good user interface designs. Good and comprehensive SQL statements. No omissions from the brief.
- C** Adequate report with an adequate description of the company and its relevant business organisation and how this has contributed to the design. Adequate E-R diagram. Adequate level of complexity in the data model. Adequate set of user interface designs. Adequate SQL statements. There may be minor omissions from the brief.
- D** Minimal report with a poor description of the company and its relevant business organisation and how this has contributed to the design. Poor E-R diagram. Poor level of complexity in the data model. Poor or incomplete set of user interface designs. Poor SQL statements. There may be minor omissions from the brief.
- Fail** Very poor or missing report. Very poor or missing E-R diagram. Very simple data model. Very poor or missing user interface designs. Poor or missing SQL statements. There may be major omissions from the brief.



Example Company Specification

The following is an example intended to illustrate the sort of company specification that you should be producing, from which you will derive your E-R diagram. ***It is not a template, nor is it the specification that you should use, it is given as an illustrative example only.***

Droning On *Going Up in the World*



Droning On is an SME which manufactures drones (small, helicopter-like aircraft) which are manually flown by a human pilot. The company has a central manufacturing facility which receives parts and raw materials purchased from a number of different suppliers. The finished drones, of which six different models are currently available, are sold through a chain of specialist shops - currently twelve across the UK, though the company is looking to expand into Europe. Each branch has a staff of around four employees, and the manufacturing plant employs around twenty specialist fabricators and testers. The company head office and staff of six are co-located with the manufacturing facility.

Company CEO, Emma "Kelso" Brown, started the business - initially small, all records were kept on paper, but as the business has grown, this has become increasingly difficult to manage. She wishes to bring the company records system up-to-date by recording all business-related data in a database. This will be used by her to oversee the whole business, by office staff to manage payroll and invoices, and by branch staff to manage sales and stock; all of these functions should be available through one interface. It would also be highly desirable to offer a customer-facing app or website to publicise products and make sales online.