# IN1013 SQL Coursework

The purpose of this coursework is for you to demonstrate your knowledge and expertise of SQL Data Definition Language (DDL) & Data Manipulation language (DML).

The brief is to implement a MySQL database based on the design model you developed for the database design coursework, populate it with data, update and delete some data, and to specify queries to retrieve data.

The implemented MySQL database **does not** have to be the same as your design coursework model. Of course, you need to update your design considering feedback you have received or to meet the requirements of this coursework. You should simplify the database (reduce the number of tables) to avoid unnecessary work in creating data insert statements.

Specification

Your database must have **at least FOUR** tables, and **no more than** **SIX** tables!

You must provide the DDL statements to CREATE these tables.

Provide INSERT statements for each of the tables (10-20 rows for each table). Provide **two** UPDATE and **two** DELETE statements for your database. DELETE statements should appear at the end of the file.

Provide a set of specific queries and corresponding SELECT statements that satisfy the queries for your database; in total there should be **eight** table statements.

Provide DROP statements to delete all the tables from the database.

All the queries should be provided with the explanation in natural English language.

Marks will be awarded as follows:

CREATE & INSERT (up to 10 marks)

* All tables have appropriate primary and foreign keys, and appropriate data types for each attribute.
* **If there are more than 6 tables, THE MARK WILL BE ZERO.**
* If there are less than 4 tables, marks will be reduced.

UPDATE & DELETE (up to 8 marks)

* The update and delete statements demonstrate appropriate use of constraints to alter specific rows.

SELECT (up to 72 marks) – ALL your statements must execute without error on your database.

* 54-72 marks. All the queries are meaningful – they are expressed in natural language. The SQL statements include **All** of the following operators and functions: value comparisons (mathematical equality operators), pattern matching (LIKE “A%\_”, null checks (is null), aggregates (min max functions), 3+ table joins (inner join etc.), union (select… union select…), sub-queries(select … where name in (select…)), existence (where exists (subquery here)), group (group by name), having (idk), and order clauses. **None** of the SQL statements output empty result and at least **six** queries are multi-table. The mark will also depend on the number of multi-table queries and their complexity.
* 45-54 marks. Most of the queries are meaningful – they are expressed in natural language. The SQL statements include **eight** of the following operators and functions: value comparisons, pattern matching, null checks, aggregates, 3+ table joins, union, sub-queries, existence, group, having, and order clauses. No more than **two** of the SQL statements may output empty result and at least **four** queries are multi-table. The mark will also depend on the number of multi-table queries and their complexity.
* 37-45 marks. The SQL statements include **six** of the following operators and functions: value comparisons, pattern matching, null checks, aggregates, 3+ table joins, union, sub-queries, existence, group, having, and order clauses. No more than **three** of the SQL statements may output empty result and at least **two** queries are multi-table. The mark will also depend on the number of multi-table queries and their complexity.
* 29-37 marks. The SQL statements include **four** of the following: value comparisons, pattern matching, null checks, aggregates, 3+ table joins, union, sub-queries, existence, group, having, and order clauses. No more than **three** of the SQL statements may output empty result. The mark will also depend on the number of multi-table queries and their complexity.
* <29 marks. The SQL statements include **less than four** of the following: value comparisons, pattern matching, null checks, aggregates, 3+ table joins, union, sub-queries, existence, group, having, and order clauses.

**The final 10 marks will be awarded if everything above is done perfectly (in 54-72 band) and at least one of UPDATE and at least one of DELETE statements contain sub-queries.**

Submission Requirements – **Read this CAREFULLY**

* You must use the template provided on Moodle and put your SQL code in the sections.
* Your submitted file must be in text format with the file suffix **.sql.**
* Your coursework will be marked by copying the code from your file to <https://onecompiler.com/mysql/>. **Submissions which have errors and do not execute will get a mark of zero!** It is *your responsibility* to make sure the following:
  + All your SQL statements execute without error. If you cannot get a statement to execute correctly, do not put it in your submission!
  + **All DELETE and DROP statements (sections 6 & 7) are located at the end of the file.**
  + Any non-SQL text is commented out between /\* and \*/ characters.
* Check your submission by running on that website. If the website is down, you can always run on any installed MySQL versions or any accessible PhpMyAdmin. In that case, be sure to remove all the drop database and use database statements from the beginning of the file.
* Check, check, check you have done this correctly before you submit.

Submission is via Moodle.

# Deadline: 12th January 2024 at 5pm.