

CSCI 2141  
Winter 2013  
Project document v2

**Major change:** No web interface – the TA will access your database directly.

Due: April 8, 2013, 11:30pm

Submission details: Send the final report, your name, banner#, and your database name (your CS ID) to the TA via email ([sarora@cs.dal.ca](mailto:sarora@cs.dal.ca)) by 11:30 pm on Monday, April 8<sup>th</sup>.

In this project, you will take a problem domain of interest to you (please avoid the standard examples used throughout the slides and texts) and go through the process of developing a database to support tasks in your problem domain.

During this process you will:

1. Describe the problem domain, including the important aspects of the real world scenario that you will be modeling and any constraints on the information.
2. Describe 4-5 task scenarios that your database should support.
3. Construct the conceptual model of the domain with an ER-diagram. Make sure to indicate the cardinality/modality of the relationships, the unique identifiers, and all of the important attributes. There should be at least 5 entities in your model.
4. Convert your design into the relational model. Create the schema for the database tables, including specifying the table name, primary key(s), foreign keys, and all attributes. Include either some notation of the attribute domains within your schema or provide this information in a subsequent paragraph. Provide 3-4 sample rows for each table showing what the data will look like.
5. Provide a discussion/analysis of the normalization of your database. Justify your table structure and any decisions that you made about its structure according to how it will support your particular task scenarios. If you have adjusted your table design as a result of the normalization analysis, show the initial design and the changes you made.
6. Implement your database in MySQL in your account on the cs faculty's server (<https://www.cs.dal.ca/services/support/faq/connecting-mysql>). *Note: Chris Maxwell's tutorial notes are on the course web page.* Create your tables and populate them with data. Your tables should be a reasonable size (~20 rows).
7. Provide some samples of MySQL queries that would be useful for your task scenarios. The TA will also submit other queries of his own choosing. The TA will need to be granted permissions to access your database – we are trying to do this globally, but may need to have you grant the access (if we do, I will send an email with the appropriate command)
8. The final submission will include:
  - a. A report that includes the various components described above.
  - b. If you have implemented any features that you think are above and beyond the basic requirements, please include a detailed list so that the TA does not miss any bonus opportunities.
  - c. Your user name, so that the TA can access your database.

Note: All the components have now been covered in class. Feel free to add items that you think are important to showcase your project – doing a decent job of fulfilling the basic requirements as noted above will earn a mark of 80%. The other 20% is reserved for those who want to add some more bells and whistles (Constraints? Triggers? Complex queries? Advanced use of tools?) or go beyond the most basic interpretation of the requirements.

If you want feedback about any of the components, make an appointment to see the TA or come see me during office hours.