COMP/IT 420 Term Project

## Project Overview

Your Database Systems Term Project will give you the opportunity to work collaboratively on the design, construction and presentation a fully-functional relational database system. You and your classmate will apply skills learned in COMP/IT 420 to select a problem domain, construct an entity relationship diagram using Crow’s Foot notation and implement the database in MySQL. While the project is divided into five parts, you will likely need to work on multiple milestones concurrently in order to meet the due dates. You will present your final database to you classmates at the end of the semester.

## Part I. Project Initiation (5%)

**Objective: DB Team Formation**

Due Date: Week 3

Requirements: Upload the members of your two-person team to Canvas.

## Part II. Database Proposal (10%)

**Objective: Database Proposal**

Due Date: Week 6

Requirements: Upload a one-page summary of your planned database proposal to the project Dropbox. By this point, you should be thinking about the domain you wish to cover (sports, entertainment, fashion, finance, healthcare, etc.) and begin identifying primary entities and business rules that will govern your database. You do not need to have the complete design mapped out, but you should be working towards finalizing a listing of entities you wish to track. Keep in mind that your final DB design and implementation will consist of 12 or more entities. To ensure you are off to a good start, I expect the following for Part II:

1. DB Domain
2. Business problem or business need for a relational DB
3. Primary entities (>8)
4. Attributes (>2) for each entity
5. Business rules (>8) that define data and/or relationships
6. Sample reporting (>8) users would run against your database

It is important to note that your milestone is not an ERD (save that for Part III). Rather, focus on simply identifying the data your database will store and some guidelines for that data.

## Part III. Database Design (25%)

**Objective: Complete the ERD**

Due Date: Week 11

Milestone: Construct a Crow’s Foot ERD to represent the design for your planned database and submit it to the Dropbox. Your ERD represents the blueprint for construction, so a well-designed ERD will get you moving in the right direction. Your ERD will consist of:

1. Entities (75% of all entities to be included in your final DB)
2. Attributes (all primary attributes needed to showcase entity and relational integrity)
3. Primary Keys
4. Foreign Keys
5. Connectivity (proper Crows Foot notation)
6. Cardinality

## Part IV. Implementation (50%)

**Objective: Exported DDL and DML; Query summaries**

Due Date: Week 16

Milestone: For Part IV, you will submit your entire database to the Dropbox and include:

1. DDL (25pts) – represents the entire DB schema, including table structures, primary and foreign key constraints, datatypes, data constraints, table indexes and relationships. Your DB should consist of at least 12 entities of suitable complexity (3-10 attributes).
2. DML (25pts) – Represents views (5), queries as stored procedures (12) and triggers (3) to facilitate information retrieval across your system. Think about the DML in terms of business needs and data administration. In essence, queries are algorithms for information retrieval and should therefore be of a certain complexity to justify their existence. Therefore, a large percentage of your grade will consider such complexity and will be based on your understanding of table joins and query manipulation. Consequently, you are expected to create at least 20 database objects (views, stored procedures and triggers) of varying levels of complexity and provide a rationale for each query.

## Part V. Presentation and Write-up (10%)

**Objective: PowerPoint Presentation**

Due Date: Week 15

Milestone: A PowerPoint presentation (5pts), which highlights Part I, II, III, IV and VI (if applicable), which you will present to the class (5pts).

## Part VI. System Prototype (Extra Credit)

**Objective: GUI**

Due Date: Week 16

Milestone: Build a GUI interface that allows users to interact with Part IV.