# Project 1: Database System Applications (Spring 2019)

Instructor: Zhaonian Zou (znzou@hit.edu.cn)

Student Name: _____ Student ID: _____ Grade: _____

## 1 Introduction

relation DBMS

In this project, you are required to design a database and implement a database system based on a RDBMS. You are required to complete the following tasks.

**Part 1 (Database Design):**

1. Give a detailed description of the requirements of a database-oriented application. You may choose any application scenario as you like. Reasonable and interesting application scenarios are preferable.
2. Create a *conceptual model* for the database by using the *entity-relationship (ER) model* and illustrate the model as an *ER diagram*. Please specify the details of the diagram as much as possible, e.g., the types of attributes, constraints on relationship types, roles, etc.
3. Translate the ER model you created into the *relational model* and discuss whether the yielded relational database schema is good enough.
4. Use a DBMS (MySQL is recommended) and create the database in the DBMS by using SQL. Please specify suitable data types and constraints according to the requirements.
5. Write a report on your database design.

**Part 2 (Application Design and Implementation):**

1. Develop an application using any programming language as you like to implement all the requirements you described earlier. Friendly user interface is preferable.
2. Test all the functions of the application described in the requirements.
3. Write a report on your design and implementation details.

## 2 Handing In

**Part 1 (Database Design):**

1. You are required to submit a report on your database design. The report must describe the details of your solution to every task in this part.
2. The LaTeX and MS Word templates for the report will be released in our course QQ group.
3. The submission deadline is April 3, 2019.

**Part 2 (Application Design and Implementation):**

1. You are required to extend your report on database design and write a complete report for your project.
2. You are required to submit all the necessary electrical material in a single zipped folder (use GZip or WinZip). Your folder should be named "<StudentID>_<StudentName>_Proj1" and include only the report, the source code files (no binaries), database dumps, and configuration files.
3. The submission deadline is April 20, 2019 for classes 1603101, 1603102, and 1603103 and April 21, 2019 for classes 1637101 and 1637102.
4. You are also required to demonstrate your application in the laboratory in Week 8.