# CPSC 304: Tutorial #1
Getting familiar with databases

<u>Submission Instructions</u>

The tutorials must be done in a team of <u>two</u>. Each team member must enroll in the group. For enrolling, follow the steps below:

1. Log in to the course in Canvas.
2. Click on People and look for the available Groups. The group name for this tutorial starts with *Tutorial_group 1* where 1 means the group number that you'll be using. Both members of the group **must** join the same group number.
3. For submission, click on the Home tab on the LHS, and submit your file(s) in the appropriate tutorial section.
4. One submission per group is required. When you submit a file then you should be able to see the below message:
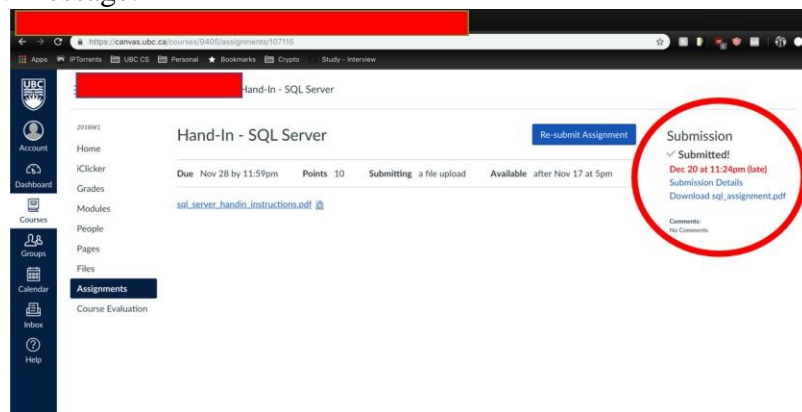
Only one group member should submit the assignment. Group members: verify with your group that the submission has actually taken place and that it's on time.

5. **Late submission policy:** 25% penalty per day late. We will only accept submissions for up to **two days** late; otherwise, it's a real hassle to coordinate marking.

The University Accommodation Office Case Study

The Director of the University Accommodation Office requires you to design a database to assist with the administration of the office. The requirements collection and analysis phase of the database design process has provided the following data requirements specification for the University Accommodation Office database followed by examples of query transactions that should be supported by the database.

1. The data stored on each full-time student includes: the matriculation number, name (first and last name), home address (street, city, postcode), date of birth, sex, category of student (for example, first-year undergraduate, postgraduate), nationality, smoker (yes or no), special needs, any additional comments, current status (placed/waiting), and what course the student is studying on. The student information stored relates to those currently renting a room and those on the waiting list. Students may rent a room in a hall of residence or student flat. When a student joins the University, he or she is assigned to a member of staff who acts as his or her Advisor of Studies. The Advisor of Studies is responsible for monitoring the student's welfare and academic progression throughout his or her time at University. The data held on a student's Advisor includes full name, position, the name of the department, internal telephone number, and room number.

2. Each hall of residence has a name, address, telephone number, and a hall manager who supervises the operation of the hall. The halls provide only single rooms, which have a room number, place number, and monthly rent rate. The place number uniquely identifies each room in all halls controlled by the Accommodation Office and is used when renting a room to a student.

3. The Accommodation Office also offers student flats. These flats are fully furnished and provide single- room accommodation for groups of three, four, or five students. The information held on student flats includes a flat number, address, and the number of single bedrooms available in each flat. The flat number uniquely identifies each flat. Each bedroom in a flat has a monthly rent rate, room number, and a place number. The place number uniquely identifies each room available in all student flats and is used when renting a room to a student.

4. A student may rent a room in a hall or student flat for various periods of time. New lease agreements are negotiated at the start of each academic year with a minimum rental period of one semester and a maximum rental period of one year, which includes Semesters 1, 2, and the Summer Semester. Each lease agreement between a student and the Accommodation Office is uniquely identified using a lease number. The data stored on each lease includes the lease number, duration of the lease (given as semesters), name and matriculation number of the student, place number, room number, address details of the hall or student flat, and the date the student wishes to enter the room and the date the student wishes to leave the room (if known).

5. At the start of each semester, each student is sent an invoice for the following rental period. Each invoice has a unique invoice number. The data stored on each invoice includes the invoice number, lease number, semester, payment due, student's full name

and matriculation number, place number, room number, and the address of the hall or flat. Additional data is also held on the payment of the invoice and includes the date the invoice was paid, the method of payment (cheque, cash, Visa, etc.), the date the first and second reminder is sent (if necessary).

6. Student flats are inspected by staff on a regular basis to ensure that the accommodation is well maintained. The information recorded for each inspection is the name of the member of staff who carried out the inspection, the date of inspection, an indication of whether the property was found to be in a satisfactory condition (yes or no), and any additional comments.

7. Some information is also held on members of staff of the Accommodation Office and includes the staff number, name (first and last name), home address (street, city, postcode), date of birth, sex, position (for example, Hall Manager, Administrative Assistant, Cleaner) and location (for example, Accommodation Office or Hall).

8. The Accommodation Office also stores a limited amount of information on the courses run by the University including the course number, course title (including year), course leader, internal telephone number, room number, and department name. Each student is associated with a single course.

9. Whenever possible, information on a student's next-of-kin is stored which includes the name, relationship, address (street, city, postcode), and contact telephone number.

Answer the following questions:

a) List the **entities** (only) and their attributes that you think should be stored in the database. For example, if you decide an entity named, Student, then the attributes of the student will be a name, matriculation number, etc.
Note: You are not considering relationships now, so make sure that you shouldn't duplicate attributes or add attributes that are used to define relationships in the entities.

b) List at least <u>four</u> reasons why **different** users will be using this database.

Submission: Please submit a **pdf** file only.