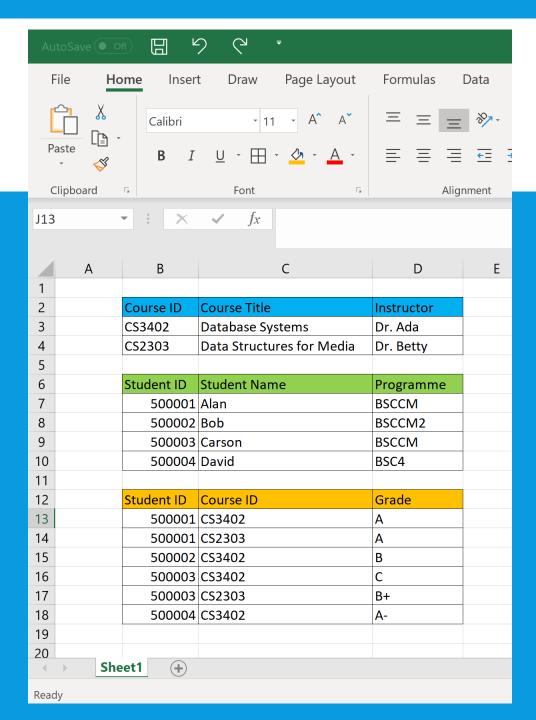# Tutorial 1: Entity-Relationship (ER) Model

CS3402 Database Systems

Question 1

➢ An instructor Peter does not know relational database management systems. He uses an Excel file to store university data. Here are some sample data stored in the Excel file.

a) Identify entity, entity set, attribute, relationship, relationship set in this application.

b) Is there any integrity constraint in this application? If so, is it easy to make sure the constraint(s) is not violated in Excel?

Question 2

➢ Construct an ER diagram for a car insurance company. Identify the key entities, relationships and their attributes in the ER diagram.

- A customer owns at least one car.
- A car may be owned by more than one customer.
- An accident involves at least one car.
- A car may have a number of recorded accidents associated with it.

Question 3

➢ Construct an ER diagram for a hospital. Identify the key entities, relationships and their attributes in the ER diagram.

- The hospital has a set of patients and a set of medical doctors.

- A patient may be treated by more than one doctor.

- A doctor may have a number of patients.

- A log of the various conducted tests and results is associated with each patient.