Lecture 2 (contd)- ER Diagrams

A student is identified using a StudentID. Names, addresses and phone numbers of students are also stored. **Students can be full-time or part-time**. A student can enrol in multiple units. Draw an ER diagram.

Customers are identified with an identifier. Their name and address are stored. They can place orders. Orders are identified with an identifier. The date of the order gets recorded. Find the relationship between the two entities. Do you think we could have a mandatory constraint on both sides of the relationship? Why/ why not?

Repeat the same for Season and Episode

Lecture 3

Recap

1. Staff at Hogwarts are allocated a parking spot. Parking spots are uniquely identified. Staff are rostered to teach multiple units. Each unit is assigned a unit code. A unit could be taught by multiple staff. Students enrol in units. Every student has a wand. Staff have multiple wands. Students and staff each have their own ID number. Wands are identified by their core. No wand is like another. Albus Dumbledore requests a report on staff details at the end of every week. Draw an ER diagram for this question
2. In the popular game Among Us, you begin the game as part of a crew on a space ship. All crew members are uniquely identified. However, 2 of the crew members will be alien imposters. They will hunt and eat the other members. Crew members are identified with a unique crew number. Their name, dob and the colour of their space suit are stored. How do we represent this relationship?

Associative entities

1. What is an associative entity? When do we use them?
2. At a hospital, staff are rostered for an operation. Every operation would include a surgeon, a duty doctor and multiple nurses. Nurses will have their role recorded when they are rostered. Staff are uniquely identified. Operations are also uniquely identified. Draw an ER diagram for this scenario.

1. Patients are identified using a PatientID. Specialists are identified using a SpecialistID. Operations at the hospital are identified using an OperationID. Admin staff are identified using an AdminID. Patients undergo treatments with specialists. Date and time of consultation must be recorded by an admin staff member. After the consultation, patients make a single payment to pay for their treatment. Payments are identified with an ID. Draw an ER diagram to record these details.

Case study

Properties are rented by tenants. Each tenant is assigned a unique number by the agency. For each tenant, the agency records: family name, first name, contact address, phone number and property rented. A tenant may rent more than one property at any given time. History of tenancy must be recorded. In addition, the lease period and bond, are recorded for each property rented.

Properties are owned by owners. Each property is assigned a unique property number. The agency requires a single owner per property, for all properties it handles. The owner, address and value are recorded for each property. History of ownership of a property is not within the scope of the agency. An owner may own several properties.

Regular property maintenance is also recorded. The property, date, type of maintenance and cost are stored. Maintenance costs are charged to the property owner.

Important Takeaway points: