

# HW1.4

## (Group Assignment)

ERDs + Relation schemas,  
given business rules.

# Class demonstration:

## Drawing ERD given business rules

- Using Chen's notation, draw an ERD according to the business rules below. Translate the ERD to a logical level showing the relation schemas – include primary and foreign key fields.
  - **Sheep farm feed supplier business rules:**
    1. All entities must have surrogate primary keys.
    2. A contact person represents one or more suppliers, and each supplier has exactly one contact person.
    3. A supplier supplies many feed products, and every feed product can be supplied by many suppliers.
    4. Each feed product belongs to a specific feed type, and many feed products can have the same feed type.

# HW1.4:

## Drawing ERD given Launch Pad business rules

- **Launch Pad business rules:**

1. A launchpad hosts multiple launches over time, and each launch is hosted by exactly one launchpad. Therefore, Launchpads will be created in the database even before the first launch is hosted there.
2. A launchpad is located in a country, and a country, in turn, is located on a continent.
3. Each launchpad has a name and a location.
4. A launch requires a launchpad that hosts it, a launch vehicle (the rocket), and the payload.
5. For a launch, the date, time and name should be recorded as well as whether it is a crewed launch or not.
6. Each launch is performed by a launch vehicle. The serial number for the launch vehicle should be recorded. A launch vehicle can perform multiple launches over time.
7. Each launch vehicle is of a specific launch vehicle type. The name, maximum thrust and whether it is reusable need to be recorded for the launch vehicle type.
8. A specific manufacturer makes each launch vehicle type, and a manufacturer can make many different launch vehicle types.
9. Each launch carries one payload, and a payload is only carried by one launch.
10. A manufacturer also makes each payload, and a manufacturer can make many different payloads over time.
11. Multiple crew members can be carried on a crewed launch, and each crew member can be carried on multiple launches over time.
12. Each crew member has a nationality (the country they come from), and their name and surname also need to be recorded.
13. Crew members can appear in the database before they launch for the first time.

- **NB: Draw an ERD representing these business rules.**

- **You are required to show relation schemas that include surrogate primary key and foreign key fields.**