Defining the Attributes

Relational Database Design

Session Outline

- What attributes are
- How to determine them
- Determine the attributes for our sample student enrolment database

Attributes

- Attributes are what is being stored for each entity or table

- Also called "columns" or "fields"

- They are "attributed" to an object or entity

- Stores what you want to know about an object

- E.g. Product table may have attributes for:
  - Product name
  - Price
  - Colour

How To Determine Attributes

- How to you determine the attributes for your database?
- Work out what you need to know for your tables
- Relate it to a real world example
    - Students: they are people, so they have a first name, last name, date of birth

List of Attributes

- You might come up with a long list of attributes
- That's OK – leave them in now, you can remove them later if you like
- Another question to ask – what does the object "have"?
- E.g. subjects:
  - They have students enrolled in them
  - Subjects could have a student name, subject name, maybe a category (such as Science or English)

Our Example

- For our example so far:
- Student
  - First name
  - Last name
  - Date of birth
  - Address
- Subject
  - Subject name
  - Subject category
  - Student name

- Teacher
  - First name
  - Last name
  - Date of birth
  - Address
  - Subject taught
- University
  - University name
  - University address

Attribute Types

- Now you have your list of attributes
- We need to determine the type
- What type of information is stored in each attribute?
- For the moment, just a general indication
  - Text
  - Number
  - Date
  - Yes or No
- Does not need to be database-specific or programming related

Our Example

- For our example so far:

- Student
  - First name (text)
  - Last name (text)
  - Date of birth (date)
  - Address (text)
- Subject
  - Subject name (text)
  - Subject category (text)
  - Student name (text)

- Teacher
  - First name (text)
  - Last name (text)
  - Date of birth (date)
  - Address (text)
  - Subject taught (text)
- University
  - University name (text)
  - University address (text)

MySQL Workbench

- Let's add these attributes to our MySQL Workbench file

Summary

- Attributes are the information that is stored about a particular object

- They are also called fields or columns

- You can determine your attributes by thinking of real world examples, or thinking about what you want to know about the object

Action

1. For each of your tables or entities, create a list of attributes for them

2. Determine what type of data they should hold (text, number, date, yes/no)

What's Next?

- Find out what normalisation is and why it's important for database design