

# Database Design

## Normalisation

- Normalisation is the process of converting your database design to a standard process.
- There are three normal form, first, second and third normal forms
- 1NF, 2NF, 3NF

### First Normal Form

- Each set of columns must uniquely identify a row
- If its more than one row with combination of columns, it is not unique

### Primary Key

- It is used to uniquely identify a record in a database.
- A field or column in a table that contains a unique value for the row
- Eg: Student ID

### Action:

- Analyse the data, add a primary Key - which field can be used to uniquely identify a row

### First normal form: Student

- None of the fields can uniquely identify a student
- So, we create a new field -> Student ID

### Summary:

- For each of your tables, determine if any combination of the columns can be used to uniquely identify a record
  - If so, determine what columns can be the primary key
  - If not, create a new column for the primary key

## First Normal Form: Student, Subject, Teacher, University

University		
PK	university ID	number
	name	text
	unit number	number
	street number	number
	street name	text
	suburb	text
	city	text
	state	text
	code	text
	country	text

Subject		
PK	subject ID	number
	subject name	text
	category	text
	student name	text

Student		
PK	student ID	number
	first name	text
	last name	text
	date of birth	date
	unit number	number
	street number	number
	street name	text
	suburb	text
	city	text
	state	text
	code	text
	country	text

Teacher		
PK	teacher ID	number
	first name	text
	last name	text
	date of birth	date
	subjects taught	text
	unit number	number
	street number	number
	street name	text
	suburb	text
	city	text
	state	text
	code	text
	country	text