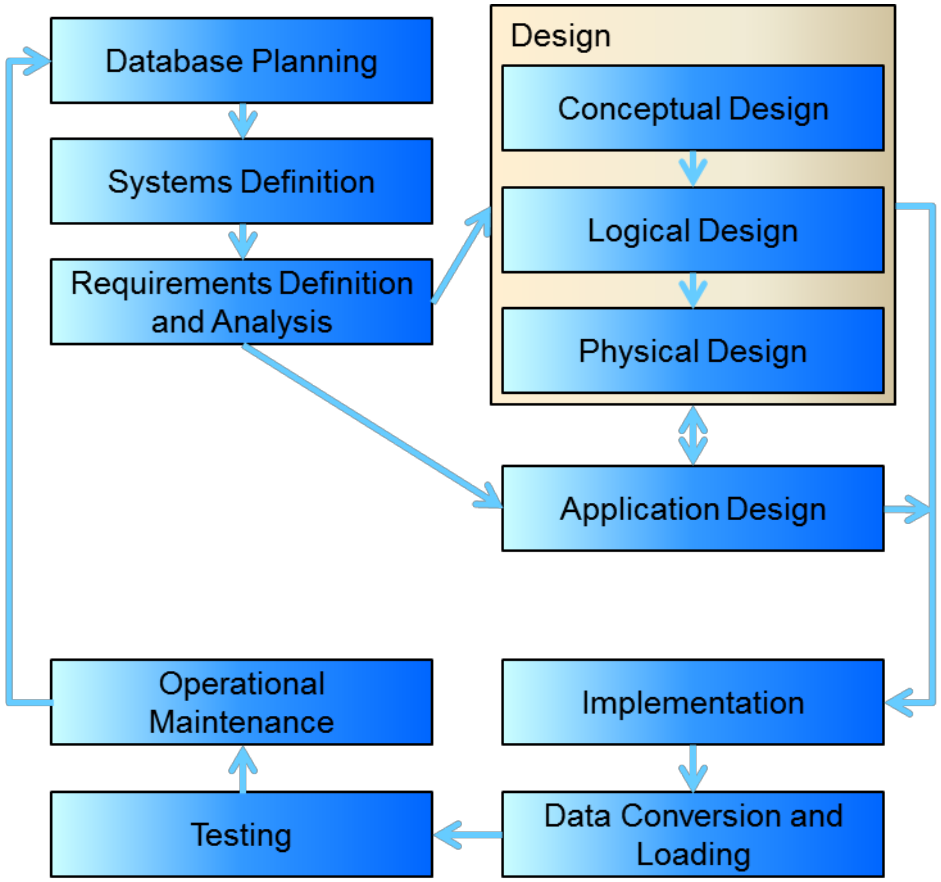
INFO20003 Tutorial – Week 2

Objectives:

This tutorial will cover:

I. Review of the Database Development Lifecycle focusing on the design stage (Q1) – 20 mins
II. Case study – identify entities, business rules and attributes (Q2) – 30 mins

Exercises:



1. **The diagram above shows the stages of the Database Development Lifecycle.**
   a. What is the purpose of each stage and what do we, as database designers, need to do in each stage?
   b. Describe the tasks that are performed in the conceptual design stage to generate a conceptual model.
   c. How do you refine a conceptual model to convert it to a logical model (Relational)?
   d. What must be done to transform a logical model to a physical model (Relational)?

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2. Consider the following case study:

A cinema chain operates a number of cinemas. Each cinema has several screens, numbered starting from 1. The chain keeps track of the size (in feet) and seating capacity of every screen, as well as whether the screen offers the Gold Class experience.

The cinema chain owns hundreds of movie projectors – both film projectors (16 mm and 35 mm) and digital projectors (2D and 3D). The chain stores key information about each projector, namely its serial number, model number, resolution and hours of use. Each movie screen has space for a single projector; technicians must be able to identify which screen each projector is currently projecting onto.

A wide range of movies are shown at these cinemas. The system should keep track of the last time a movie was shown on a particular screen. The marketing department needs to know the movie's title and year of release, along with the movie's rating (G, PG, M, MA15+ or R18+).

Each cinema has a numeric ID, name and address. For cinemas that are not owned outright, the business also keeps track of yearly rent. The system needs to be able to generate weekly activity reports for the chain's chief operating officer.

a. Identify the **entities**.
b. Identify the **business rules**.
c. For any three identified entities, list the **attributes**.