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| DAT601 Assessment 1 |
| Stage One |
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# Introduction

# Data Modelling Overview

## What is Data Modelling?

Data modelling is a crucial tool used in the process of designing and developing information systems. It involves building representations of the data and the connections between it and other elements of a system commonly known as models. Data modelling helps to analyse and identify the types of data that a system needs to store, as well as the interrelationships between these data types. System developers can better understand a business's data needs by using data modelling, and they can then design efficient and effective systems to satisfy those needs.

Data modelling is necessary within the information systems industry because of the benefits it provides to teams and businesses that employ it. Data modelling can provide some of the following benefits:

1. Data quality – Data is more likely to be accurate, consistent and relevant to the needs of the system.
2. Decision making - System developers are enabled to make more informed decisions about the system and its requirements.
3. Communication – The models create through data modelling allow for eased communication between team members and stakeholders.

A business without the usage of data modelling would, in most cases, be less efficient and less effective at utilizing and managing data. Without any form of data modelling business will be more prone to design flaws and inconsistencies between components of a system.

## Conceptual Model

The conceptual model provides a high-level representation of a system that captures its key concepts and relationships, without going into detail about the specific types and constraints.

## Logical Model

The logical model provides an increased level of detail of the entities and their relationships, the logical model includes specific details about the attributes, data types and constraints.

## Physical Model

The physical model is a more specified version of the logical model that represents the physical implementation of the database within a particular database system management system.

## Entity Relationship Diagrams

# Chen’s Notation

## Entities

## Attributes

## Identifiers

## Relationships

### Cardinality

### Optionality

Generalization

Specialization

# Conceptual ERD

# References

# Appendix