

Introduction

The relational database is the most common form of database found today and is at the heart of a multi-billion dollar global industry. If you have not directly come across one you can be assured you will have unknowingly used many products or services where a relational database is at the core of their business. During this unit you will be introduced to designing a relational database using methodologies such as Normalisation and Entity Relationship Modelling, implementing your design using Structured Query Language (SQL) and finally interacting with your implementation using SQL and higher level programming languages. But first let us start from the beginning in defining what a relational database is.

What is a relational database?

Though you are probably aware of the term database, what you're actually referring to is a Database Management System. A database in specific terms is a collection of related data managed as a single unit and stored on some form of persistent storage device such as a hard disk. This collection of data is managed by the Relational Database Management System (RDBMS) which acts to control access to the database. The RDBMS is a collection of applications sitting on top of the database providing a number of vital functions which include.

- Allows users to create databases
- Allow users to query the data stored
- Support and maintain large amounts of data
- Allow multiple users to access the data concurrently

Most importantly the RDBMS provides consistency, integrity and security of the data it holds and as such the reliability and robustness of the relational database it looks after.