# CPSC 332 PART 1 DATABASE SYSTEMS

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WHAT IS A DATABASE SYSTEM?

Users/Programmers

Database System

Application Programs/Queries

DBMS Software

Software to Process Queries/Programs

Software to Access Stored Data

Stored Database Definition (Meta-Data)
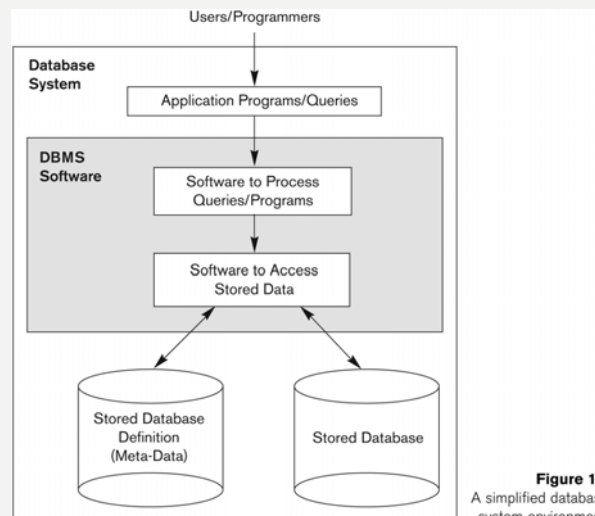
Stored Database

Figure 1.1
A simplified database system environment.

COMPONENT MODULES OF A DBMS
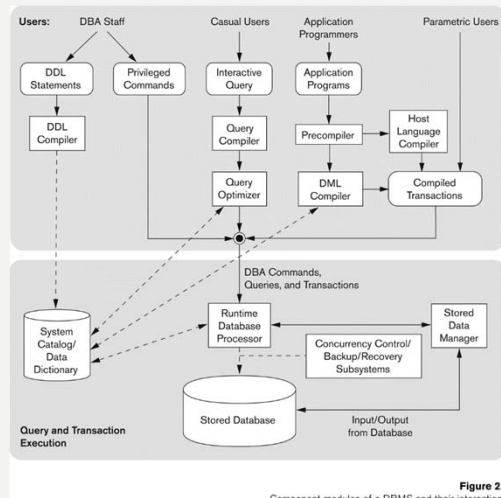
Figure 2.3
Component modules of a DBMS and their interactions.

A PHYSICAL CENTRALIZED ARCHITECTURE
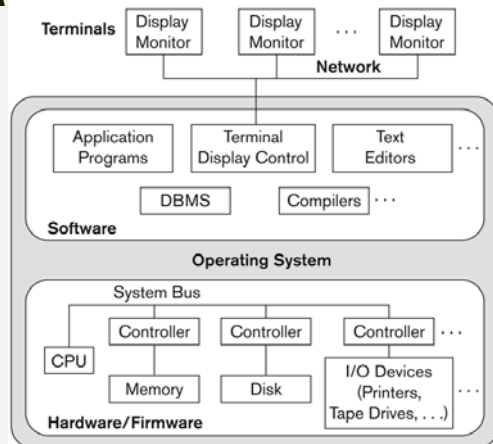
Figure 2.4
A physical centralized architecture.

A CLIENT/SERVER ARCHITECTURE

Figure 2.6
Physical two-tier client/server architecture.
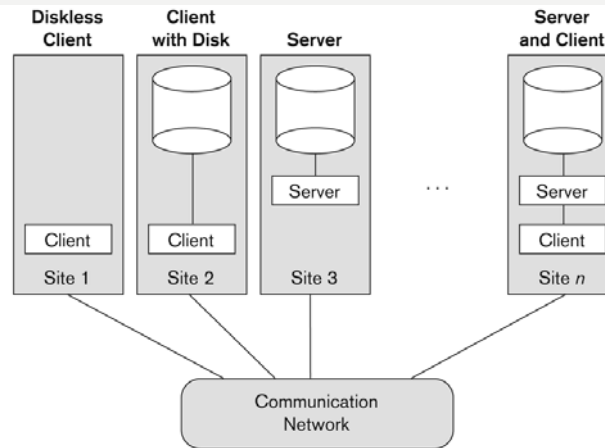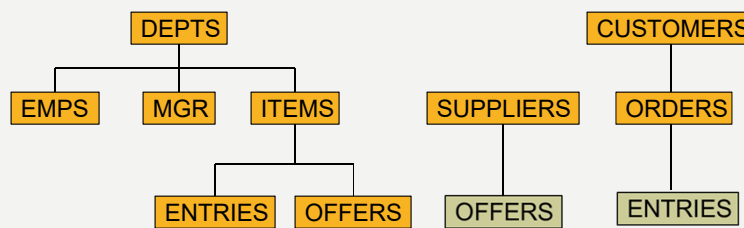
THE HIERARCHICAL MODEL

THE NETWORK MODEL

COURSES		CPSC 201	MATH80	CPSC 203
ENROLL		1 A 1 C	2 B 1 A	3 A
STUDENTS		Grind Nerd	Weenie	Jock
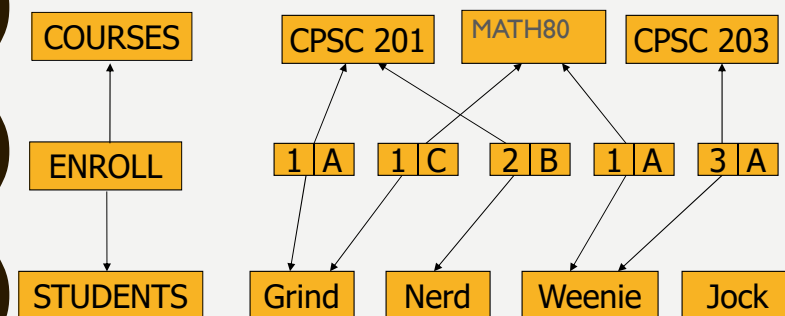
THE RELATIONAL MODEL

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190897222	CPSC 440	A
163899991	CPSC 231	A

BRIEF HISTORY OF THE RELATIONAL MODEL

- 1970 E.F. Codd "A Relational Model For Large Shared Data Banks" CACM
- 1973 – 1980 Mike Stonebraker developed INGRES
- 1980 – Stonebraker founded INGRES Corp.
- 1981 – E. F. Codd received Turing Award
- 1983 Codd's paper of 1970 was reprinted in CACM
- 1986 – Codd specified 13 criteria for a DBMS to be a relational DBMS
- 1994 INGRES was purchased by Computer Associates
- 1994 Stonebraker started POSTGRES – incorporating object relational concept
- 2015 Stonebraker received Turing Award