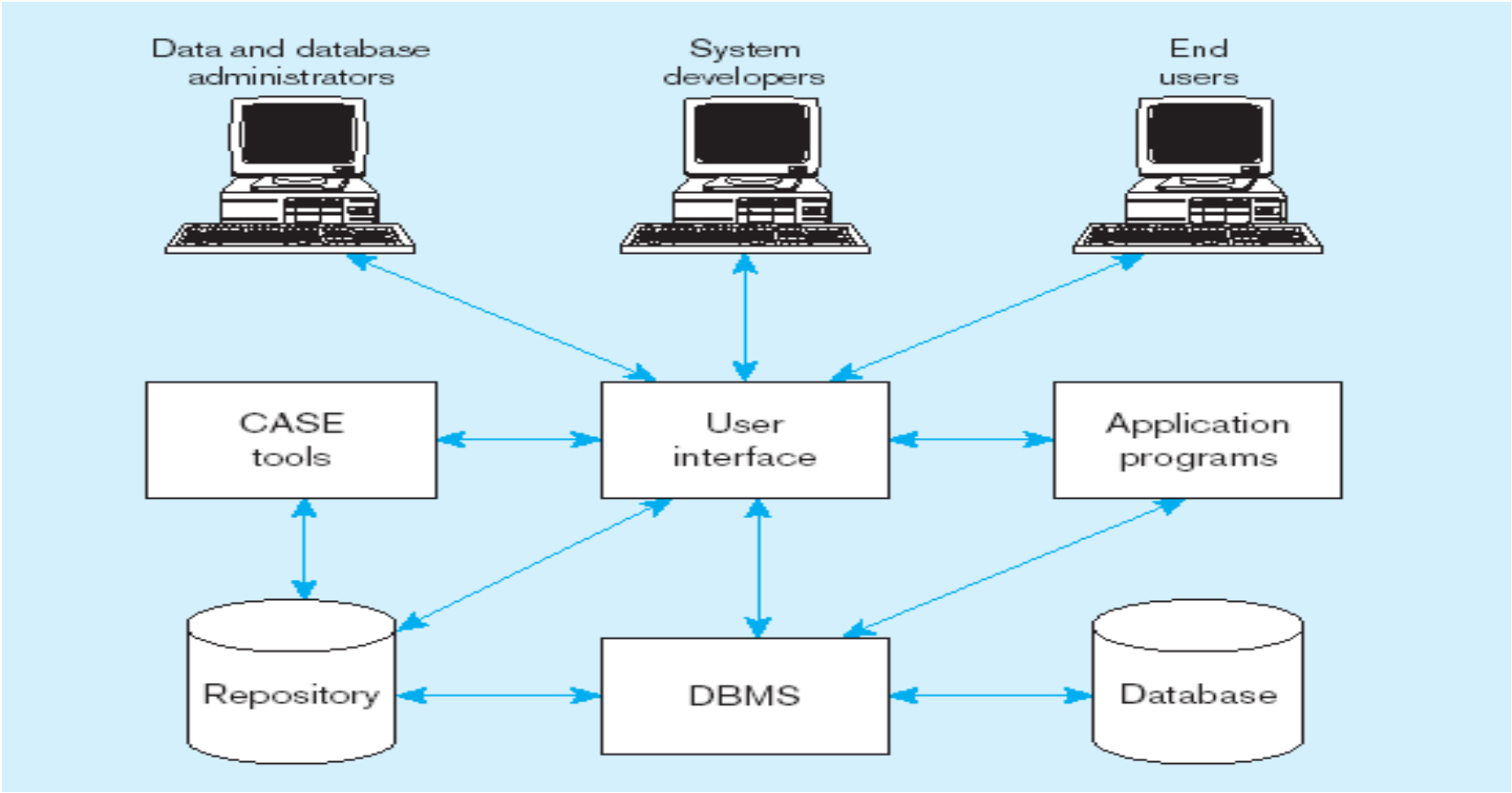
Database System 2021

Components of Database Environment Lec-3

Components of Database Environment

- **CASE Tools**
- **Repository**
- **DBMS**
- **Database**
- **Application Programs**
- **User Interface**
- **Data/Database Administrators**
- **System Developers**
- **End Users**

Components of Database Environment



Components of Database Environment

Components of Database Environment

- **CASE Tool**
  - Computer Aided Software Engineering Tool
  - Automatic tools used to design databases and application programs.
    - **Data Model:** Graphical systems used to capture the nature and relationships among data.

- **DBMS**
  - Database Management System
  - A database management is a software that is used to create, maintain, and provide controlled access to user databases.

Components of Database Environment

- **Repository**
  - Centralized storehouse of metadata
  - Centralized knowledge base for all data definitions, relationships, formats, and other system component.

- **Database**
  - A collection of similar records with relationships between the records.

- **What is difference between Repository and database?**

Components of Database Environment

- **Application Programs**
  - **Computer programs** that are used to create and maintain the database.
  - Computer program provide information to the users.

- **User Interface**
  - Language and menus by which user interact with the various system components.

Components of Database Environment

- **Data and Database Administrator**
  - Data Administrator is a person who is responsible for the overall management of data resources in an organization, including maintaining data definitions and standards.
  - Database Administrator is a person who is responsible for **physical database design** and **technical issue**.

- **System developers**
  - **Person** who develops the database or new application programs.

Components of Database Environment

- **End Users**
  - The person who use the database for their need in an organization.
  - The person who add, delete, modify data in database.
  - There are two type of end users.
    - **Naïve users**
    - **Sophisticated Users**

The Range of Database Application

- **Database Applications:**
  - Personal databases
  - Workgroup databases
  - Departmental/divisional databases
  - Enterprise database
  - Web-Enabled Databases

The Range of Database Application

Table 1-6 Summary of Database Applications (adapted from White, 1995)

Type of Database	*Typical Number of Users*	*Typical Architecture*	*Typical Size of Database*
Personal	1	Desktop/laptop computer, PDA	Megabytes
Workgroup	5–25	Client/server (two-tier)	Megabytes–gigabytes
Department/Division	25–100	Client/server (three-tier)	Gigabytes
Enterprise	>100	Client/server (distributed or parallel server)	Gigabytes–terabytes
Web-enabled	>1000	Web server and application servers	Megabytes–gigabytes

Database Application

- **Personal databases**

Customer

Customer Name: **Multi Media, Inc.**
Address: **1000 River Road**
City: **San Antonio**
State: **TX**
Zip: **76235**
Phone: **(219) 864-2000**
Next Contact Date: **10/17/2006** — Time: **10:30 AM**

Contact History for Customer

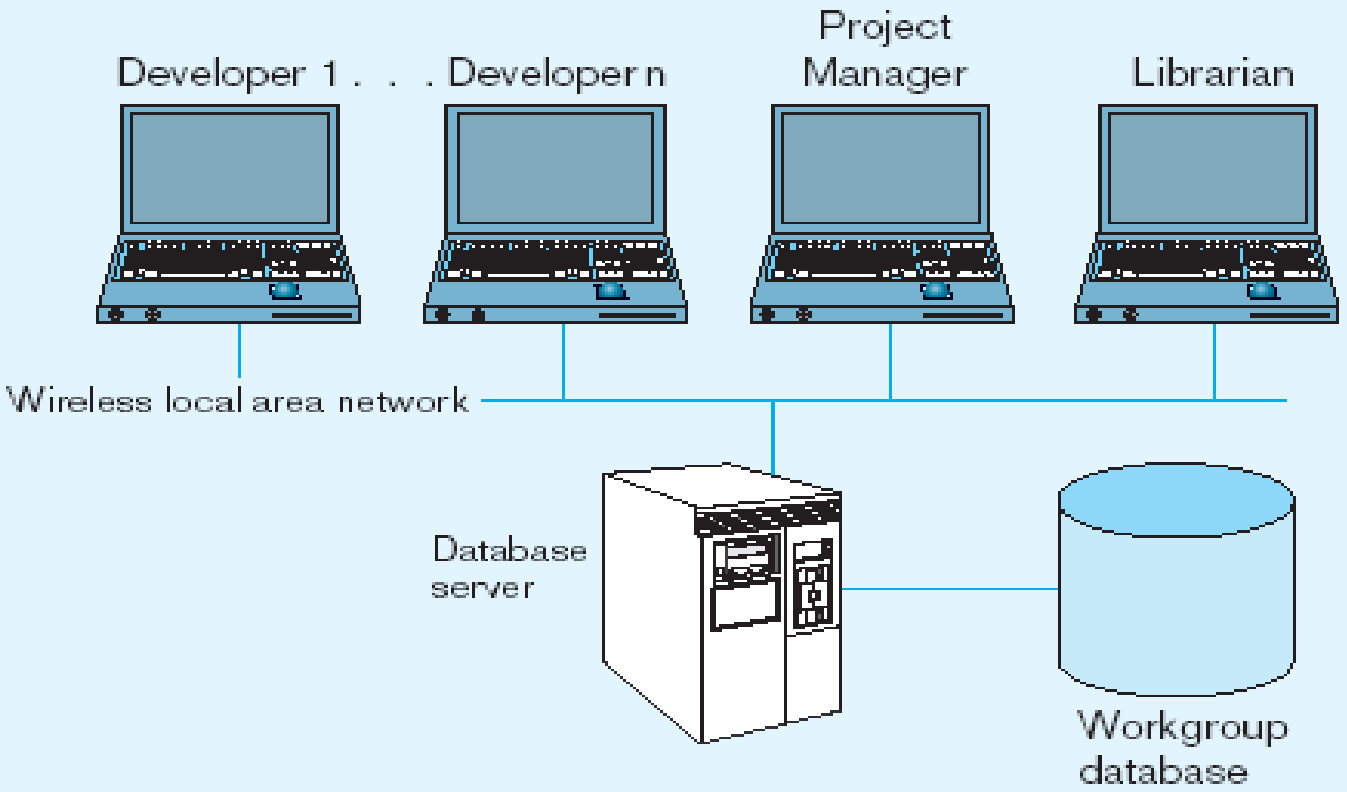
Date	Time	Contact	Comments
08/04/2006	10:00 AM	Roberts	Review proposal
08/19/2006	08:00 AM	Roberts	Revise schedule
09/10/2006	09:00 AM	Pearson	Sign contract
09/21/2006	02:00 PM	Roberts	Follow up

Database Application

- **Personal databases**
- Personal databases are designed to support one user.
- Personal databases have long resided on personal computers (PCs), including laptops.
- The purpose of these databases is to provide the user with ability to manage (store, update, delete, and retrieve) small amounts of data in an efficient manner.

Database Application

- **Workgroup databases**



Database Application

- **Workgroup databases**
- A workgroup is a relatively small team of people (typically fewer than 25 persons) who collaborate on the same project or application or on a group of similar projects or applications.

Database Application

- **Departmental/Divisional Databases**
  - Size of database is Gigabytes
  - Designed to support the various functions and activities of a department or division.
  - Examples: Marketing, manufacturing, and accounting.

Database Application

- **Enterprise database**

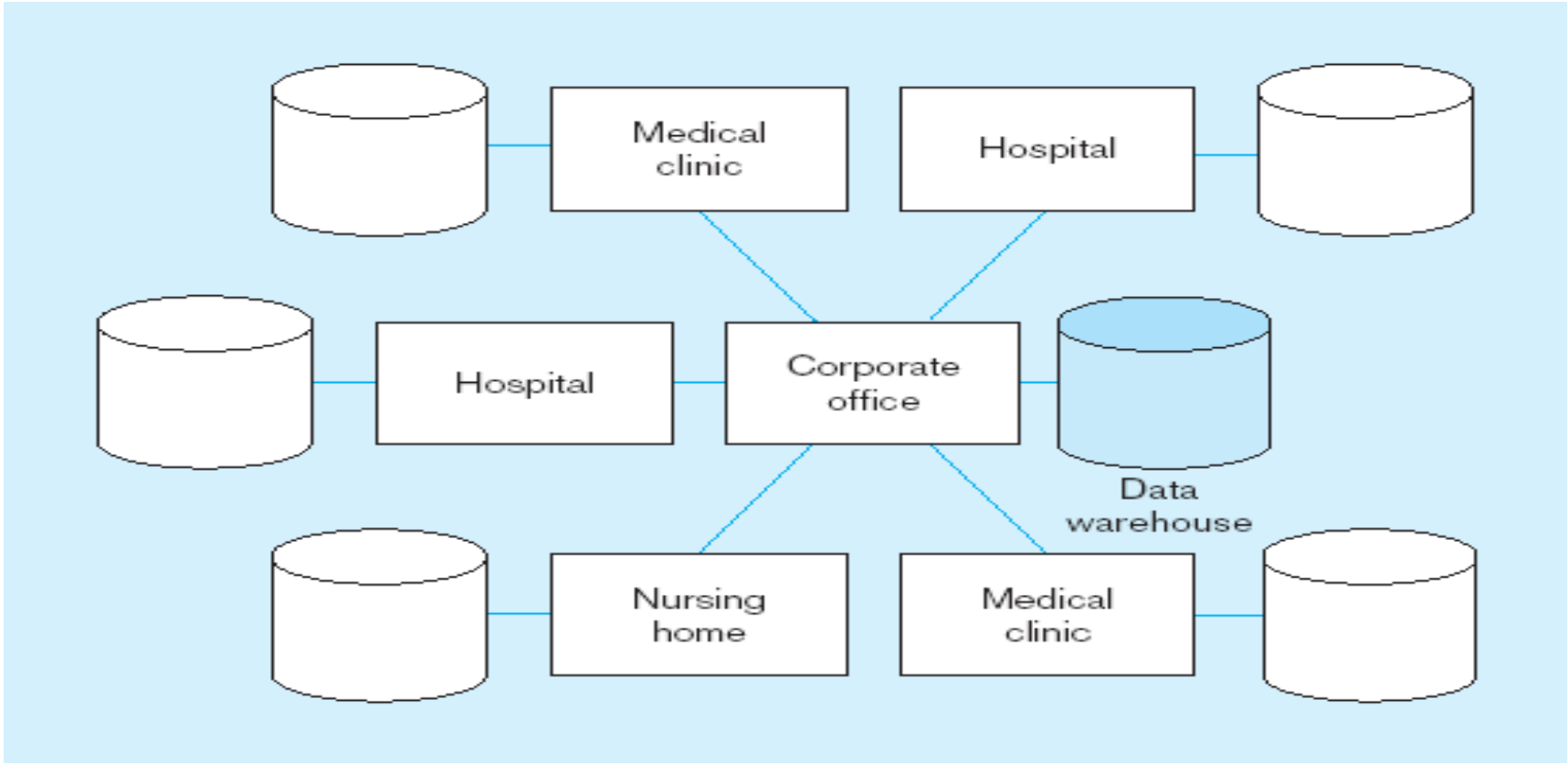
  - Size of database is Gigabytes-terabytes

  - Designed for entire organization.
  - Support different organization operations and **decision making.**

  - **Data warehouse** is used for decision making which integrate the data form different operational databases.

Database Application

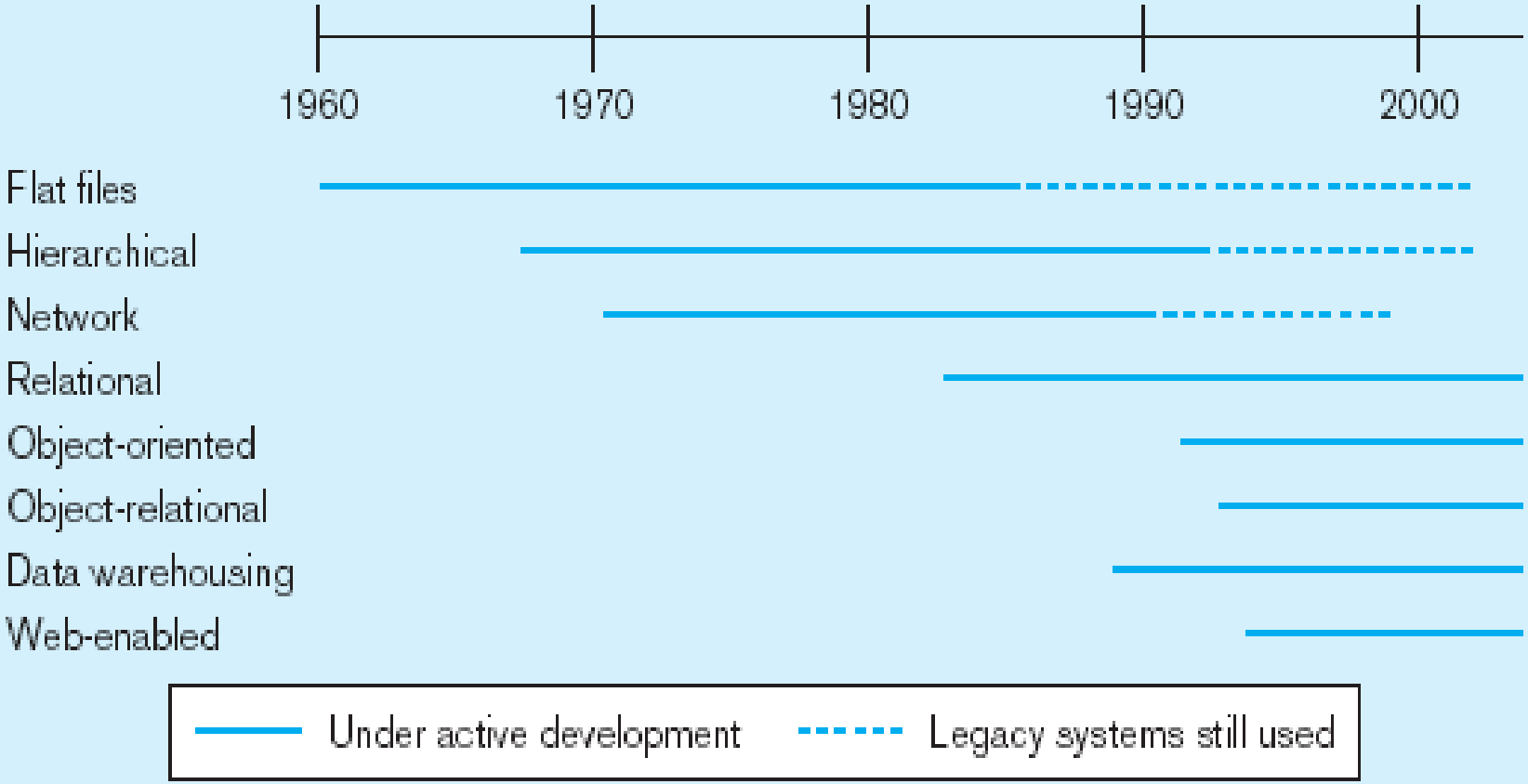
- **Enterprise database**



Database Application

- **Web-Enabled Databases**
- Size of database is Megabytes – Gigabytes.
- Design to support many application from internet
- In Web-enabled databases, the Web browser interface enables users to ask unique and specific questions and receive answers based on current information.

Evolution of Database Systems



Have a Nice Day