# Inf 202 Introduction to Data and Databases (Spring 2011)

Jagdish S. Gangolly
Informatics
CCI
SUNY Albany

January 20, 2011

# What is a Database?

Database is an

- **integrated** collection of
- **logically-related** records or files
- **consolidated** into a common pool that
- **provides data** for one or more **multiple uses**

**Source:** Wikipedia (http://en.wikipedia.org/wiki/Database)

# Examples – By Application

- Accounting (Inventory, Asset management, Payroll/Human Resources, ...)
- Marketing
- Flight reservations
- Census
- Library catalog
- Bibliographic databases
- Geneology databases
- Patient management
- ...

# Examples – by Type of Data

- Full text (*Lexis/Nexis*, *WestLaw*, ...)
- Images ( *Picassa*, *maps.google*, ...)
- Bibliographic (*Citeseer*, *Archiv*, ...)
- Numeric (*Accounting*, *Marketing*, ...)

# Examples – By underlying model

- Flat File (*Spreadsheets*, ...)
- Hierarchical (*IMS*, ...)
- network (*IDMS*, ...)
- **Relational** & Object-Relational (*MS-Access*, *Oracle*, *DB2*, *Informix*, ...)
- Object (*Objectivity/DB*, *Objectstore*, *POET*, *JADE*, ...)

# Traditional Databases

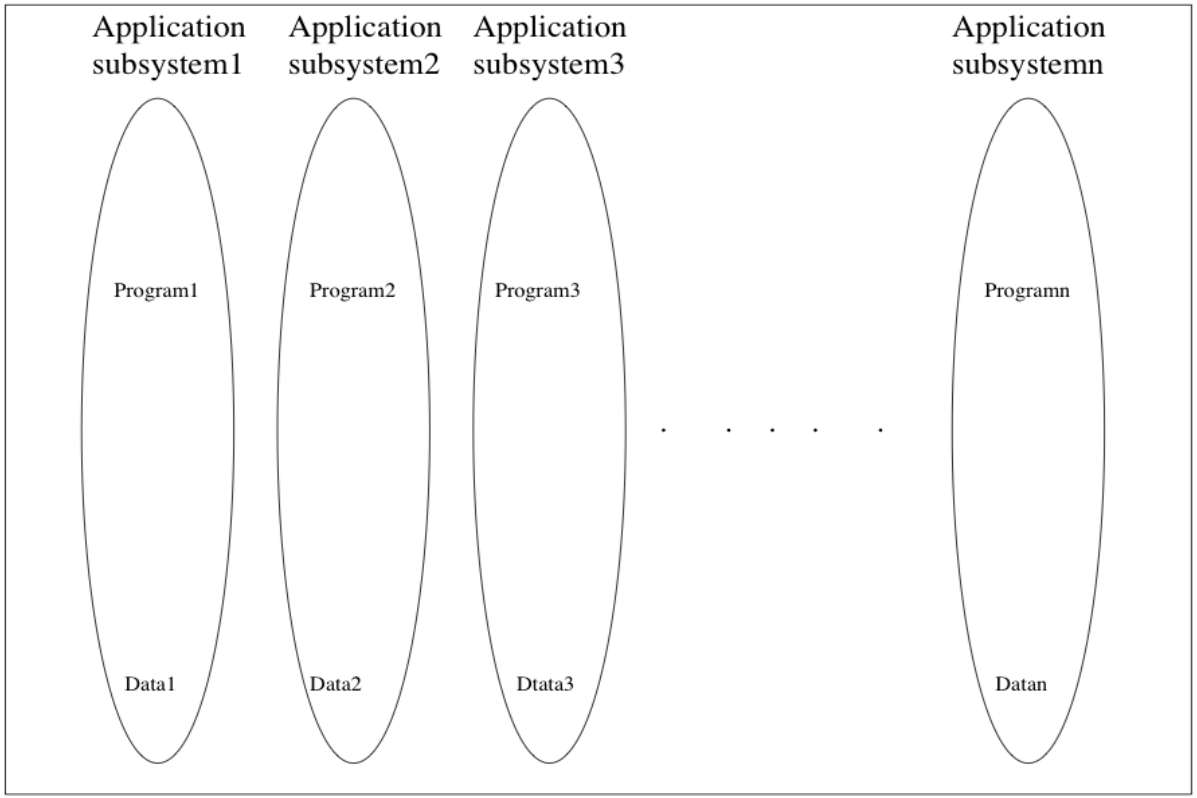


Figure: Traditional Databases (non-integrated)

# Modern Databases

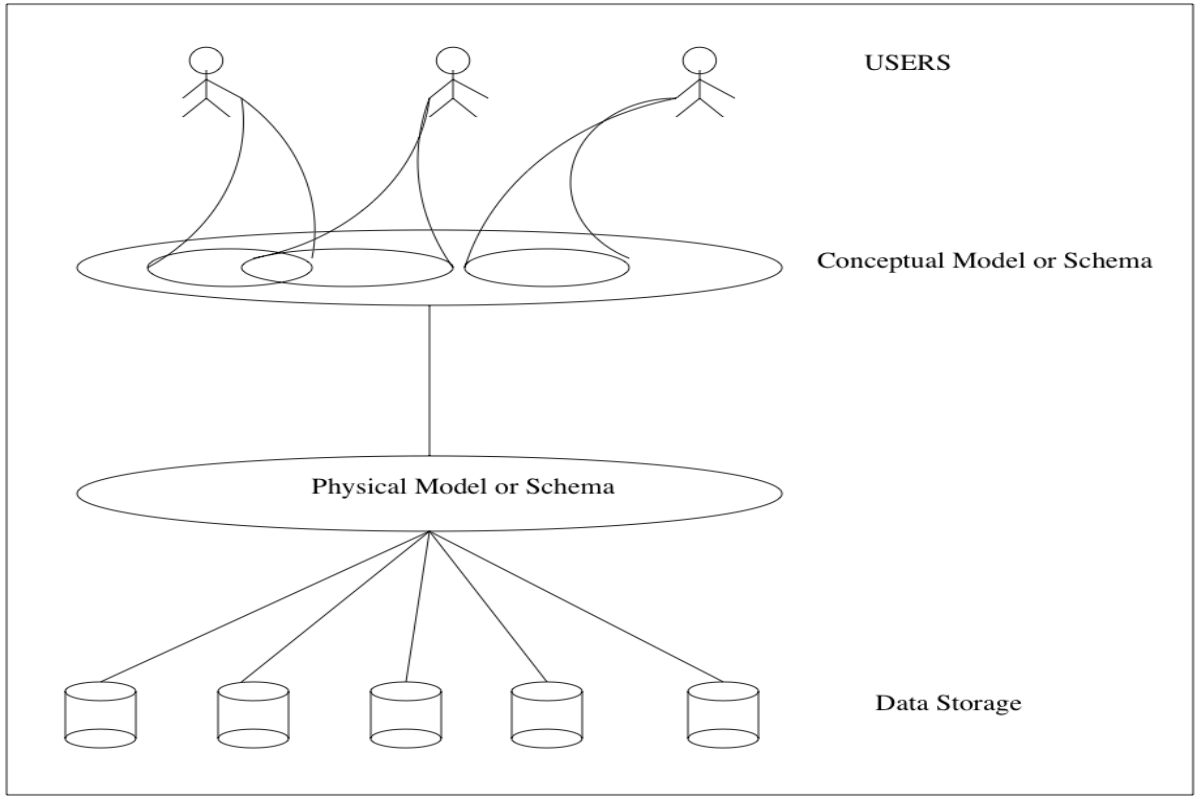


Figure: Modern Databases (integrated)

# Modern Databases – Architecture

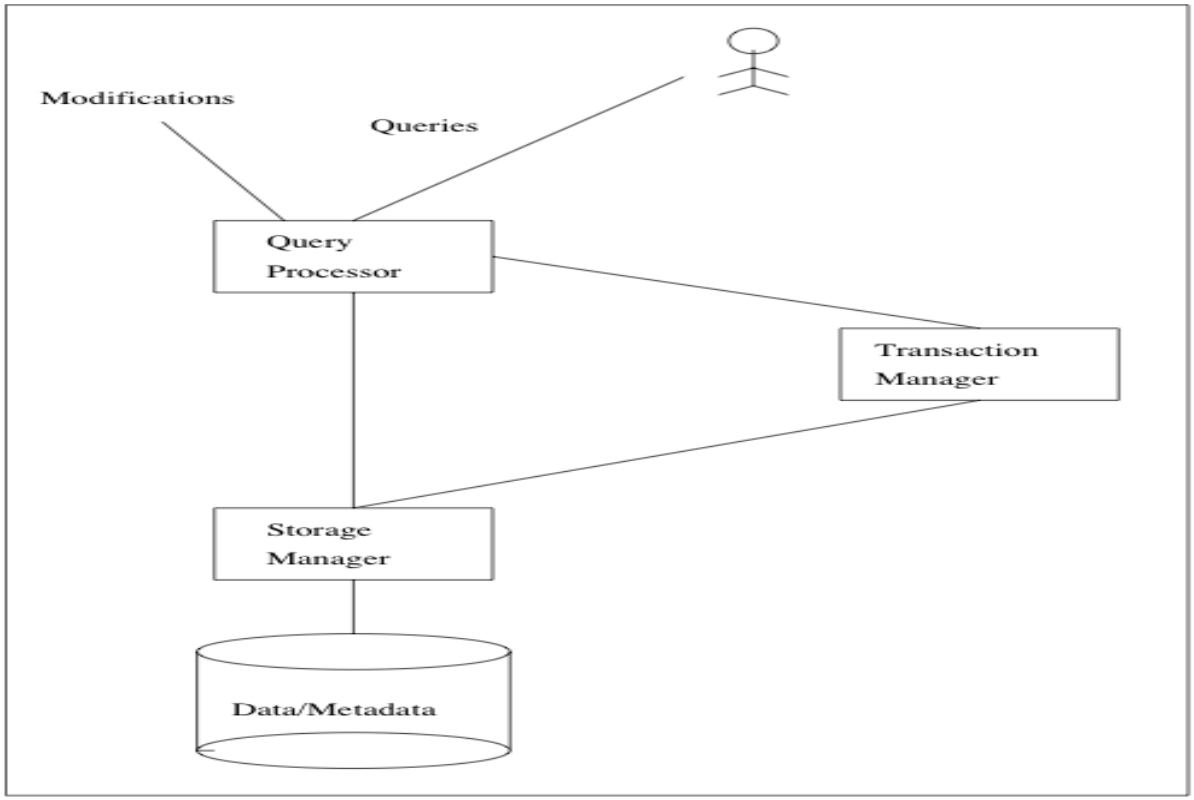


Figure: Modern Databases – Architecture