IIT PALAKKAD

Database Systems
Course Organization and Introduction

Jan – May 2025

Dr. Koninika Pal

Overview

- DBMS Theory
  - Concepts of DBMS and introduction to SQL
  - Assignments
- DBMS Lab
  - Implementation of different building blocks of DBMS
  - A small project where you need to create a full fledged DBMS

- Classes : Monday 10:00-10:50 AM , Wed 10:00 - 10:50 AM
- Discussion Session: Friday 10:00 -10:50 AM
- Lab: Tuesday 2:00 – 4:45 PM

Evaluation

- Course Evaluation
  - 5 Assignments: 4 marks each
  - Discussion session: 10 marks
    - presenting solution / QA
  - 2 Tests: 15 marks each
  - Final Exam: 40 marks

- Lab Evaluation
  - 10 Assignments: 6 marks each
  - 1 Midterm: 10 marks on test assignment and 10 for Project design
  - Final Project presentation: 20 marks

What is DBMS?

- Database: collection of interrelated data
- DBMS: A tool to create and manage databases

DBMS Applications

Smaller databases

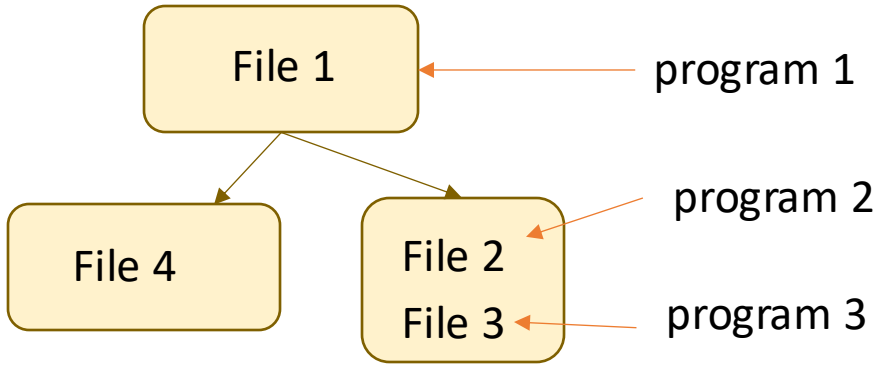
Bigger Databases

Data Integration

Why Databases?

- Easy to deploy and access
- Adaptive to new applications and technological changes

- How does a files system work?

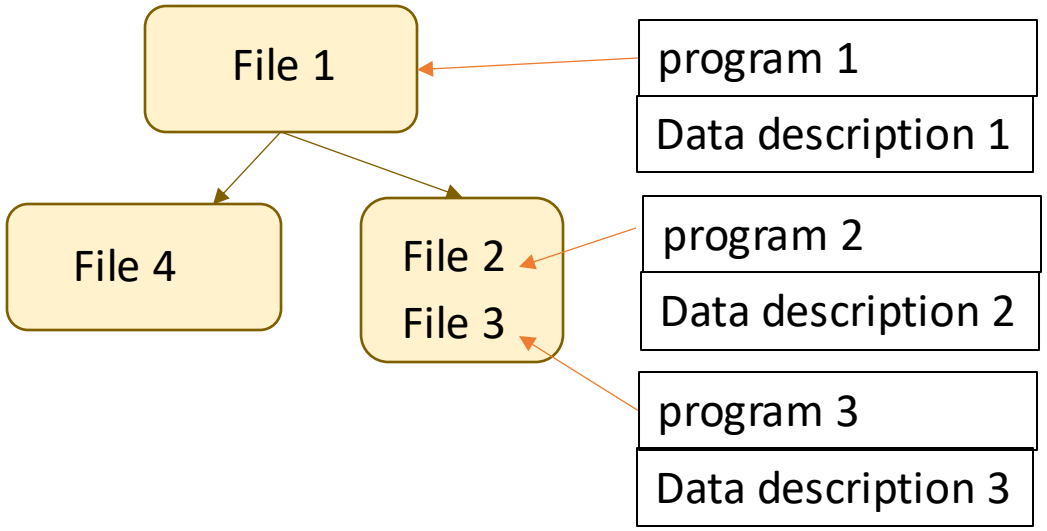


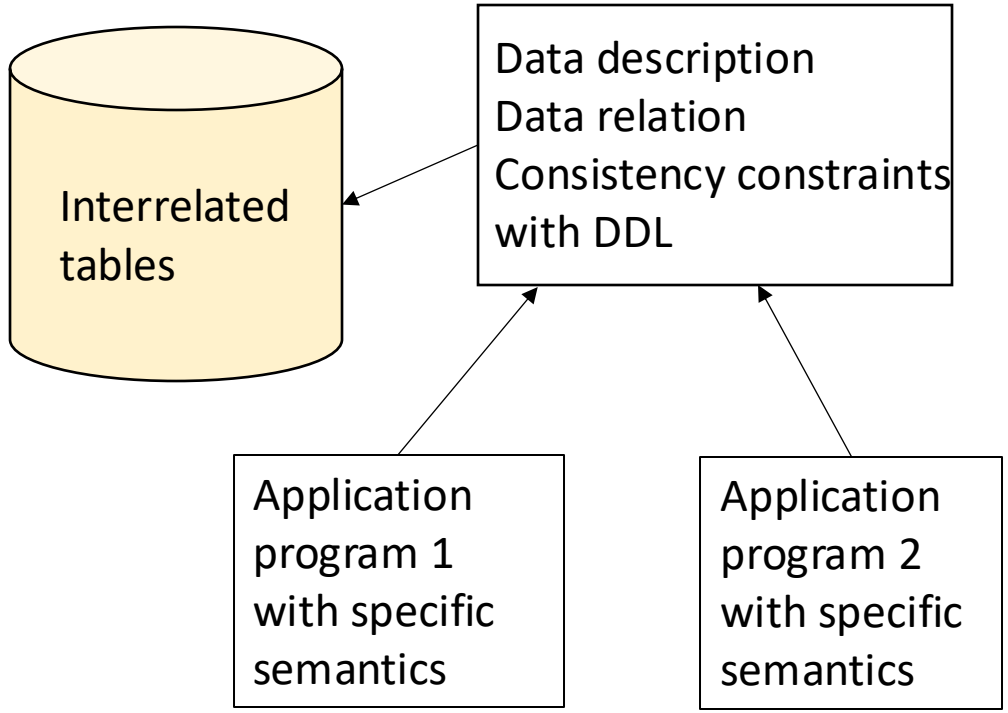
customer-id	*customer-name*	*customer-street*	*customer-city*
192-83-7465	Johnson	12 Alma St.	Palo Alto
019-28-3746	Smith	4 North St.	Rye
677-89-9011	Hayes	3 Main St.	Harrison
182-73-6091	Turner	123 Putnam Ave.	Stamford
321-12-3123	Jones	100 Main St.	Harrison
336-66-9999	Lindsay	175 Park Ave.	Pittsfield
019-28-3746	Smith	72 North St.	Rye

(a) The *customer* table

Advantages of DBs over File Systems

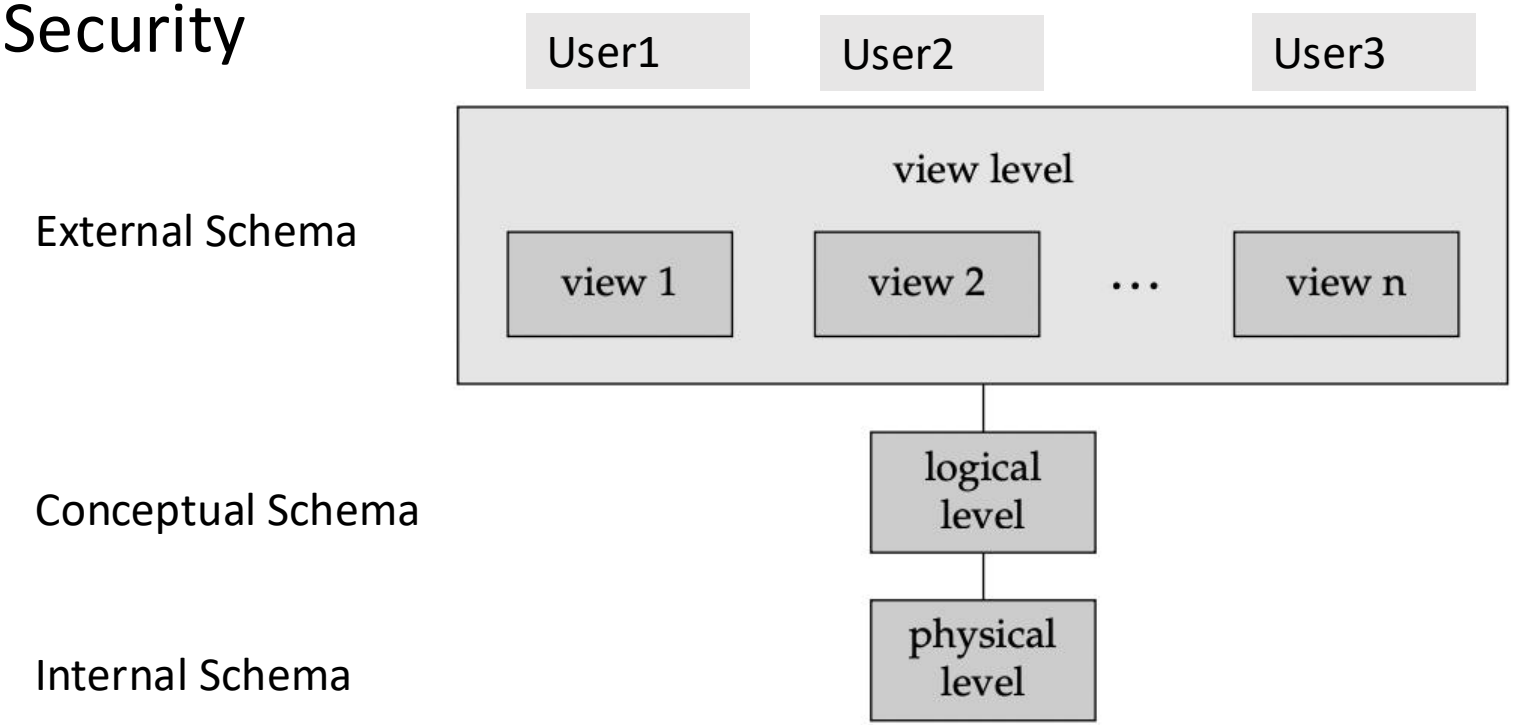
1. Data description
2. Redundancy and inconsistency
3. Data Integrity





Advantages of DBs over File Systems

4. Data Access
5. Data abstraction
6. Security



Source: Database system concepts

Advantages of DBs over File Systems

6. Concurrent Access
7. Recovery

Architecture of DBMS