Database Architecture in DBMS

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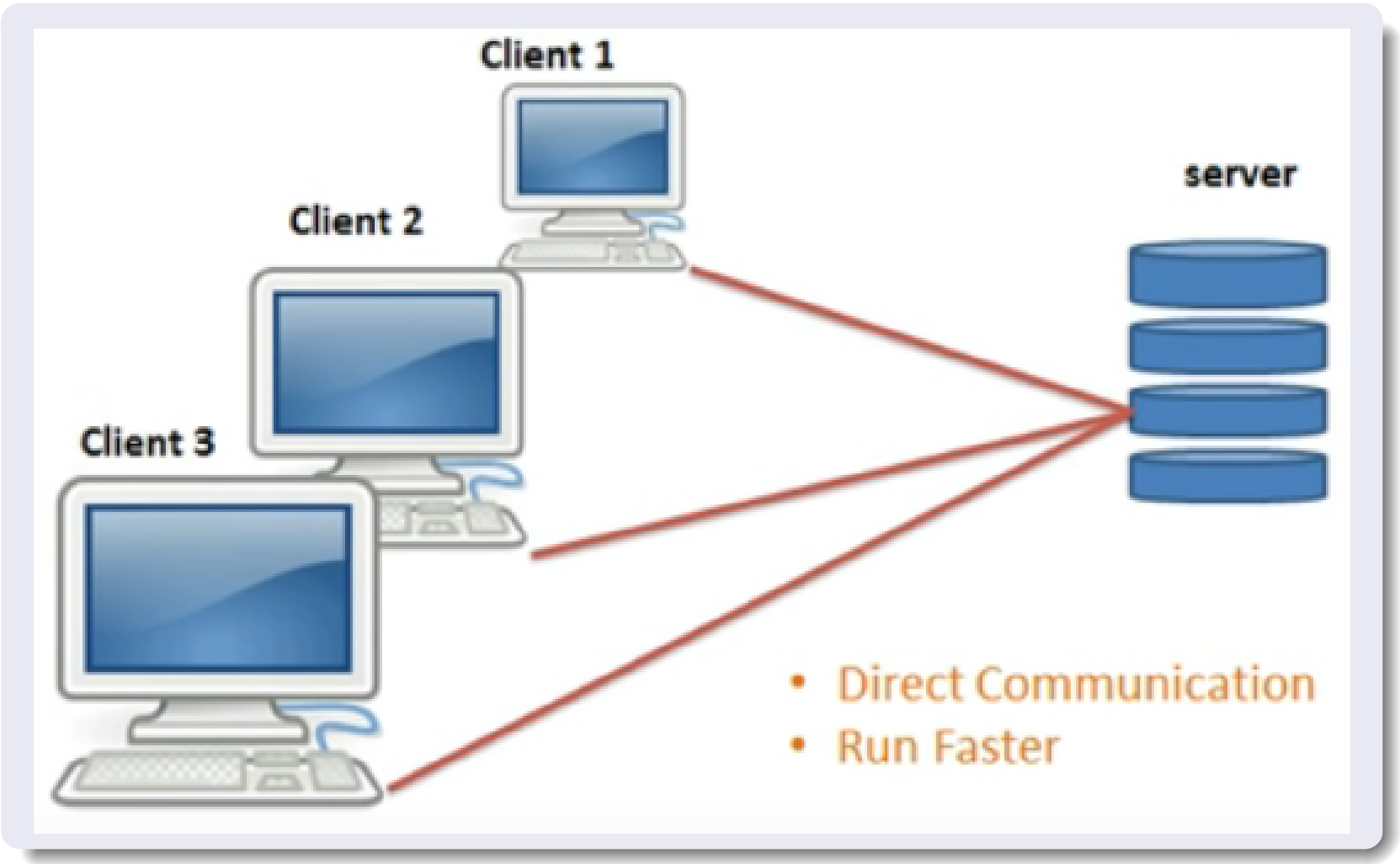
Two types of Architecture

- Database architecture in DBMS is logically divided into two types
  - Two tier Client Server architecture
  - Three tier Client Server architecture

Two tier

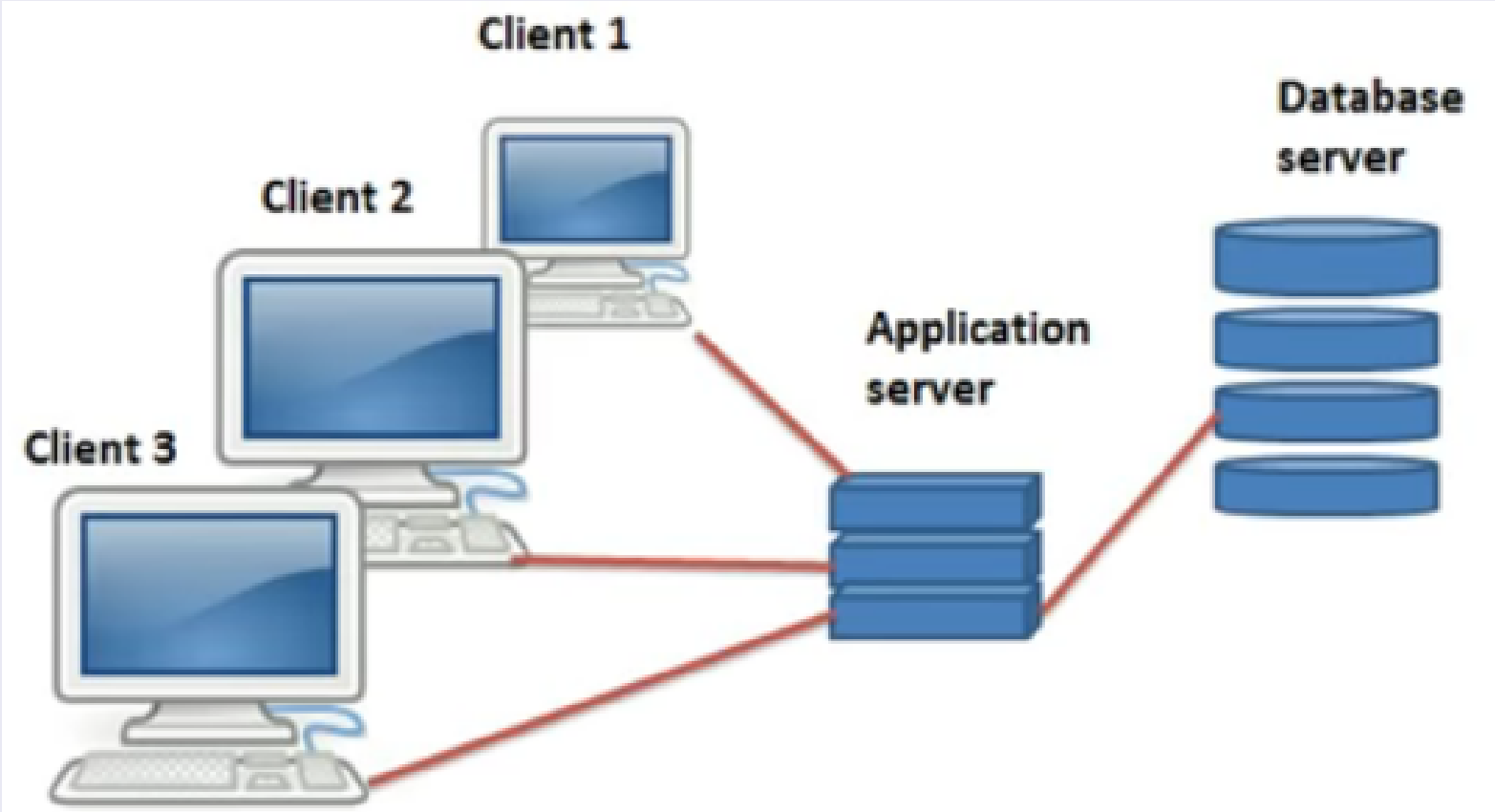
- Two tier architecture is used for Application Programs that runs on client side
- An interface called ODBC(Open Database Connectivity) provides an API that allow client side program to call the dbms
- Most DBMS vendors provide ODBC drivers.

Two tier Example



Three tier

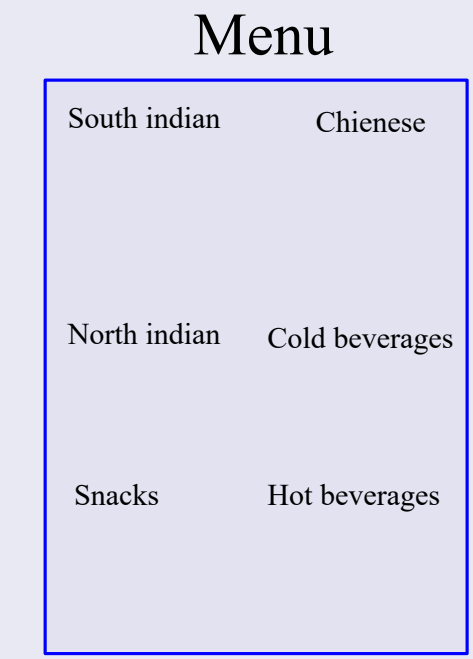
- Three-tier Client/Server database architecture is commonly used architecture for web applications.
- Intermediate layer called Application server



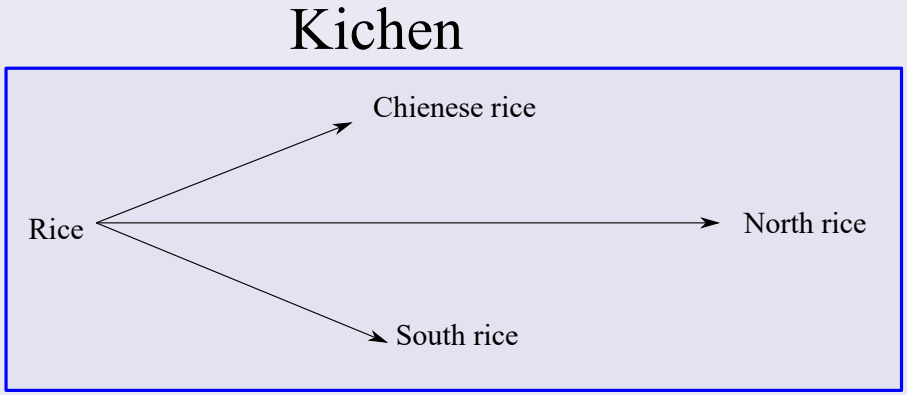
Database Model in DBMS

Database Model

- Database model is a logical frame in which data is stored
- The model also describes the relationships between different parts of the data



Logical arrangement



Physical arrangement

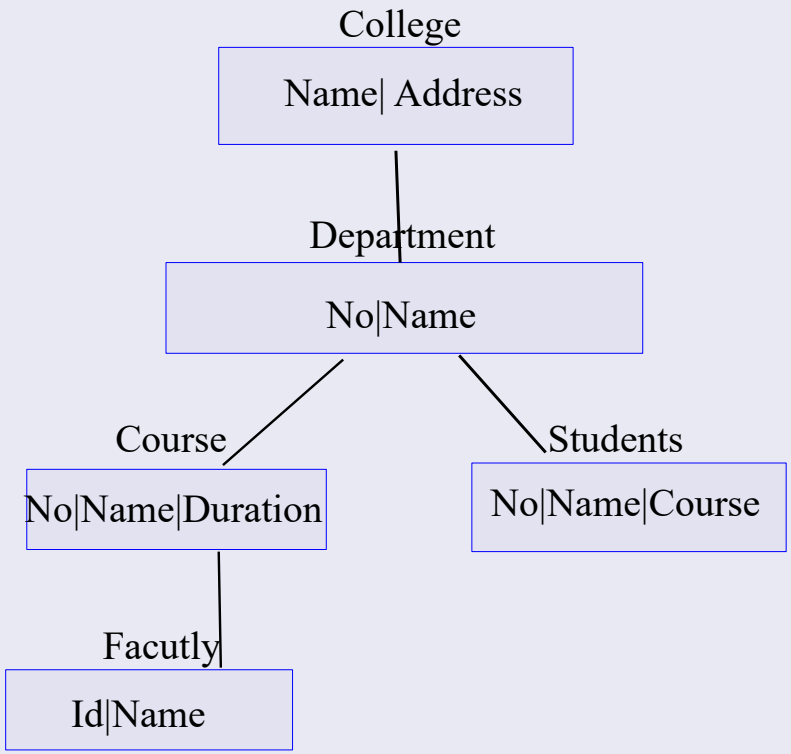
Traditional Models

Database Model

- Hierarchical Model
- Network Model
- Relational Model

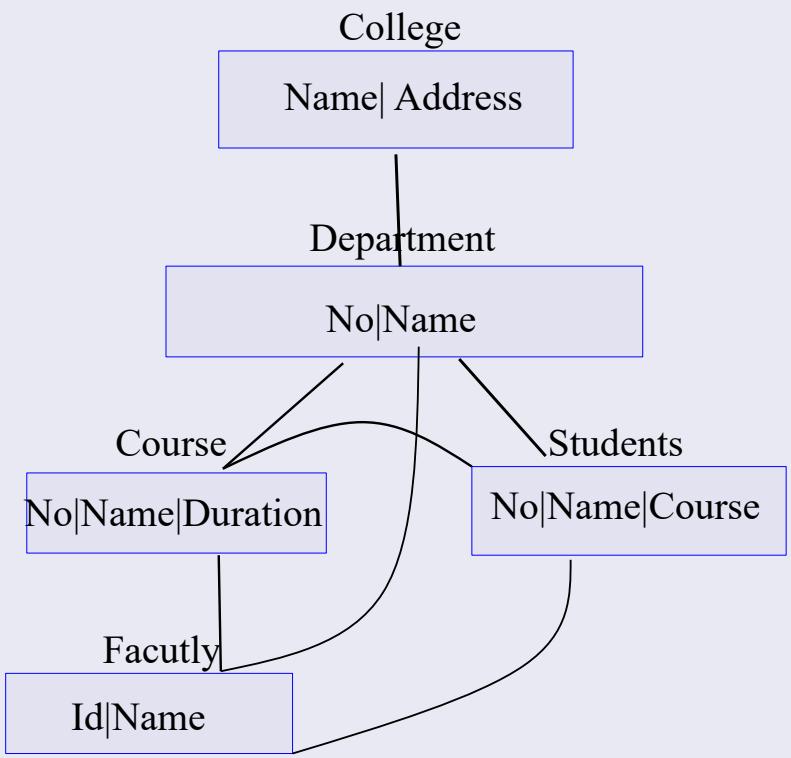
Hierarchical Model

- In this model each entity has only one parent but can have several children
- At the top of hierarchy there is only one entity which is called Root.



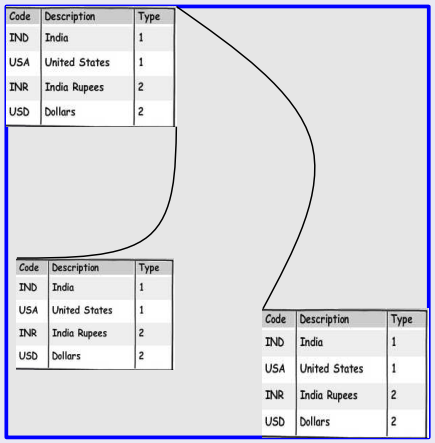
Network Model

- In this model, entities are organized in a graph in which some entities can be accessed through several path



Relational Model

- In this model, data is organized in two-dimensional tables called relations.
- Table in relational model is relation



Code	Description	Type
IND	India	1
USA	United States	1
INR	India Rupees	2
USD	Dollars	2

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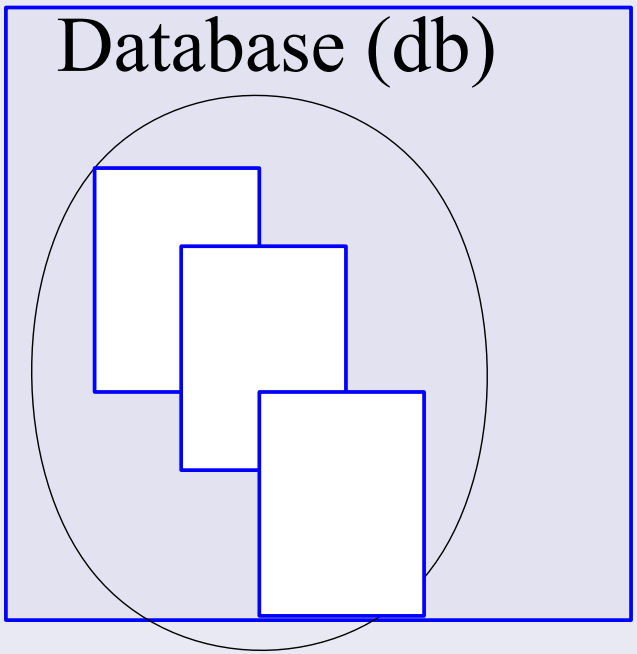
DBMS Software



RDBMS Concepts in DBMS

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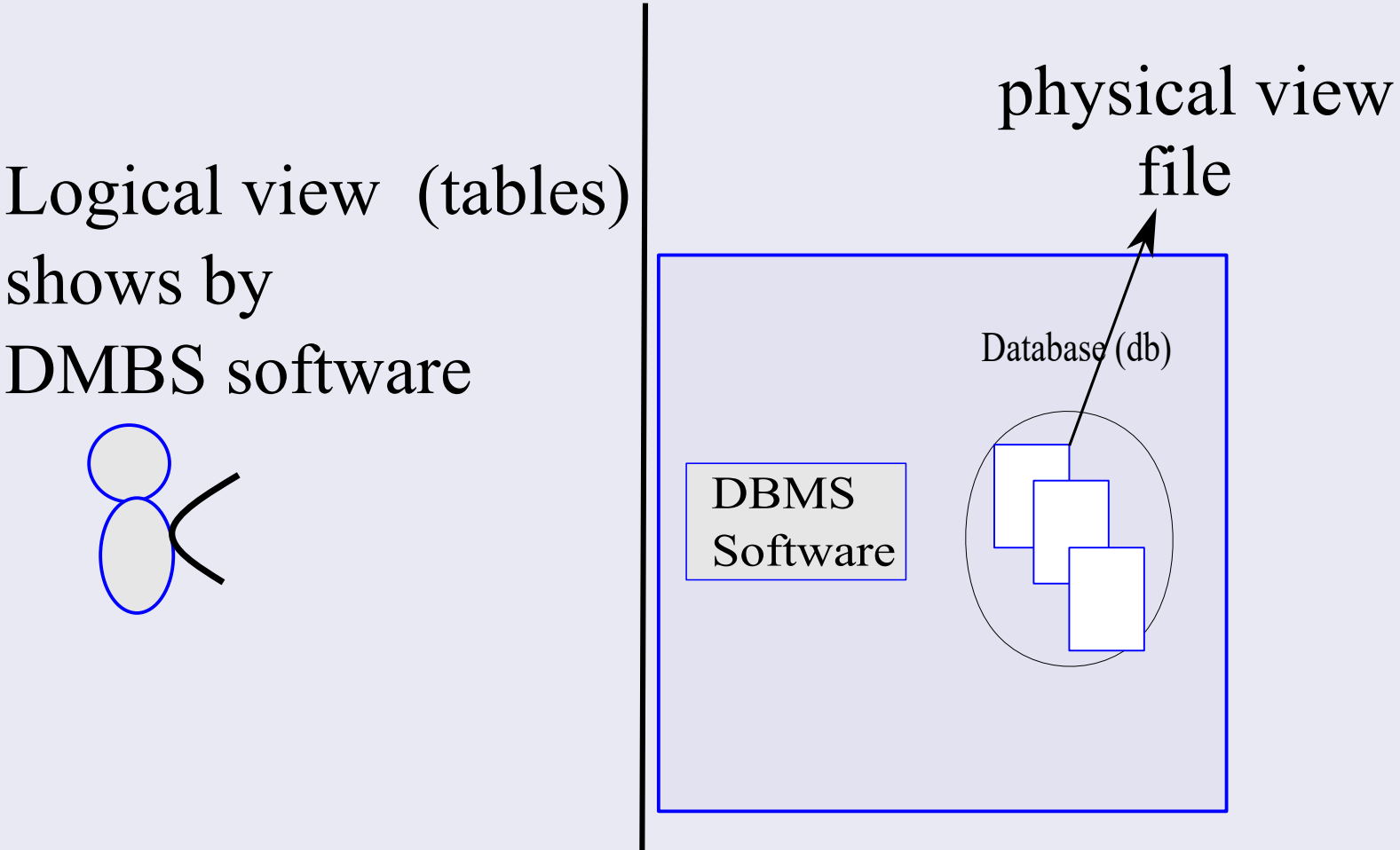

What is RDBMS?

RDBMS

- A Relational Database management System (RDBMS) is a database management system based on relational model introduced by E.F Codd
- In relational model, data is represented in terms of tuples(rows).
- RDBMS is used to manage Relational database

Tables

- Relational database is a collection of organized set of tables from which data can be accessed easily
- Database is a collection of tables (conceptually).
- A table is a collection of data elements organised in terms of rows and columns

Few DBMS Terms

Records

- A single entry in a table is called a Record or Row.
- A Record in a table represents set of related data.

Field

- A table consists of several records(row), each record can be broken into several smaller entities known as Fields

Colums

- A column is a set of value of a particular type.
- Sometimes also known as attribute

Overview of Physical Storage Media

Storage medias classification

- Accessing Speed
- Cost per unit of data
- Reliability

Storage Device Hierarchy

- CPU Registers
- Cache
- Main Memeory (physical)
- Flash Memory
- Magnetic disk
- Optical disk
- Magnetic disk