

Ankaralı Simitçi



21 Eylül 2011



Ankaralı Simitçi

“Son bir yıldır öğle yemeklerini dışarıda yemek durumunda kaldığımızdan işyerinden iki ağabeyimle Tunalı civarlarında yemeğimizi yiyor ve öğleden sonrası için de Tunalı Pasajı karşısındaki köşeden simit alıyoruz.

Yaklaşık on-on beş gündür tezgahın başka birisi tarafından işletildiğini fark etmiştim. Dün bu sefer simidi ben alacağım diyerek, tezgaha gittiğimde simitçi ortalıkta görünmüyordu.

Ben de her tezgahın başında simitçi olmadığında, Türklerin yaptığı refleks ile tezgahın camını açacak ve parayı koyarak iki tane simit alacaktım.

Öyle de yaptım tezgahın sürgülü camını açtım 1 YTL' yi rafa koydum ve tam simitleri alacaktım ki, orada üstüne el yazısıyla bir şeyler yazılmış, müsvedde kağıtları gördüm.



Ankaralı Simitçi

Beni iyi tanıyanlar ne kadar meraklı olduğumu bilirler;
"Yahu bu da nedir, ne yazmış bu adam acaba, bir bakayım," dedim:

8.10 - 2

8.15 - 1

8.21 - 1

8.22 -2



Bunlar
nedir ?

Bu listede öğleye kadar hangi dakikada kaç simit satıldığı yazıyordu.

Sonra bu listenin altına **13:55 - 2** yazıp, ne yazdığımı dikkat etsin diye 2'nin üstüne bir de yıldız koydum ve simitleri aldım.



Ankaralı Simitçi

VERİTABANI tutmaya bayılırım.

"Allah'ım adamdaki bilince bak, veritabanı tutuyor !!!! " dedim.

Ama emin değildim. Belki de belediye böyle bir şeyler istemiştir falan... dedim.

Neyse uzatmayayım, bugün yine aynı simitçiye uğradım, bu sefer oradaydı. Nasılsın, iyi misin, hoşbeşinden sonra,

" 13:55 simitlerini toplama ekledin mi ? ☺ " diye sorunca:

"Abi sen miydin o ? ☺ " diyerek gülümsemeye başladı



Ankaralı Simitçi

"Neden böyle bir liste tutuyorsun?" diye sordum,
"Belediye mi istiyor?"

"Yok abi, ben 15 gün önce aldım bu tezgahın işletmesini, henüz yabancıyım müşterinin" dedi.

"Bunları dakika dakika yazıyorum, **hangi saatlerde müşteri yığılıyorsa**, ona göre sıcak simit getireceğim, o gün sabahın simidi akşama kaldı, utandım müşteriden"

deyince ellerine sarılıp öpmek geldi içimden.

İster **CRM** (*Customer Related Management*) deyin, ister **PR** (*Public Relation*), isterseniz de **Marketing Research**...



Ankaralı Simitçi

Ben simitçinin yaptığı işten kendime mesaj çıkarmazsam ölürdüm.

Ne mi çıkardım?... Yok, o kadar da uzun boylu değil, her şeyi de yazacak değilim ya!...

Herkesin mesajı kendine...

Artık her simit aldığımda aklıma **VERITABANCI SİMİTÇİ** gelecek.

Zeka, işine saygı, kar arttırma bilinci.....

Hepsinin sonucunda oluşturulan gerçek katma değer , farklılaşarak rakiplerinden ayrılma ve öne geçme.....”



DATABASE

Öğr. Gör. Evgin GÖÇERİ

Eylül, 2014

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- What is database?
- DBMS
- Database vs. File System
- Data Models
 - E/R Model
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 - Hierarchical Model
- Types of Databases
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 - Distributed DBMS
- Actors on Scene
- Database Development Process

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- Relational Algebra
- SQL
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- Semantic Object Models
- DB Applications Using Internet Technology

- Special Topics
- Projects

Database ???



- Employment Records



- Medical Records



- Registration to School

- Library Research

Database ?

- A collection of related data
- A random assortment of data can not be referred to as a database
- Thus, a database is a logically coherent collection of data

A DATABASE

- A DATABASE is Self-Describing (metadata)
- Examples of Metadata

Table Name	Number of Columns	Primary Key
Student	4	StudentNumber
Adviser	3	AdviserName
Course	3	ReferenceNumber
Enrollment	3	StudentNumber, ReferenceNumber

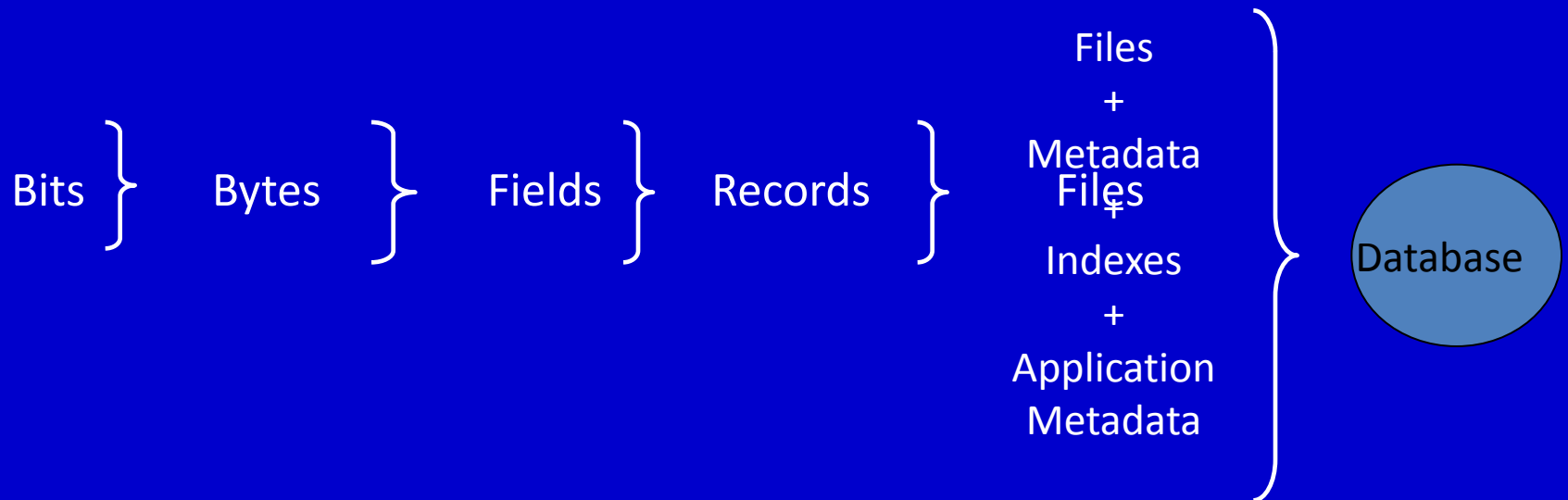
SysTables Table

Column Name	Table Name	Data Type	Length*
StudentNumber	Student	Integer	4
FirstName	Student	Text	20
LastName	Student	Text	30
Major	Student	Text	10
AdviserName	Adviser	Text	25
Phone	Adviser	Text	12
Department	Adviser	Text	15
ReferenceNumber	Course	Integer	4
Title	Course	Text	10

SysColumns Table

A DATABASE

- A DATABASE is A Collection of Integrated Records



Example

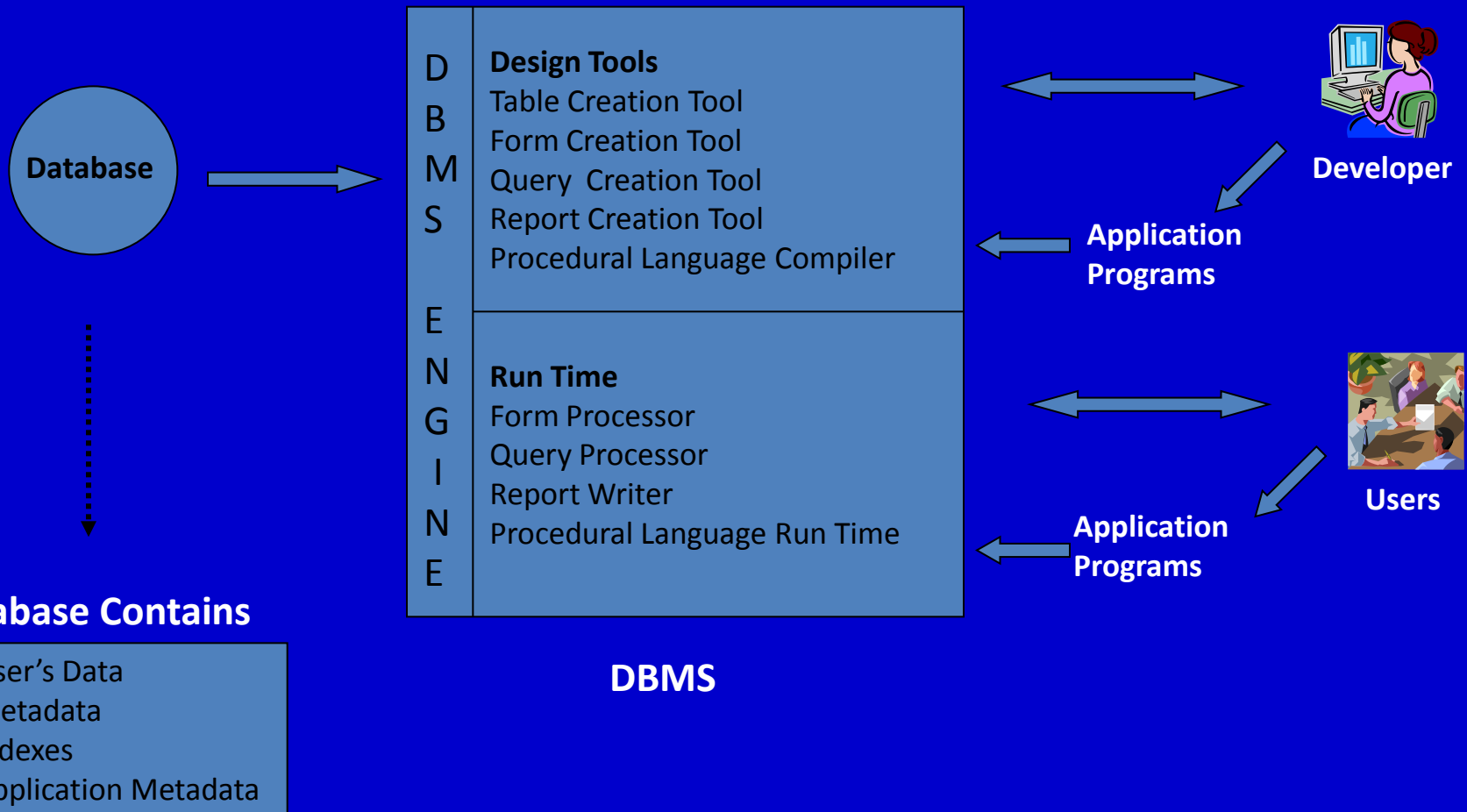
<u>Student Name</u>	<u>Student Phone</u>	<u>Adviser Name</u>	<u>Adviser Phone</u>
Baker, Rex	232-8897	Parks	236-0098
Charles, Mary	232-0099	Parks	236-0098
Johns, Beth	232-4487	Jones	236-0110
Scott, Glenn	232-4444	Parks	236-0098
Zylog, Frita	232-5588	Jones	236-0110

Example

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<u>Adviser Name</u>	<u>Adviser Phone</u>
Parks	236-0098
Jones	236-0110

Components of Database Systems



DBMS-1

- A collection of programs that enables users to create and maintain a database
- A DBMS facilitates the process of defining, constructing and manipulating databases for various applications

DBMS-2

- Access Control (don't authorize illegal access)
- Backup/Recovery (automatically)
- Concurrency Control

DBMS-3

- Disadvantages

Higher programming cost

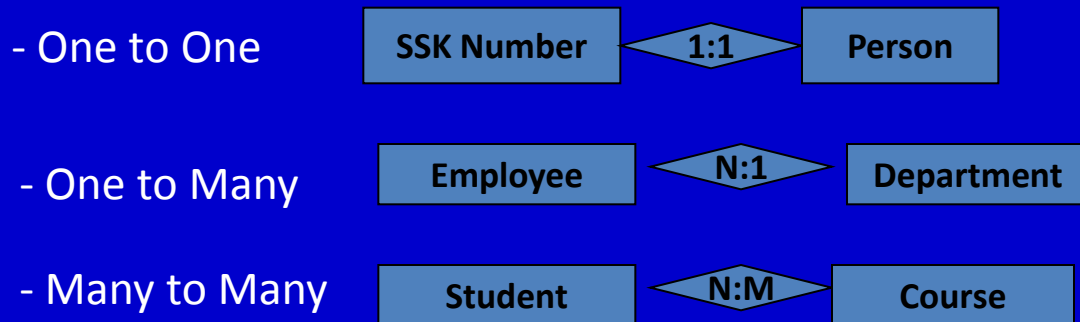
Higher hardware cost

Databases vs. File Systems

- Sharing of data
- Control of redundancy
- Better data security
- Faster development of new applications
- Better data accessibility
- More control over concurrency
- Program-data independence
- Data abstraction

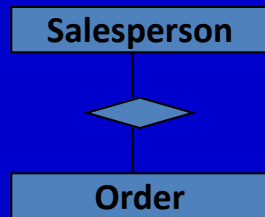
Term Explanations - 1

- **Entity**: An object in the real world that is distinguishable from other objects such as; Student, Employee
- **Attribute**: A property or a description of an entity
- **Domain**: A set of possible values for an attribute
- **Relationship**: An association among two or more entities

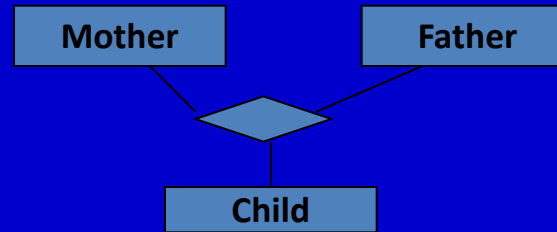


Term Explanations - 2

- A **degree** of a relationship is the number of entities in the relationship

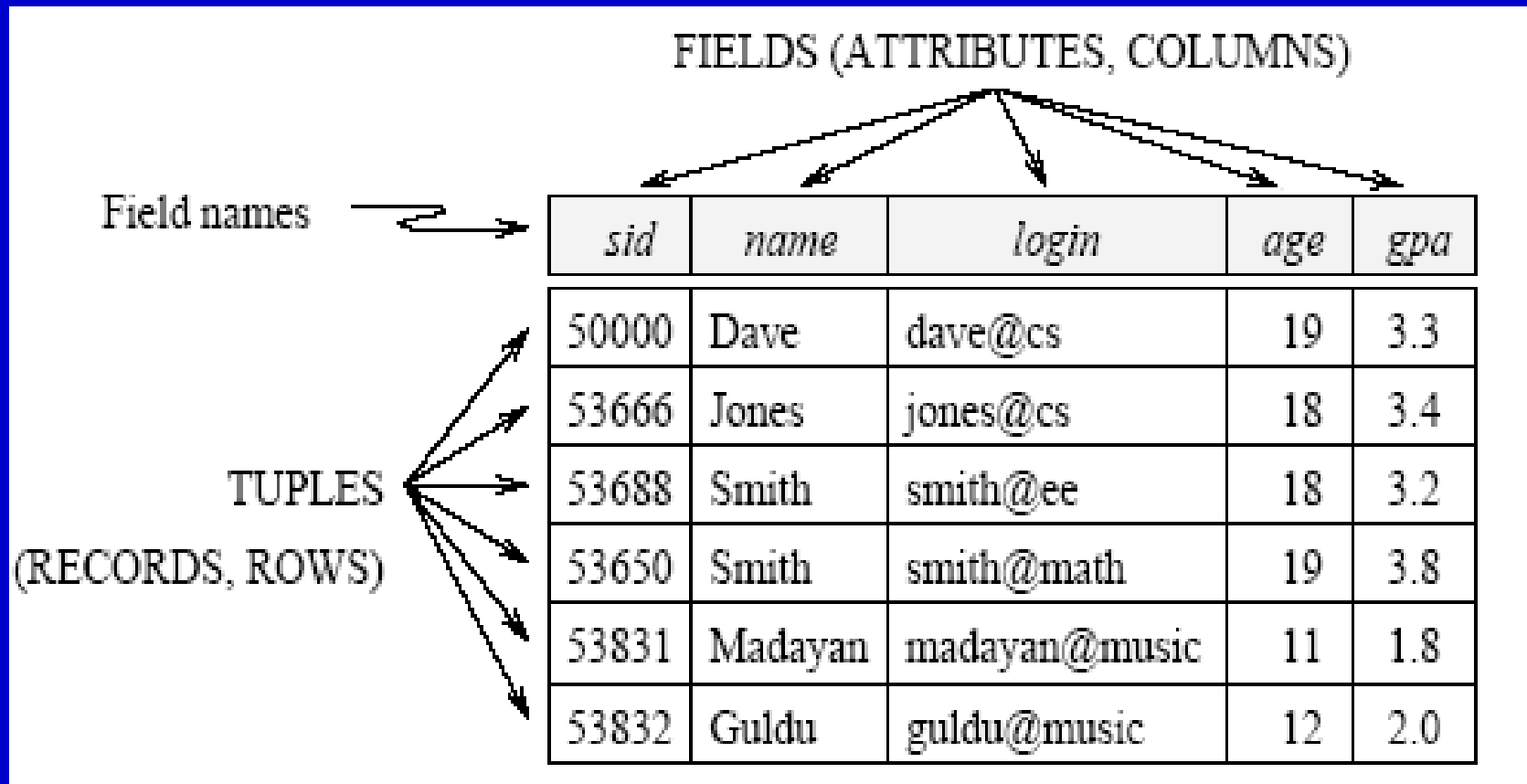


Degree:2 (Binary Relationship)



Degree:3 (Ternary Relationship)

Term Explanations - 3

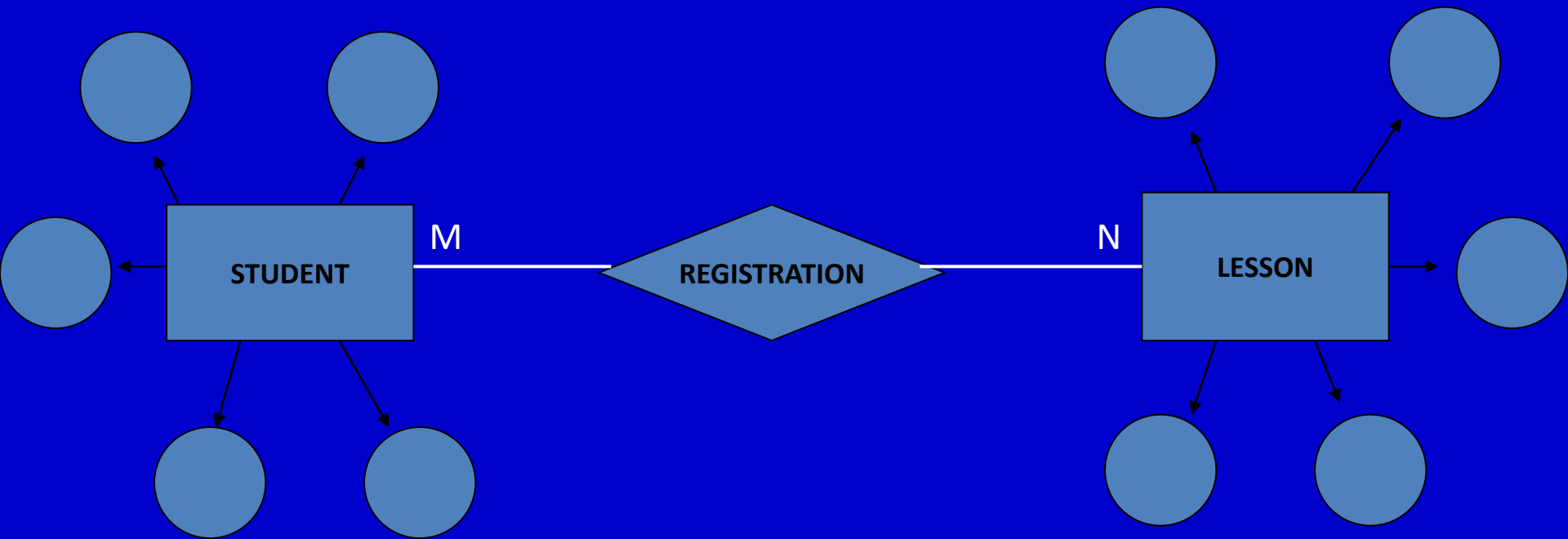


Data Models

- The Entity-Relationship
- Relational Model
- Network Model
- Hierarchical Model

Entity-Relationship Model

- The logical structure of a database can be expressed graphically by an E/R diagram



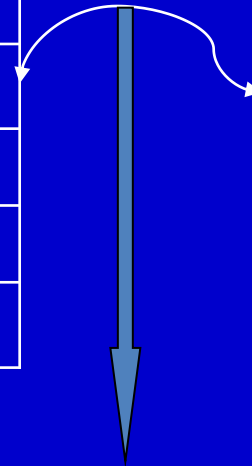
Relational Model-1

- Data Structure is table (Represents data and relationships among data by a collection of tables)
- Integrity Rules (Entity Integrity, Referencial Integrity)
- *Degree of a relation (number of column)*
- *Cardinality of a relation (number of row)*

Relational Model-2

<u>Name</u>	<u>Street</u>	<u>City</u>	<u>Number</u>
Lower	Maple	Queens	900
Shiver	North	Bronx	556
Shiver	North	Bronx	647
Hodges	Sidehill	Brooklyn	647

Degree:4
Cardinality:4



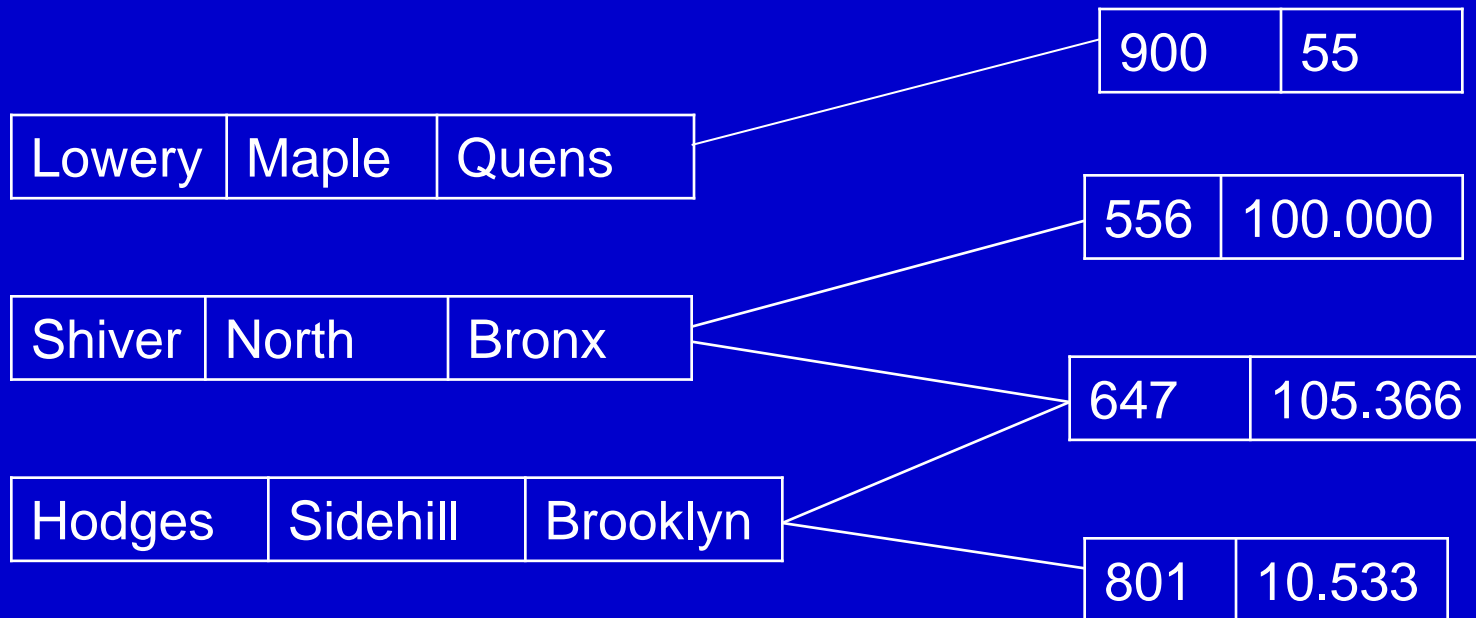
<u>Number</u>	<u>Balance</u>
900	55
556	100.000
647	105.366
801	10.533

Degree:2
Cardinality:4

Network Model-1

- Directed Graphs
- Data are represented by collections of records and relationships among data are represented by links which can be viewed as pointers

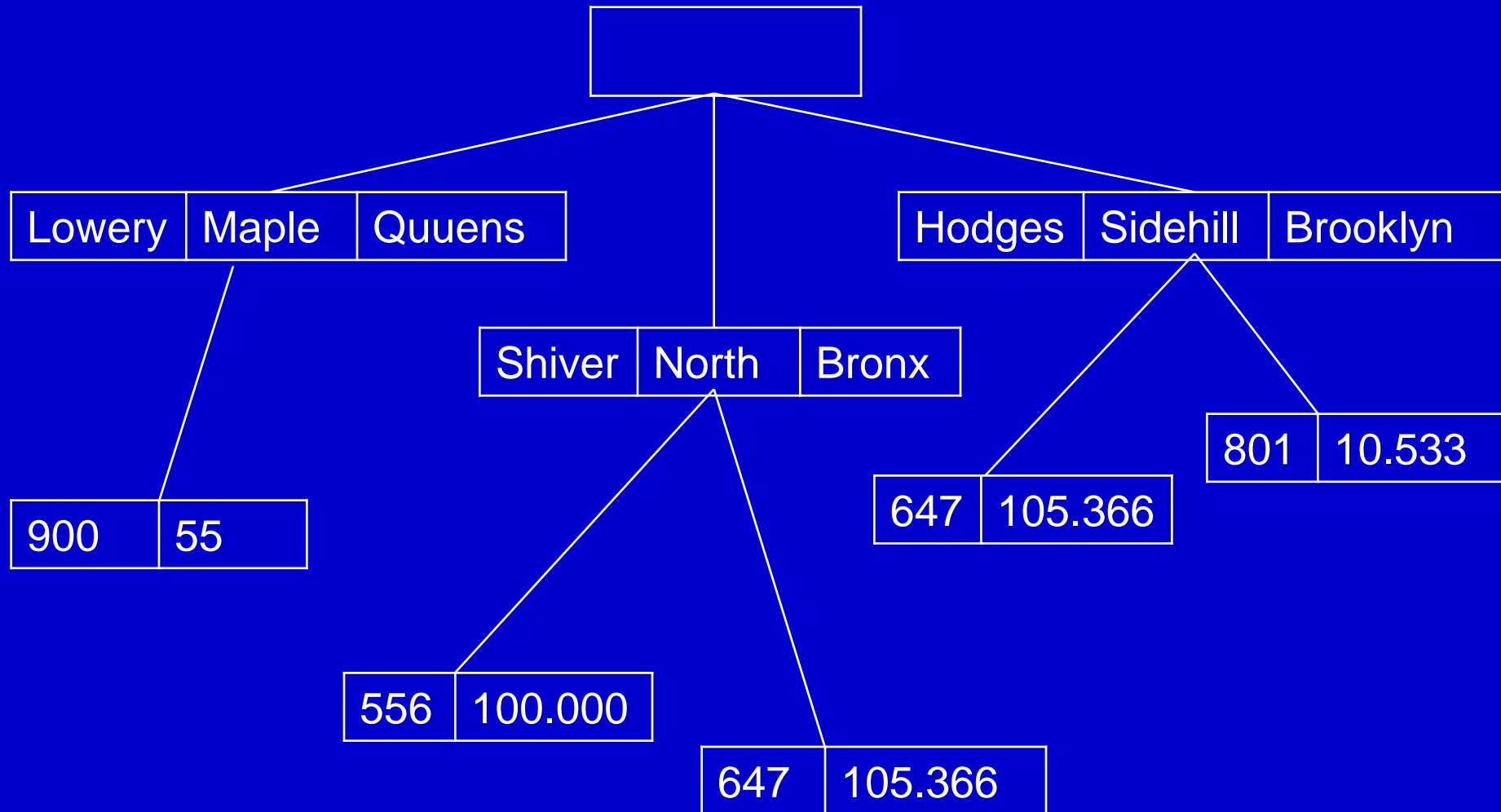
Network Model-2



Hierarchical Model

- Similar to the network model in the sense that data and relationships among data are represented by records and links respectively
- Differs from the network model in that the records are organized as collections of trees rather than directed graphs

Hierarchical Model-2



Exercises

Student Table

<u>Stuid</u>	<u>Stdname</u>	<u>Major</u>	<u>Credits</u>
S1001	Smith,Tom	History	90
S1002	Chin,Ann	Math	36

Course Table

<u>Courseid</u>	<u>Title</u>	<u>Prof</u>	<u>Room</u>
ART103	Int.to Art	Adams	H221
CSC201A	Programming	Tanaka	M110

Draw Data Models(Relational, Network, Hierarchical) for the tables

- Explain how to find a grade of a student
- Explain how to find the names of all the students enrolled in ART103A
- Explain how to find the titles of all the courses taken by the student S1001

Types of Databases

- Centralized
 - Personal Computer
 - Central Computer
 - Client/Server
- Distributed
 - Homogenous
 - Heterogeneous

Centralized DBMS

- All data are located at a single site
- Provide greater control over accessing and updating data than distributed databases

Centralized DBMS

Personal Computer Databases

- Normally have a single user
- Relatively simple to develop and use
- Typical applications
 - simple accounting
 - inventory management
 - customer billing

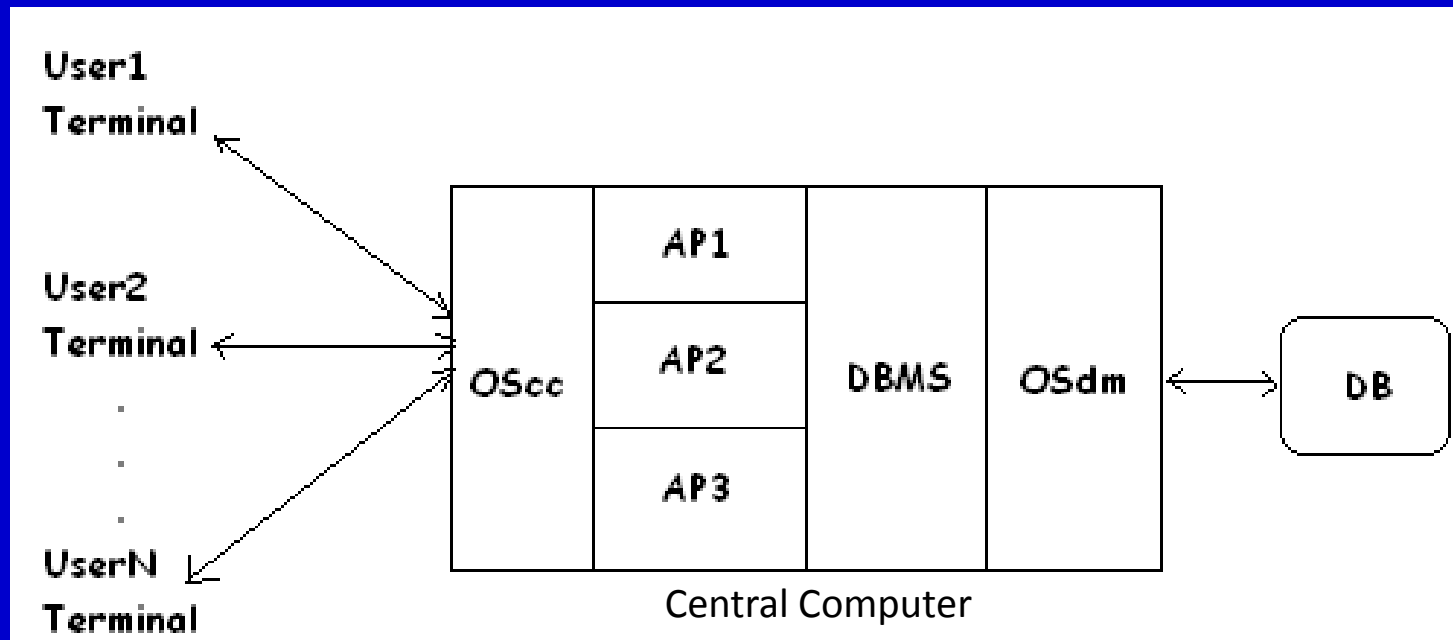
Centralized DBMS

Central Computer Databases-1

- There exists a central computer
- Database can only be accessed through the central computer
- Usage is often intense with several thousand transactions per second
- Typical applications
 - airline reservation systems
 - financial institutions
 - express delivery companies

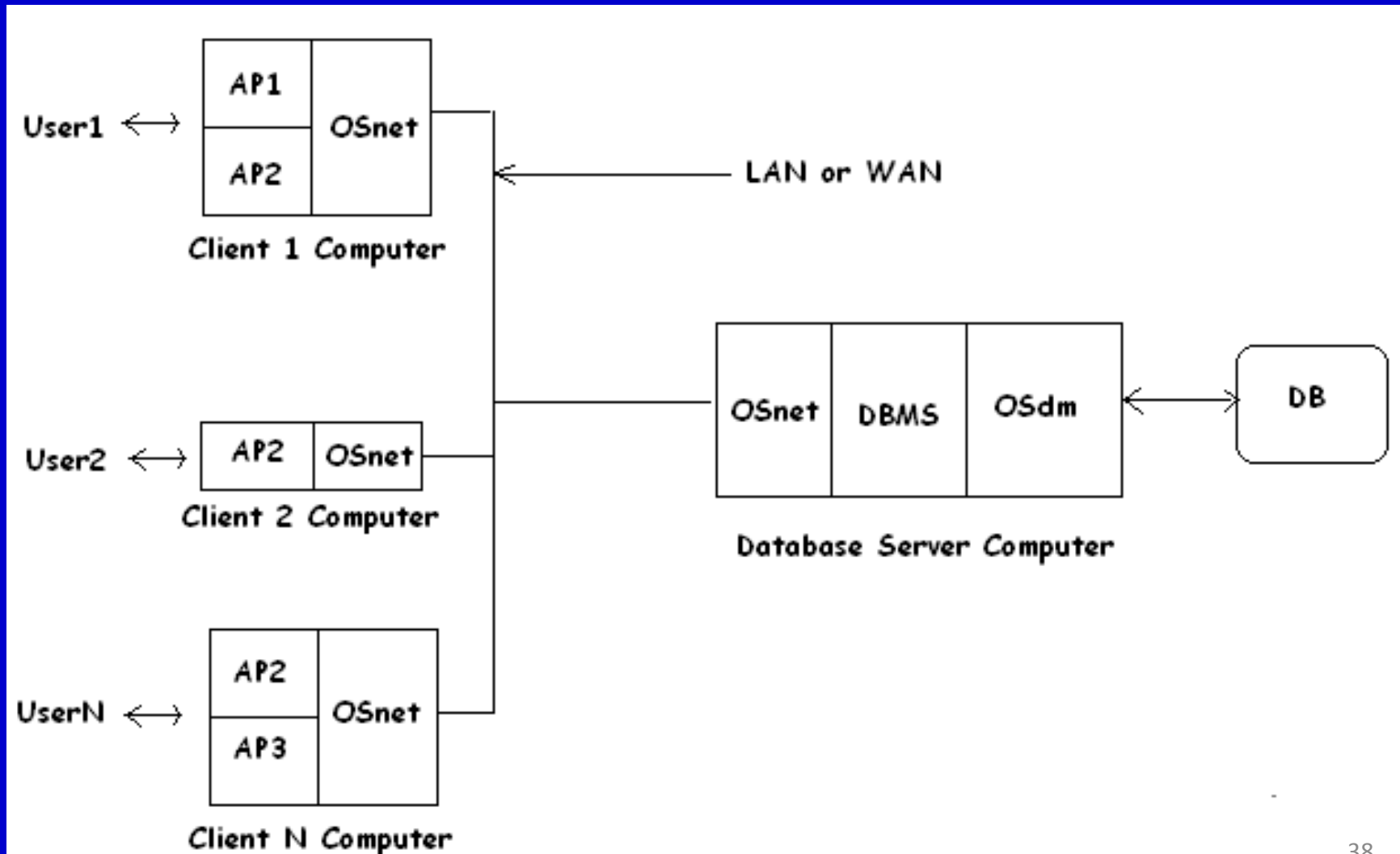
Centralized DBMS

Central Computer Databases-2



Centralized DBMS

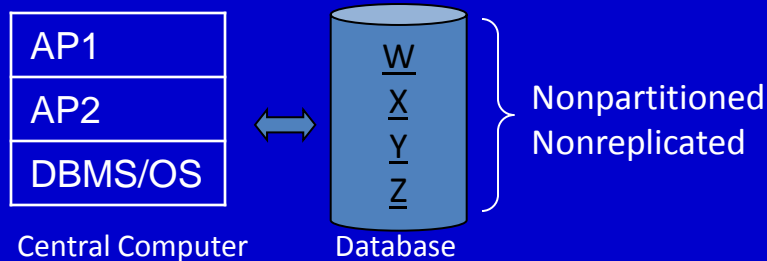
Client/Server Databases



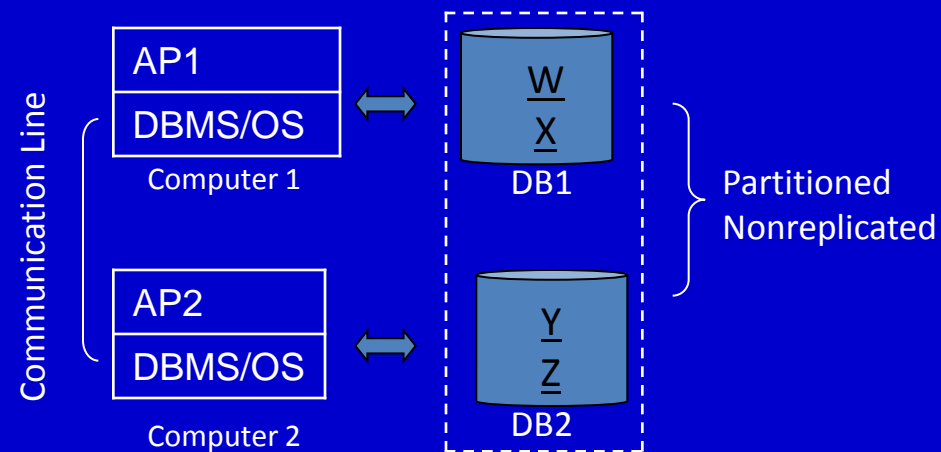
Distributed Database

- A distributed database is a single logical database that is physically distributed on several computers

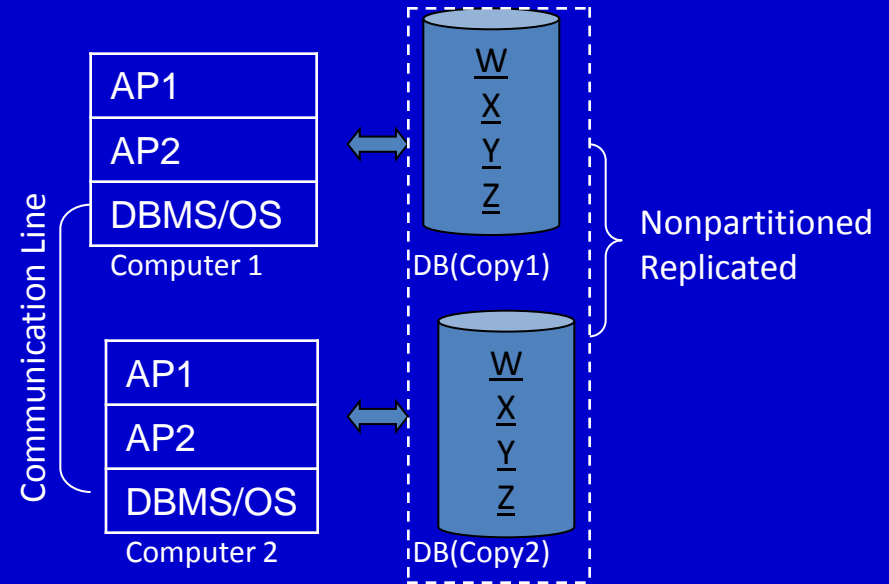
Types of Distributed Databases



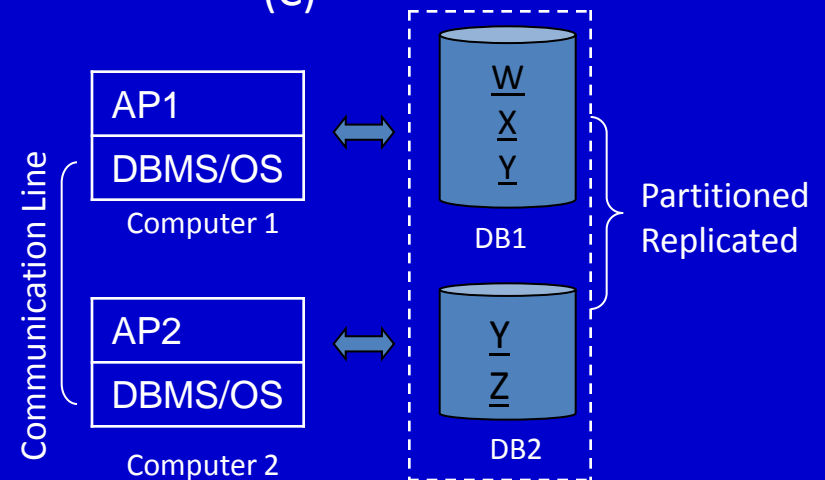
(A)



(B)



(C)



(D)

Distributed Databases

Homogeneous Databases

- The computer operating systems are the same
- The data models are the same
- The DBMSs are the same
- The data at the various locations have common definitions and formats

Distributed Databases

Heterogeneous Databases

- Different computers and operating systems, data models and DBMSs may be used at each of the location

Actors on the scene

- Database administrators(DBA)
- Database designers
- End users
- System analysts and application programmer

Database Administrators

- **Managing the Database Structure**
 - Assist in the requirements stage and evaluation of alternatives
 - Play an active role in database design and creation
 - Develop procedures for integrity and quality of database data
 - Be prepared for problems after changes are made
 - Maintain documentation
- **Managing Data Activity**
 - Establish and maintain data dictionary
 - Establish data proponents
 - Work with data proponents to develop data access and modification rights
 - Security and authorization
 - Data availability and recovery from failure
- **Managing the DBMS**
 - Generate database application performance reports
 - Investigate user performance complaints
 - Modify database structure
 - Evaluate and implement new DBMS feature

Database Designer

- The responsibility for identifying the data to be stored in the database and for choosing appropriate structures to represent and store this data
- Communicate with all prospective database users in order to understand their requirements and come up with a design that meets these requirements

End Users-1

- Casual end users
 - Occasionally access the database
 - Are typically middle or high level managers
- Naive or parametric end users
 - sizable portion of the database end users
 - use standard types of queries

End Users-2

- Sophisticated end users
 - engineers, scientists, business analysts
 - complex requirements

System Analysts and Application Programmers

- System Analysts
 - Determine the requirements of end users especially parametric users
 - Develop specifications for transactions that meet these requirements
- Application Programmers
 - Implement these specifications as programs, then test, debug, document and maintain these programs

Database Development Process

- Planning
- Analysis
- Desing
- Implementation

Term Explanations-2

- Primary Key
- Candidate Key
- Superkey
- Foreign Key

SSK number can be
P.K or C.K

?

Which one should be P.K,
T.C. identification number or
student number for the same
table

?