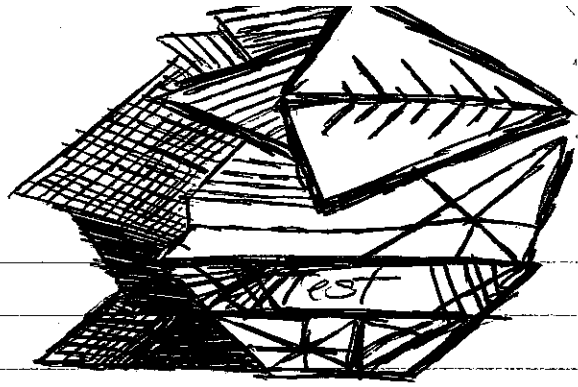
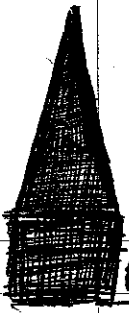


Stenati Horiates



MIDTERM 9/26 WEDNESDAY

5 problems

3 points per problem

1 problem of practice test.

1a. Universe of Discourse

- miniworld.

- representation of ~~something~~ something in the real world.

1b. Data

- Informative of some inherent meaning.

1c. Parametric User

- naive,

- User who primarily does queries & basic transactions on DB w/out any knowledge of how DB info is stored. Knows basic functions & commands which are used over & over again.

2

CONCEPTUAL DATA MODEL: HIGH LEVEL MODEL. HOW USER PERCEIVES DATA

PHYSICAL DATA MODEL: HOW DATA IS STORED

REPRESENTATIONAL MODEL: EXPOSES USER ~~TO WHAT THE USER WANTS~~
~~TO SEE~~. TO INTERNALS

OBJECT DATA MODEL: OBJECT ORIENTED MODEL.

Too
Vasul
would
get
1/3/13

FRANCIS WAN
Pedro Oñate
Auyen Ma
John Nguyen

③ Three - Schema Architecture

- separates the user applications and the physical database. This architecture possesses data independence, changing schemas without changing higher schema.

3 - Levels involved

① Internal Level has an internal schema, which describes the physical storage structure of the database.

The internal schema uses a physical data model and describes the complete details of data storage and access paths.

② Conceptual Level hides the details of physical storage structures and describes entities, data types, relationships, user operations, and constraints.

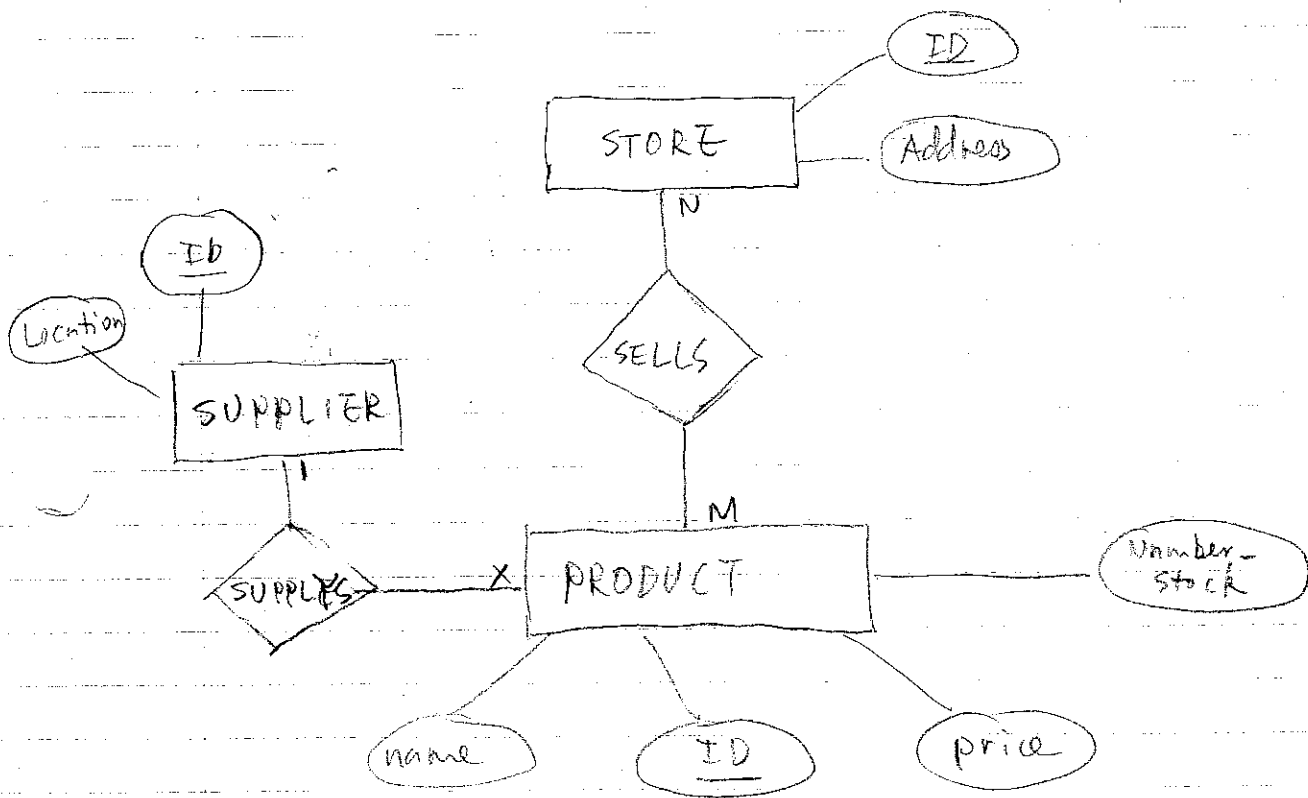
③ The External View is what the end-user sees and interacts with. This view is very specialized to a particular type of user, hiding the rest of the database from that user group.

U. The centralized server architecture has a system (such as a mainframe) which has the entire database (data, software, DBMS) and hardware. Several terminals are able to connect to it, but all of the data resides on the central server.

For the client-server architecture, there is either a two tier or three tier architecture. In both the two tier and three tier architectures, the database of processing is distributed between two or more systems. Additionally, the power client-server architecture allows for a user interface in order to interact w/ the database system.

ex. file server
or print server

5) Each store has a store ID, address
A store sells products.
Each product has a product name, ID, price
and stock number.
Each product also has a supplier.

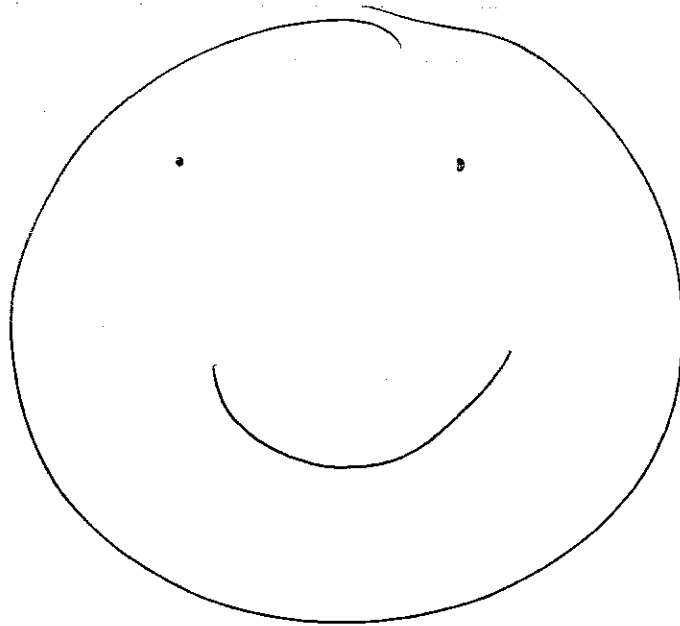
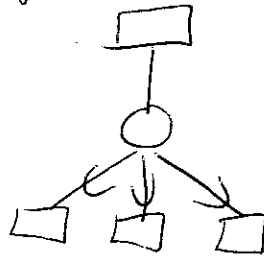


6) $Z = \{S_1, S_2, \dots, S_n\}$ is a specialization of G if each S_i is a subclass of G .

9) The ~~entity~~ entity integrity constraint states that no primary key value can be null. It ensures that we can always find a tuple using its primary key.

Referential integrity constraint is used to maintain consistency between the values in two or more relations.

The foreign key must be a valid primary key appearing in the
for #6) referenced relation or must be null.



#8

R

A B C

1 1 1

1 2 1

2 2 1

knowing A & B fixes the entire row.

knowing just A will not distinguish
row 1 & 2. knowing just B, no way to
distinguish row 2 & 3

ABC is a superkey, but not a key
as B is contained in it and is a key.

~~#9 Entity integrity constraint states no primary
key can be null
The values in Foreign key column must be
valid in the domain of referenced entity~~

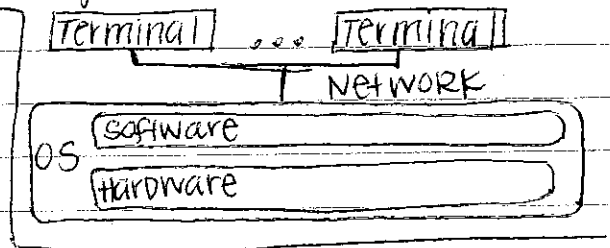
Practice Midterm #1

4. Centralized Server Architecture

- Terminal based; services and applications are all remote
- Essentially, is the mainframe paradigm

Client-Server Architecture

- Applications are local but services are modular & remote
- Developed to handle environments where a large # of PCs, workstations, etc. are connected by a network



10.

Relation intention ^{is the} ~~another word for~~ relational database schema, or $DB = \{R_1, R_2, \dots, R_n\}$ where R_i is a relational schema (collection of schema)

Extension - the actual relation states in the database @ any given time,

$$\text{ie. } S = \{r(R_1), r(R_2), \dots, r(R_m)\}$$

$r(R_i)$ = set of n -tuples in relation $r(R_i)$

First Normal Form - assumes atomic attribute

That is values which appear under a given attribute are indivisible, as far as the database is concerned

Vague