

L-1 / 19.07.2023

four 11w mitzvahit & bnei mitzvahit

L-2 / 24.07.2023

bessig 11w mitzvahit mit 11A

Atomicity → Consistency

A C I D → Durability

Isolation

A ⇒ Atomicity : Failed transaction will be
return.

D = Durability : Backup Power, Backup Server
so that Database never shut.

L-03 / 26.07.2023

DDP

C ⇒ Contenisty ⇒ Amount - need to be match

the fibber From == To

stabilizing

fibber

Seacal-D

Calcium Carbonate (From Coral Source) and
Vitamin D₃ (Colecalciferol)

Seacal-DX

Calcium Carbonate (From Coral Source)
and Vitamin D₃ (Colecalciferol)

$I = Isolation \Rightarrow$ 2nd transaction will not start until 1st transaction complete.

All the transaction will proceed one by one like Queue.

Waiting \leftarrow Transaction

Waiting \leftarrow

L-04 / 02.08.2023 /

④ Kaggle Database for Machine Learning

⑤ JAVA JDBC connector

⑥

DDL & DML

Definition Language Manipulation Language

for schema implementation for modify Data

\Rightarrow Create

\Rightarrow retrieve, insert, delete, modify.

- High Level
- Low Level
- Embedded

From Lecture-2 : slide 15-21 [Not for exam]

studying & on visiting much

ER Model

H.W.: Design a Company Database.

L-5 / 07.08.2023 /

Composite \Rightarrow can be divide in parts

Multi-valued \Rightarrow can't divide in parts

\Rightarrow if dividable, then, multivalued composite.

ER Diagram

two line \Rightarrow compulsory

one line \Rightarrow optional

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L-8/ 02 08.2023 /

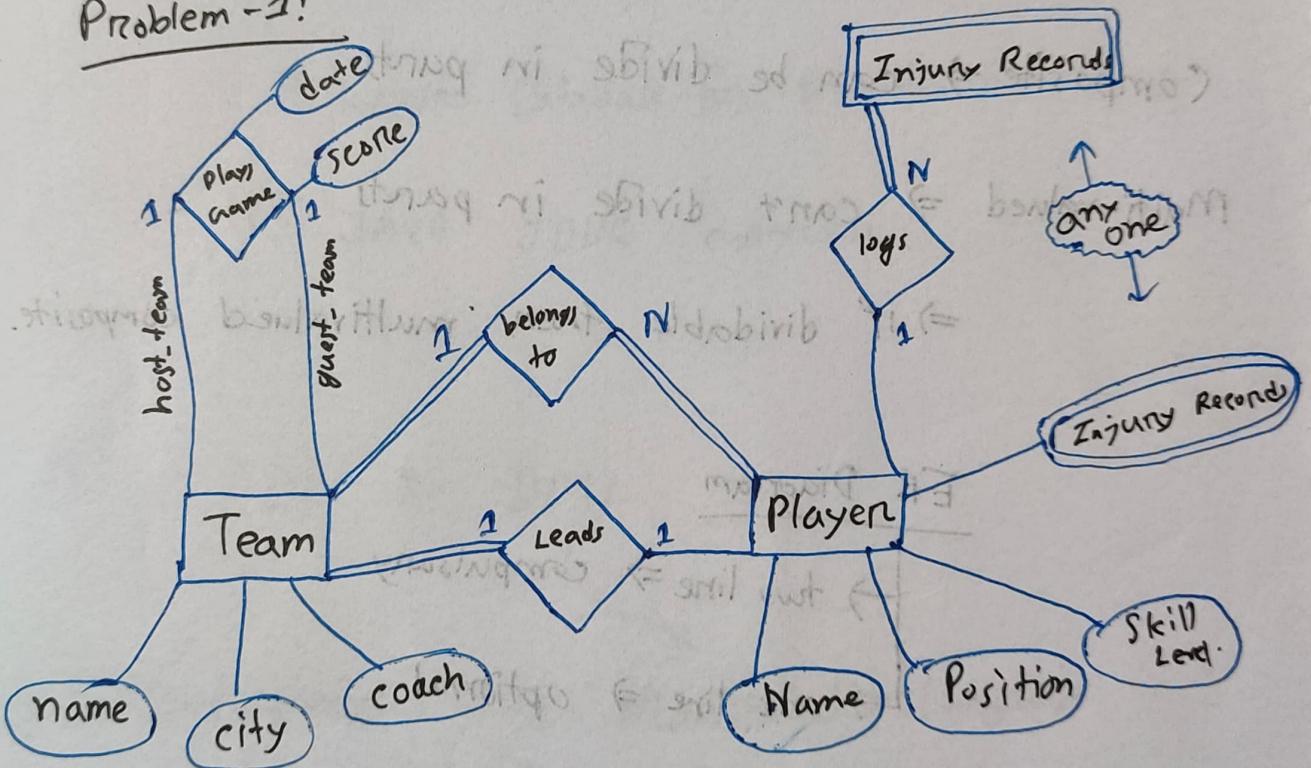
[marks not for] 15-21 skills : Software Engineering from

Weak entity \Rightarrow No key attribute

Derived attributes \Rightarrow not a field, generate
by coding.

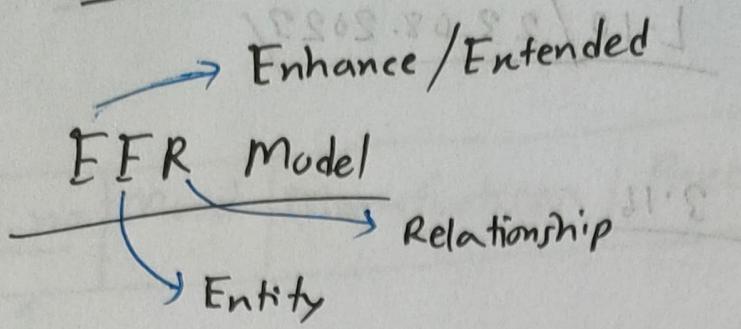
ER Diagram Practice

Problem -1:



Practice more from the slide

L-7 / 14.08.2023 /



Generalization: One superclass from multiple class.

Specialization: Multiple subclass from one superclass.

d \Rightarrow disjointness \Rightarrow can be only one

⊗ Shared sub class \Rightarrow multiple parent

L-8 / 16.08.2023 /

Not attendant

L-9 / 21.08.2023 /

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L-10 / 23.08.2023 /

Student

<u>SSn</u>	Name	Major	Bdate
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Course

<u>Course #</u>	Cname	Dept
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Enroll

<u>SSn</u>	<u>course #</u>	Quantern	Grade
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Book_Adopt

course #	Quantern	Book-isbn
----------	----------	-----------

23.08.2023 / 8-1

3.17

CAR

Serial-no	Model	Manufacturer	Price
-----------	-------	--------------	-------

Option

Serial-no	Option-name	Price
-----------	-------------	-------

SALE

Salesperson-id	Serial-no	Date	Sales-Price
----------------	-----------	------	-------------

Sales Person

Salesperson-id	Name	Phone
----------------	------	-------

(not unique)

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L-11 / 28.08.2023 /

51.8

Quiz-1

L-12 / 30. 08.2023 /

CAR

Midterm Exam
15. 09. 2023

Relational Algebra

⊗ 6 Basic Operators

AND Operator (Bit wise)

$$A = B \wedge (D > 5)$$

- ⊗ Find out all the rows where instructor id is greater than 20000 and the instructor is not from computer science department.

$$\delta_{ID > 20000 \wedge \text{dept-name} \neq "Comp. Sci"} (\text{instruction})$$

⊗ Π ⇒ Project Operator

⇒ Reduced attribute and remove duplicate tuples from the new relation.

U Union Operation / Intersection operation

- ⊗ arity \Rightarrow number of attribute
- ⊗ Both need to be same arity and same attribute domain.
- ⊗ for union common tuples will not repeat.

⊗ Set Difference Operation (-)

- \Rightarrow same condition as before
- \Rightarrow just like minus operation of a set.

absent due to FAO interview

Δ \cap .
±. ^

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L-14 / 11.09.2023

SQL

→ Standalone Query Language

studios to numbers of cities

*) ALTER TABLE

⇒ constraints can't be NOT NULL

*) FROM ⇒ Do the cartesian product with not

*) WHERE ⇒ Filters out from the product result.

L-15 / 13.09.2023

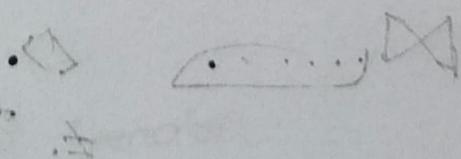
Review Class. I

Next Class Midterm

midterm OR of subtopics

L-16 / 15.09.2023

Midterm Exam

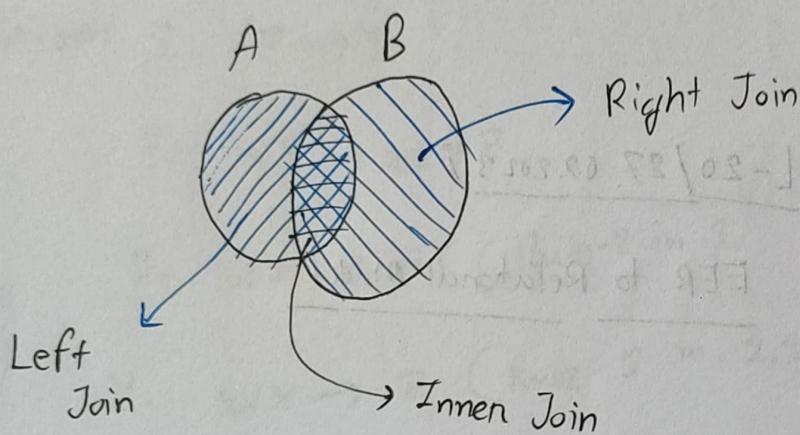


L-17 / 18.09.2023 /

⇒ Set Union

⇒ Nested Query

⊗ Exist worked only for correlated nested query.



Full Join ⇒ All

⊗ Aggregate function

count the tuples.

⇒ MAX, MIN, AVG, COUNT, SUM

⊗ GROUP BY ⇒ "each" contains in question

↳ Use Key Attribute

⇒ HAVING ⇒ Filter from GROUP BY

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L-19 / 25.09.2023 /

Therap
Grit Hub

ER to Relational Model

↓
7 Step

1 Question Must
in
Final

⊗ N-any is not needed for exam.

L-20 / 27. 09.2023 /

EER to Relational Model

Step - 8 :

8(a) : Applicable for all

8(b) : for total relation only

8(c) : Not applicable for overlapping

8(d) : Use True False value.

L-21 / 02.10.2023 /

Solved Question from Practice Slide

L-22 / 04.10.2023 /



Given

$$1. X \rightarrow Y$$

$$2. WY \rightarrow \cancel{YZ}$$

$$3. WX \rightarrow WY \text{ (Rule-2 in 1)}$$

$$4. WX \rightarrow Z \text{ (Rule-3 in 2,3)}$$



$$1. X \rightarrow YZ$$

$$2. YZ \rightarrow Y \text{ (IR1 on 1)}$$

$$3. X \rightarrow Y \text{ (IR3 on 182)}$$

$$4. YZ \rightarrow Z \text{ (IR1 on 1)}$$

$$5. X \rightarrow Z \text{ (IR3 on 184)}$$

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L-23 / 09.10.2023

Done some practice from
practice slide

L-24 / 11.10.2023

Practice from slide

a. Already in 1NF

b.

Student (Student-ID, Sname, CGPA)

Project (Project-ID, Pname, Course-Code, CTitle, Semester)

Student-Project (Student-ID, Project-ID, score)

c.

Student (Student-ID, Sname, CGPA)

Project (Project-ID, Pname, CourseCode, Semester)

Course (Course-code, CTitle)

Student-Project (Student-ID, Project-ID, score)

⊕ Must draw the relation of FK & PK.

Addition:

FDU: Score \rightarrow Student_ID

$$\begin{array}{l} x \rightarrow y \\ y \rightarrow z \\ \therefore x \rightarrow z \end{array} \quad \left| \begin{array}{l} \text{but here } x \rightarrow y \\ \qquad \qquad \qquad y \rightarrow z \end{array} \right\} \text{Not transitive}$$

General Defn of 3NF:

- i) (Super key) $x \rightarrow Y \Rightarrow$ False
- ii) $x \rightarrow (\text{Prime Attribute}) Y \Rightarrow$ True

Then already satisfy 3NF

For BCNF, i) is not exist.

then it doesn't follow BCNF.

$\therefore \text{Score}(\underline{\text{Score}}, \underline{\text{Student-ID}})$

$\text{Student-Project}(\underline{\text{Project ID}}, \underline{\text{Score}})$

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L-25 / 16.10.2023 /

Search key \leftarrow Primary key

Secondary index \Rightarrow There is some layer (Mediator)

~~every key~~ \rightarrow Must be dense

Index File:

\rightarrow Dense (Every key used as search key)

\Rightarrow Sparse

Good tradeoff \Rightarrow Using Sparse, reffer memory block.

L-26 / 18.10.2023 /

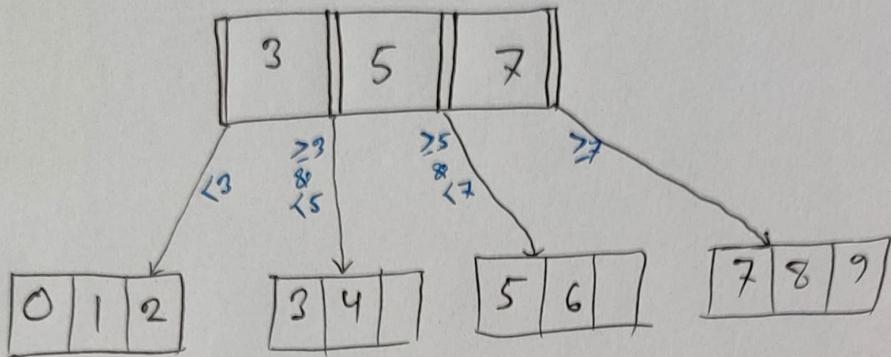
Discuss Quiz Question

And from the slide

L-27 / 30.10.2023 /

④ Difference between database & data structure.

B⁺ Tree



- (X) Key of root node must be available in leaf node.
- (X) Value will not repeat in internal node.
- (X) Pointer count \Rightarrow Order

L-28 / 01.11.2023 /

Short Review Class

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