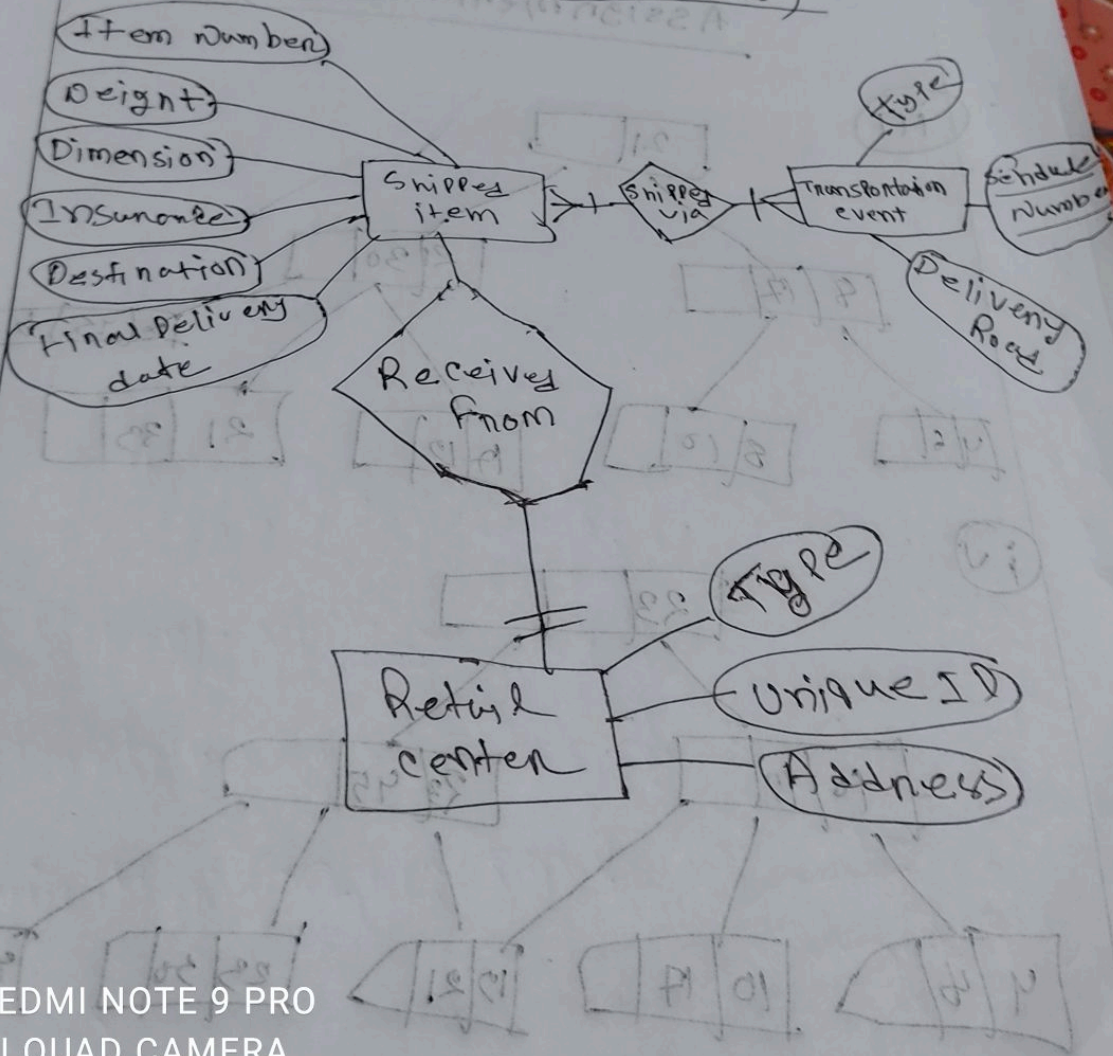


①

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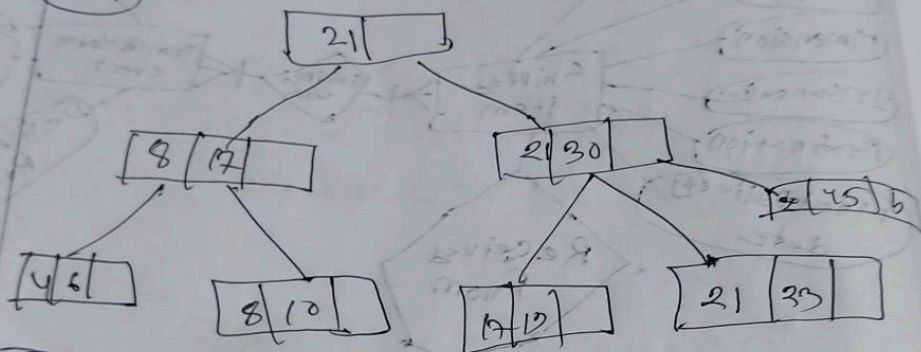
Assignment no-01 (a)



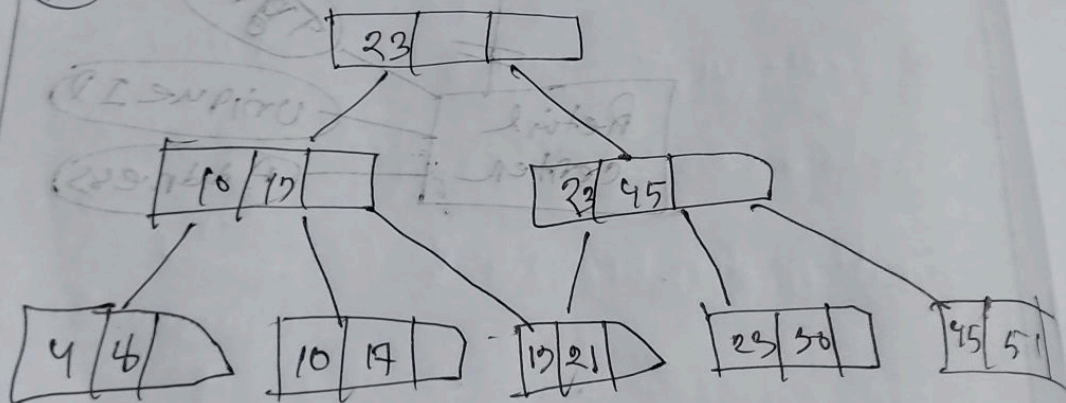
2

Assignment no 12(b)

iii



iv



Assignment no-2 (a)

Given,

The functional dependency is
 $R(A, B, C, D)$

$$F = \{ A \rightarrow B, C, D$$

$$B \rightarrow C$$

$$A \rightarrow B$$

$$AB \rightarrow C$$

$$B \rightarrow D \}$$

i) Hence, Computing some member of F^+ , F^+

ii) Given,

If last digit of $id \% 2 = 0$

Then we find B^+ , otherwise we find

A^+ , Here my $id = 7$

$$\therefore id \% 2 = 7 \% 2 \neq 0$$

So, $A^+ = ABCD$ (P.T.O)

(11)

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(ii) Now,

The canonical cover of F is computing below

Step-1: Applying decomposition rule if possible

$A \rightarrow B$
 $A \rightarrow C$
 $A \rightarrow D$
 $B \rightarrow C$
 $AB \rightarrow C$
 $B \rightarrow D$

Step-2: Check whether $A \rightarrow B$ is necessary or not

$$A^+ = ABCD$$

$$-(A^+) = ACD$$

So, $A \rightarrow B$ is necessary

(P.T.O)

(b)

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Assignment no 2(b)

Multivalued Attribute: A multivalued attribute is an attribute that can be more than one value. It's too easy to add such an attribute to a table without thinking about it. Here's what movie table that contains a column for actors who appear appeared. The movie might look like:

Title	Filmid	Year Reles	Prices	actor
1. Lit of Pie	013	2004	\$1.3	Mr. oh
2. Man of Steel	123	2004	\$2.5	Mr. X
3. Bond	132	2004	\$1.00	James bond



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The multivalued attributes is fairly obvious in this case as its name is plural. so ~~we~~ handle: Extract the value is a new table with Primary key original table.

Film and actor
title
id Film id
year Release
Price
actor

Film
Film id
title
year Release
actor id



actors
actors id
actor

7

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Assignment No-3 (a)

Functional Dependency in the Patient Table

Patient-No \rightarrow Patient-Age, Patient-city
 Doctor-No \rightarrow Doctor-speciality
 Visit-No \rightarrow Patient-No, Visit-Date, Patient-Age, Patient-city
 Visit-No, Doctor-No \rightarrow Diagnosis

3NF

Patient (Patient-No, Patient-Age, Patient-city)

Patient visit (Visit-No, Visit-Date, Patient-No)

Doctor (Doctor-No, Doctor-speciality)

Visit Doctor Diagnosis (Visit-No, Doctor-No, Diagnosis)

(P-H)

Q

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Assignment no-3(b)

From the functional dependencise of Q 3(a) we get

Hospit = (Patient no, Patient Age, Patient-city, doctor-id, doctor-speciality, visit-no, visit date, Diagnosis)

* Patient-no \rightarrow Patient-age, Patient-city

* Doctor-id \rightarrow doctor-speciality

* visit-no \rightarrow Patient-no, Patient-Age, Patient-city, visit-date

* visit no, doctor-id \rightarrow Diagnosis



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ncise

city

visit-no

ty

e

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Now, The closure of

 $\text{Patient-no} \vdash \text{Patient-no, Patient-age, Patient-city}$ $\text{Patient-Age} \vdash \text{Patient-Age}$ $\text{Patient-city} \vdash \text{Patient-city}$ $\text{doctor-Id} \vdash \text{doctor-Id, doctor-speciality}$ $\text{doctor-speciality} \vdash \text{doctor-speciality}$ $\text{visit-No} \vdash \text{visit-no, Patient-no, Patient-Age, Patient-city, Visit-Date}$ $\text{visit-Date} \vdash \text{visit-Date}$ $(\text{Diagnosis}) \vdash \text{Diagnosis}$ $(\text{visit-no, Doctor-Id}) \vdash \text{Diagnosis, visit-no, Doctor-Id}$ Now, $(\text{visit-no, doctor-Id, Diagnosis}) \vdash \text{visit-no, Patient-Age, Patient-city, visit-Date, doctor-Id, doctor-speciality, Diagnosis}$

(P. 4)



18/02/2018

And,
(Patient-No, doctor-Id, visit-Date) \rightarrow Patient-No,
Patient-Age, patient-city, doctor-Id,
doctor-speciality, visit-date, visit-no,
Diagnosis

So, the super key are

(visit-no, doctor-Id, diagnosis) and
(Patient-no, doctor-Id, visit-Date)

Candidate key are

(visit-no, doctor-Id, diagnosis) and
(Patient-no, doctor-Id, visit-Date)

Assignment No. 4 (a)

Process	Process
$\text{Read}(A)$ $A = A - 50$ $\text{write}(A)$ $\text{Read}(B)$ $B = B + 50$ $\text{write}(B)$	$\text{Read}(B)$ $B = B - 10$ $\text{write}(B)$ $\text{Read}(A)$ $A = A + 10$ $\text{write}(A)$

The above schedule maintain the Acid Properties of transaction.

Acid Properties: A transaction is a unit of program execution that access and possibly updates various data items. The above schedule maintains "Isolation" Property of transaction.

Isolation: Although multiple transaction may execute concurrently each transaction

other concurrently executing transaction
Intermediate transaction results must
be hidden from other's transactions.

□ That is, for every pair of transaction
 T_i and T_j it appears to T_i that
either T_j finished execution before
 T_i started or T_j started execution
after T_i finished.

Let T_1 and T_2 be the transaction
defined as T_1 transfer \$50 to
from A to B and T_2 transfer
10% of the Balance B to A.

The following Schedule is not
a serial Schedule but it is
equivalent.

19/02/2019
from Saefun
must
acins.
non Saefun
not
fore
on

19/02/2019	
T ₁	T ₂
read(A) A := A - 50 write(A)	read(B) temp := B + 0.1 B := B - temp write(B)
read(B) B := B + 50 write(B) commit	read(A) A := A + temp write(A) commit



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Assignment no-4 (b)

The above Schedule of 4 (a) conflict serializable because 4(a) next relates to isolation,

Serializability. It is used to keep the data in the data item in a consistent state. It relates to the isolation property of a database transaction.

If each transaction is correct by itself meets certain integrity conditions. then a schedule that comprises any serial execution of these transaction is correct serial means that transaction do not overlap in time and

(f.d)



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Assignment no 4 (b)

Cannot interfere with each other
complete isolation between each other
exists! Any order of the transactions
is legitimate.

Serializable Schedules:

If a given non-serial schedule
of n transactions is a equivalent
to some serial schedule of n
transactions. Then it is called
as a serializable schedule.



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