19MIDOO20

20/9/20

CSI 1001 Principles of Data Base Systems

Set-1

Name: Prashanth.S
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R (A, B, C, D)

2) a) FD_1: {A → B, B → C, A → C}

FD_2: {A → B, B → C, A → D}

CF1 $\{AD\}^+ \Rightarrow \{ABCD\}$

AD ⇒ Super key and candidate key

CF2 $A^+ \Rightarrow \{ABCD\}$

A^+ ⇒ Super key and candidate key

In both FD_1 and FD_2 A is the candidate key.

So definitely FD_1 and FD_2 is a dependency preserving

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2) b) Produced (Producer Name, Title)

Program (theatre name, title, time)

Liked (Viewer, title)

See (viewer, title)

Movies (Title, Director, Actor)

a) Π_{title} [redacted] ($\sigma_{time > 5pm}$ (Program))

$= $ '3 idiots'

b) $\Pi_{producer\ name}$ ($\sigma_{produced.title = liked.title}$ (Produced ⋈ Liked) $\wedge -$ [redacted] σ_{title} [redacted] (Liked.title))

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1) a) Various operators used in relational algebra.

b) Selection (σ)

$\sigma_{loan\ amount > 100000}$ (bank loan)

bank loan

account_no

loan amount

2) Projection (Π)

$\Pi_{customer\_name}$ (customer_detail)

customer_detail

customer id

customer name

iii) AND (∧)

$\sigma_{customer\_name \wedge loan\_amount < 100000}$ (Customer)

customer
customer id
customer name
loan_amount

iv) OR (∨)

$\sigma_{customer\_name \vee loan\_amount < 100000}$ (Customer)

v) Subquery

$\Pi_{customer\_name} \left(\sigma_{loan\_amount < 100000} (customer) \right)$

vi) (joints)

loan
customer-id
loan-amount
loan-date

$\Pi_{loan\_date} \left(\sigma_{customer.customer\_id = loan.customer\_id} (loan \bowtie customer) \right)$

$\Pi_{loan_date} \left(\sigma_{customer.customer_id = loan.customer_id}

vii) Union (∪)

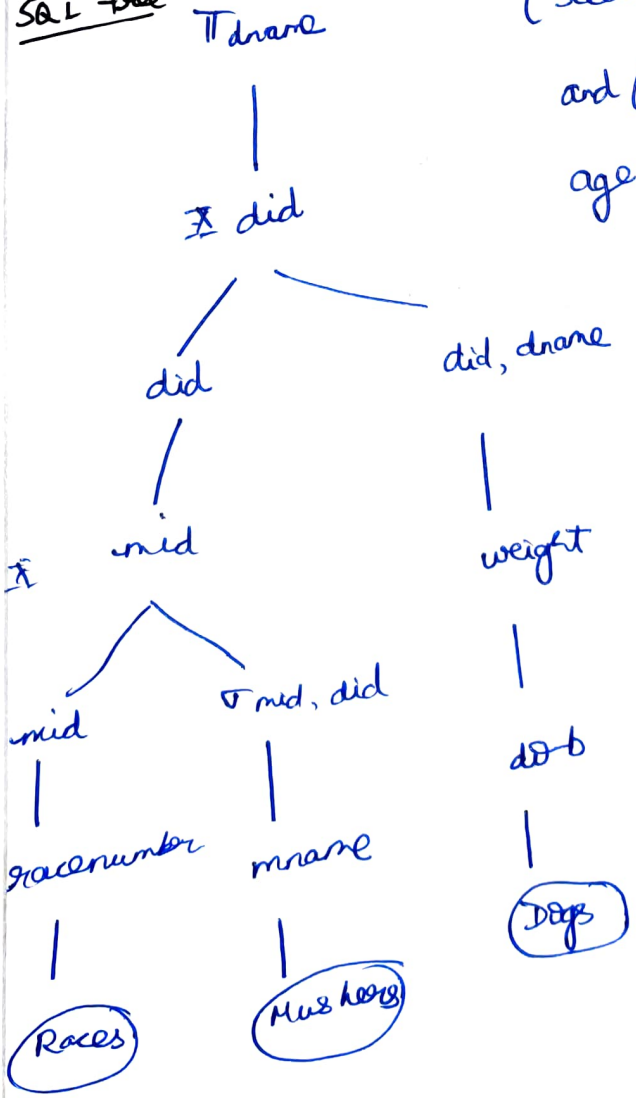
$\Pi_{customer\_id=1} \cup loan\_amount <= 10000$ (customer)

viii) Intersection (∩)

$\Pi_{loan\_amount > 1,00,000} \cap loan\_amount <= 1,10,000$ (customer)

b) SQL query → select dname from Dogs WHERE (select dnames which participated and (select age from Dog where age > 5))

SQL tree



3)

a) Quantity → Name

It holds good. since

1 → Anushka

3 → salman

4 → Simran

5 → Roshan

b) Quantity → model

1 → Rolls-Royce Ghost } It doesn't holds good

1 → Ferrari superfast

c) Model → Name:

Rolls-Royce Ghost → Anushka } It holds good

Ferrari superfast → Anushka

BMW X7 → salman

Audi → simran

Rolls Royce Jaur → Roshan

d) Model → Quantity

~~BMW X7~~ Rolls-Royce Ghost → 1 } It holds good

Ferrari superfast → 1

e) Name → quantity

Anushka → 1

salman → 3 } It holds good

simran → 4

Roshan → 5