

24-03-2020

Computer Science II<sup>nd</sup> Year

Subject - DBMS

2) Project operation :

⇒ This operation shows the list of those attribute that we wish to appear in the result. Rest of the attribute are eliminate from the table.

⇒ It is denoted by  $\Pi$

Notation :-  $\Pi A_1, A_2, A_n (R)$

Where  $A_1, A_2, A_3$  is used as an attribute name of relation  $R$ .

Example :- Customer relation

Name	Street	City
Jones	Main	Harrison
Smith	North	Rye
Hays	Main	Harrison
Curry	North	Rye
Johnson	Alma	Brooklyn
Brooks	Senator	Brooklyn

Input :-  $\Pi \text{ Name, City (customer)}$

Output :-

Name	City
Jones	Harrison
Smith	Rye
Hays	Harrison
Curry	Rye
Johnson	Brooklyn
Brooks	Brooklyn

3) Union operator :-

⇒ Suppose there are two tuples R and S.

The union operator contains all the tuples that are either in R or S or both in R & S.

⇒ It eliminates the duplicate tuple. It is denoted by  $\cup$ .

Notation:  $R \cup S$

A union operation must hold the following condition.

⇒ R and S must have the attribute of the same number.

⇒ Duplicate tuples are eliminated automatically.

Example :-



## Depositor Relation ↓

CUSTOMER - NAME	ACCOUNT. NO
Johnson	A - 101
Smith	A - 121
Mayes	A - 321
Turner	A - 176
Johnson	A - 273
Jones	A - 472
Dindsay	A - 284

## Borrow Relation ↓

CUSTOMER - NAME	LOAN - NO
Jones	L - 17
Smith	L - 23
Hayes	L - 15
Jackson	L - 14
Curry	L - 93
Smith	L - 11
Williams	L - 17

Input :-

$\pi$  Customer - Name (Borrow)  $\cup$   $\pi$  Customer - name (DEPOSITOR)

Output  $\downarrow$

Customer Name
Johnson
Smith
Hayes
Turner
Jones
Lindsay
Jackson
Curry
Williams
Mayes

#### 4) Set Intersection $\downarrow$

$\Rightarrow$  Suppose there are two tuples R and S

The set Intersection operation contains all tuples that are both R and S

$\Rightarrow$  It is denoted by Intersection ' $\cap$ '

Example :- using the above DEPOSITOR and BORROW table

Input :-

$\pi_{\text{CUSTOMER-NAME}}(\text{BORROW}) \cap$

$\pi_{\text{CUSTOMER-NAME}}(\text{DEPOSITOR})$



Output :-

CUSTOMER - NAME
Smith
Jones

5) Set Difference :-

⇒ Suppose there are two tuples R and S.

The Set Intersection operation contains all tuples that are in R But not in S

⇒ It is denoted by Intersection Minus (-)

Notation :-  $R - S$

Example :- using the above DEPOSITOR Table and BORROW Table.

Input :-

$\pi_{\text{CUSTOMER\_NAME}}(\text{BORROW}) - \pi_{\text{CUSTOMER\_NAME}}(\text{DEPOSITOR})$

Output :-

CUSTOMER - NAME
Jackson
Hayes
Williams
Curry

*Shruti*

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