Chapter # 08 Relational Algebra. Date:
* Unary Relational Operations :-
Ochoban St. Aller and K. L. L. S. Aller
O Select operation: Chooses a subset of tuples from a relation
that satisfies a selection condition.
Okselection condition (R)
Unary operator - applied to single relation. Commutative . Degree - its number of attributes
Commulative. Degree - its number of attributes
@ Project operation: Selects certain columns from table
T coutribule l'ist) (R)
Degree - equal to no of attributes in Lattribute list >
Removes duplications, is a set of distinct luples called
duplicate elimination
If projection list is some super key of R is includes key of R, the resulting relation has a same number of
of R, the resulting relation has a same number of
-luples as R.
3 Sequences of operation & Rename Operation:
taines operation of reliable operations
- Inlina expension à an a
-> Inline expression; eg & Trame, Lname, salay (ODNO=5 (emp)
protect of openations of
eg: DEPS_EMP - GNO=5 (Emp)
KESULI & TEname Com I DEPT ENDE
eg: TEMP < Opno- (emp)
(First name) as I am a last
Denoted by P P Arname, Salary) + A Fname, Lname, salary

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Date: _

->	Renames	bálh	relation	3 attributes
		Ps(1	31,82,	,Bn) (R)

-> Renames relation only Ps(R)

P(B1, B2, ..., Bn) (R)

Relations must have same type of tuples cauted Type Compatible.

- Union: RUS Tuples that are either in R or S or in both.

Eliminate duplicate

Result 2

Result | Value | Result | Value |

Result | Result | Value | Value | Result | Va

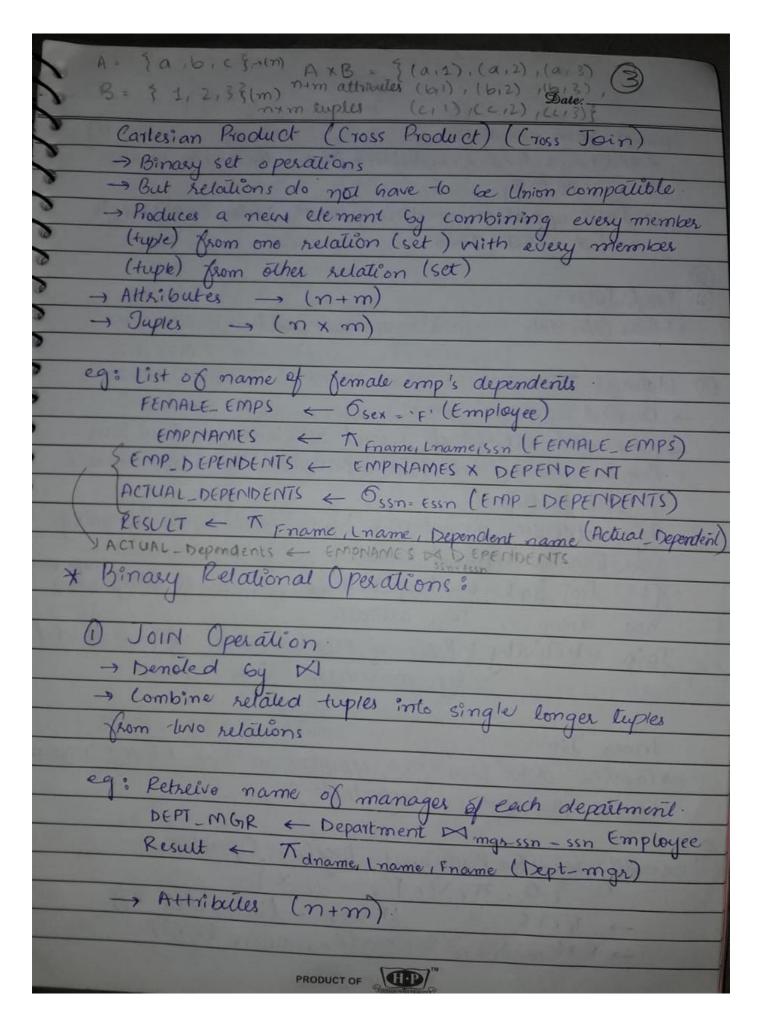
o - Intersection: RNS. Juples that are in Rand S

· - Set Difference: R-S. Juples of R tall yel S.

RUS = SUR and RNS = SNR Union & intersection are commutative as well as associative.

ROS = ((RUS) - (R-S)) - (S-R)

Union all, intersection all except all -> donot eliminate duplicates.



(Y) Date:
General join condition
 Condition > And Condition > And Condition >
- K AND B: 35 9 = 36 38
→ Join operation with general join condition is
called Thela Join.
Equi Join:
→ Where the only comparision operator used is "="
Natural Join:
-> Denoted by *
- Created to get sid of second attribute in Equi Join
- Requires that two join attributes have same name
in both relations.
operation is applied first
eg: Proi deat & Project & P. (Department)
here drum is Join attribute. (Department)
Join selectivity: Ratio of expected sixe of join divided
by maximum sixe nxm.
9nner Jan:
- Combine data from two relations so that related information
can be presented in single-table
Charles and Sentence and Sentence
Complete Set of Relational Algebra Operations:
ξ 6, π, υ, P, -, x 9
$\rightarrow R \cap S = (RUS) - ((R-S)U(S-R))$
$\rightarrow R \cap S = (R \cup S) - ((R-S) \cup (S-R))$ $\rightarrow R \bowtie_{condition} S = 6 <_{condition} (R \times S).$
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