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Practice Assignment Relational Algebra Operations Results

Summer 2 2023

In Class Relational Algebra Operations Results

Table R

COL_A COL_B

A	1
B	2
D	3
F	4
E	5

Table S

COL_A COL_B

A	1
C	2
D	3
E	4

UNION

R UNION S

COL_A COL_B

A	1
B	2
C	2
D	3
E	4

F	4
E	5

INTERSECTION

R INTERSECTION S

COL_A COL_B

A	1
D	3

DIFFERENCE: R – S

COL_A COL_B

B	2
F	4
E	5

DIFFERENCE: S -R

COL_A COL_B

C	2
E	4

CARTESIAN PRODUCT

R CROSS S

R.COL_A	R.COL_B	S.COL_A	S.COL_B
A	1	A	1
A	1	C	2
A	1	D	3
A	1	E	4
B	2	A	1
B	2	C	2
B	2	D	3
B	2	E	4
D	3	A	1
D	3	C	2
D	3	D	3
D	3	E	4
F	4	A	1
F	4	C	2
F	4	D	3
F	4	E	4
E	5	A	1
E	5	C	2
E	5	D	3
E	5	E	4

JOIN

R.COL_A = S.COL_A

R.COL_A	R.COL_B	S.COL_A	S.COL_B
A	1	A	1
D	3	D	3
E	5	E	4

JOIN

R.COL_B = S.COL_B

R.COL_A	R.COL_B	S.COL_A	S.COL_B
A	1	A	1
B	2	C	2
D	3	D	3
F	4	E	4

OUTER JOINS

LEFT OUTER JOIN

R.COL_A = S.COL_A

R.COL_A	R.COL_B	S.COL_A	S.COL_B
A	1	A	1
B	2	NULL	NULL
D	3	D	3
F	4	NULL	NULL
E	5	E	4

RIGHT OUTER JOIN

R.COL_A = S.COL_A

R.COL_A	R.COL_B	S.COL_A	S.COL_B
A	1	A	1
NULL	NULL	C	2
D	3	D	3
E	5	E	4

FULL OUTER JOIN

R.COL_B = S.COL_B

R.COL_A	R.COL_B	S.COL_A	S.COL_B
A	1	A	1
B	2	NULL	NULL
NULL	NULL	C	2
D	3	D	3
F	4	NULL	NULL
E	5	E	4