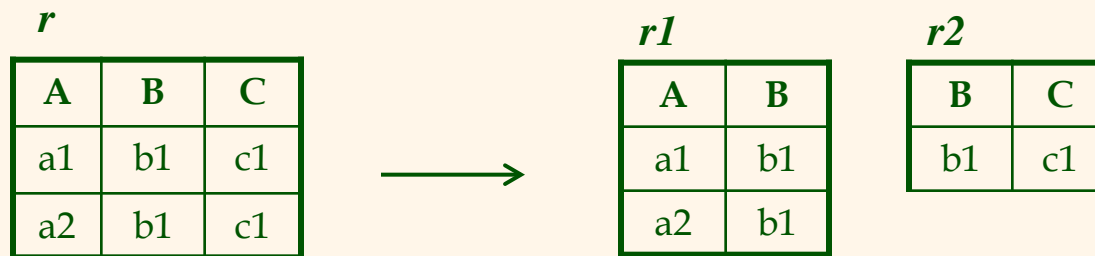# *Example*

❖ Consider $R(A, B, C)$ with FDs $F = \{ B \rightarrow C, AC \rightarrow B \}$

❖ Decomposition $\{ R_1(A, B), R_2(B,C) \}$ is not dependency preserving

- Non-trivial FDs in $F_{R1} = \phi$

- Non-trivial FDs in $F_{R2} = \{B \rightarrow C\}$

- Therefore, $AC \rightarrow B$ is not in $(F_{R1} \cup F_{R2})^+$

- That is, $AC \rightarrow B$ is not preserved

r

A	B	C
a1	b1	c1
a2	b1	c1

$\longrightarrow$

r1

A	B
a1	b1
a2	b1

r2

B	C
b1	c1

- Inserting a new tuple (a1, b2, c1) into r will violate $AC \rightarrow B$

- But inserting (a1, b2) into r1 and (b2, c1) into r2 does not violate any FDs in F_{R1} and F_{R2} respectively

- Need to compute r1 $\otimes$ r2 to detect violate of $AC \rightarrow B$