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} = ϕ
  - Non-trivial FDs in F_{R2} = {B $\rightarrow$ C}
  - AC $\rightarrow$ B is not preserved because it is not in ($F_{R1} \cup F_{R2}$)$^+$

r

A	B	C
a1	b1	c1
a2	b2	c1

r1

A	B
a1	b1
a2	b2

r2

B	C
b1	c1
b2	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 violation of AC $\rightarrow$ B