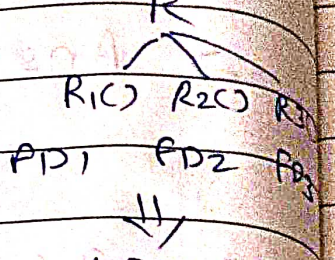
## ① Dependancy Preservation

Ex. let R (A B C D) with functional dependencies
{ A → B, B → C, C → D, D → B }

- R is decomposed into R1 & R2, R3
R1(A B), R2 (B C), R3 (B, D)




| R1(A,B) | R2(BC) | R3 (B D) |
|---|---|---|
| ✗ A → A (trivial not consider) | B → C | B → D |
| ✗ B → B | C → B | D → B |
| ✓ A → B | | |
| ✗ B → A | | |

B+ = {B, C, D}

FD1 U FD2 U FD3

FD+ = { A → B, B → A, B → C, C → B, B → D, D → B }

check with (original) given FD's,

= A → B, B → C, D → B these are directly given

check for C → B,

$C^+$ = { C, B, D }

hence, C → B is preserved

~~B → A,~~

~~check for~~ ↑ , ~~B+ = { B, C,~~

check for B → D,

$B^+$ = { B, C, D }

hence, B → D is preserved.