

$R1(id, classid, gender, manager, salary)$

$R2(id, name)$

$R3(name, age)$

To show if it is loss-less join or not

$R1 \cap R2 \rightarrow R2$

$\Rightarrow id \rightarrow (id, name)$ which is true as $id \rightarrow name$ is present in F^+ .

$R2 \cap R3 \rightarrow R3$

$\Rightarrow name \rightarrow (name, age)$ which is true as $name \rightarrow age$ is present in F^+ .

$R1 \cap R3 \rightarrow R3$

$R1 \cap R3$ is a null set. Thus, $R1 \cap R3 \rightarrow R3$ or $R1 \cap R3 \rightarrow R1$ do not follow.

Thus, the decomposition is not loss-less join.