

Assignment 5 INFO125

1.
 - i. DEPENDENT is in 1NF, because of "birthday" is a partial dependency.
 - ii. Relation R is in 1NF, because "A3" and "A4" has partial dependency.
2. PRODUCT is in 3NF, because it fulfills 2NF and has no transitive dependencies wich makes it 3NF.
3.

DEPENDENT1: Employee_id, Dependent_id, Relationship. {Employee_id, Dependent_id} \rightarrow Relationship

DEPENDENT2: Dependent_id, Birthdate. {Dependent_id} \rightarrow Birthdate
4.
 - i. R1 is in 3NF.
R2 is in 1NF
 - ii. R2 does not fulfill 2NF because it has partial dependency {D} \rightarrow {E, F}, and it does not fulfill 3NF either because it has a transitive dependency.
5.
 - a) Record size = 60
 - b) Blocking factor = 20
 - c) 500 blocks
 - d) Unused space = 0