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BIFX 530

Homework 4

9/29/2022

1. **Consider the student data relation. What form is the relation? Normalize it up to 3NF.**

It is in 1NF. There are partial and transitive dependencies, but no multi-variable attributes.

***2NF Decomposition: Eliminate Partial Dependencies***

GRADE\_2(ClassName, Section, Term, StudentID, Grade)

STUDENT\_2(StudentID, StudentName)

CLASS\_2(ClassName, Section, Term, ProfessorName, Department, ProfessorEmail)

***3NF Decomposition: Eliminate Transitive Dependencies***

GRADE\_3(ClassName, Section, Term, StudentID, Grade)

STUDENT\_3(StudentID, StudentName)

CLASS\_3(ClassName, Section, Term, ProfessorName)

PROFESSOR\_3(ProfessorName, Department, ProfessorEmail)

1. **Consider the employees relation. What form is the relation? What are the dependencies? Normalize it up to 3NF.**

It is in 2NF. There are transitive dependencies, but no partial ones or multi-variable attributes.

***Dependencies***

Emp\_no -> (Ename, Lcode)

Lcode -> Lstatus

***3NF Decomposition: Eliminate Transitive Dependencies***

EMPLOYEES\_3(Emp\_no, Ename, Lcode)

LOCATIONS\_3(Lcode, Lstatus)