

DATABASE DESIGN & DEVELOPMENT

Fall 2023_2024

LAB #: 4 (Normalization)

Student ID:

Student Name:

1- Given the following Employee table answer the following question:

<u>Employee_ID</u>	<u>Employee_Name</u>	<u>Address</u>	<u>Skill_ID</u>	<u>Skill_Name</u>	<u>Skill_Dept</u>	<u>Skill_Level</u>
101	John Smith	123 Main St	1	Programming	CS	Expert
101	John Smith	123 Main St	2	Database	DS	Intermediate
102	Sarah Jaber	456 Elm St	4	Software Engineering	CS	Intermediate
103	Robert Revano	789 Oak St	2	Database	DS	Expert
103	Robert Revano	789 Oak St	3	Networking	CY	Beginner

A. The current schema is in which Normal Form (NF) and why?

B. Normalize the above schema into 3rd NF; please show detailed steps.

2- Consider the following relational schema for a registration system:

Students (Student_ID, Student_Fname, Student_Lname)

Courses (Course_ID, Course_Name, Course_Description, Instructor_ID)

Students_Courses(Student_ID, Course_ID)

Intentionally violate 2ndNF.

3- Consider the following relational schema for a bookstore system:

Books (ISBN, Title, Author_ID, Genre, Publication_Year)

Authors (Author_ID, Author_Name, Nationality, Birth_Year)

Intentionally violate 3rd Normal Form (3NF).