Tutorial 4

Exercise 1:

Consider the "Course" table below from a relational database, which tracks course information:

course_id	course_name	credits	professor	max_students
CS101	Intro to Programming	4	Smith, J	150
MA205	Advanced Calculus	3	Jones, K	60
PH310	Ethics in Tech	3	Smith, J	90
BI401	Molecular Biology	4	Lee, M	45

a. What is the degree of this table?
b. What is the possible domain for the following fields?

- **course_id:**
- **professor:**
- **credits:**

Exercise 2:

Correct the following tables by restructuring the fields to improve data integrity (table properties in a relational model):

- Exercise 1 table: **Course** (**course_id** , **course_name** , **credits** , **professor**, **max_students**)
- **Employees (Employee_ID, Name, Date_Place_of_Birth)**
- **Projects (Project_ID, Project_Name,Project_Description, Budget_euro_dollar)**
- **Library_Book (ISBN, Title, Author_Names, Year_Published)**

Exercise 3:

Give an example domain (the set of permissible values) for each of the following data types:

- **String of characters:**
- **Integer:**
- **Decimal number:**
- **Date:**
- **Boolean:**

Exercise 4:

Assume a scenario where a database needs to manage the sales and inventory of a vinyl record store

Identify:

a. The main entities:

b. Other necessary entities to extract required information (e.g., track song information)

c. The relationships between these entities