**LECTURE 4: Data Model, Schema, and Instances**

**Case Study Question**

A university wants to maintain a database system to manage information about students, courses, and faculty. The following requirements are identified:

* Each **Student** has a *RollNo, Name, Program, and Year of Admission*.
* Each **Course** has a *CourseCode, CourseName, and Credits*.
* Each **Faculty Member** has a *FacultyID, Name, and Department*.
* A student can enroll in many courses, and each course can be taught by one faculty member.

**Questions**

1. **Data Model**:

Identify which **data model** (Hierarchical, Network, Relational, etc.) is most appropriate for this scenario and justify your choice.

1. **Schema**:

Write down the **schema definitions** for *Student*, *Course*, *Faculty*, and *Enrollment* tables.

*(Example: Student(RollNo, Name, Program, YearOfAdmission))*

1. **Instance**:

Provide an **example instance** of the *Student* and *Course* tables with at least 3 records each.

1. **Conceptual Thinking**:

Explain why the schema remains relatively stable in this university database, while the instances change frequently.

How would changes in schema (e.g., adding a new attribute like *Email* in Student) affect the database?