Case Study Scenario:

This case study is to develop a *Course Management System* (CMS) for ABC University. The following are the two use cases for which the database needs to be designed.

*Add Course*

*–* To add the course details into the course management system.

*Retrieve Course*

*–* Retrieve the courses stored in the system and display it.

The courses to be added will have the following attributes Course Code, Course Name, Number of participants, Course Description, Course Duration, Course start date and Course Type.

1. **Requirement #1**: Create a table named “COURSE\_INFO” & “Student\_Info” with following column name, data type, data size, and following constraints,
   * + - COURSE\_CODE – Primary Key
       - COURSE\_NAME – Not null.
       - STUDENT\_ID –primary Key

COURSE\_INFO

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Data Size |
| STUDENT\_ID | varchar | 10 |
| FIRST\_NAME | varchar | 20 |
| LAST\_NAME | varchar | 25 |
| ADDRESS | varchar | 150 |

STUDENT\_INFO

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Data Size |
| COURSE\_CODE | varchar | 10 |
| COURSE\_NAME | varchar | 20 |
| COURSE\_DESCRIPTION | varchar | 25 |
| COURSE\_START\_DATE | Date |  |
| COURSE\_DURATION | int |  |
| NO\_OF\_PARTICIPANTS | int |  |
| COURSE\_TYPE | Char(3) |  |

2. **Requirement # 2:** Create a table Student\_Courses with the following foreign keys:

* + Student\_Id – Foreign key referencing Student\_Info tables Student\_id column.
  + Course Code - Foreign key referencing Course\_Info tables Course\_Code column.

STUDENT\_COURSES

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Data Size |
| STUDENT\_ID | varchar | 10 |
| COURSE\_CODE | varchar | 20 |

3. Create a table for the CMS application where the course fees are maintained.

**Requirement # 3**: Create a table Course\_Fees with the following columns and check constraints,

COURSE\_FEES

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Data Size |
| COURSE\_CODE | varchar | 10 |
| BASE\_FEES | int | 10 |
| SPECIAL\_FEES | int | 10 |
| DISCOUNT | int | 5 |

Add the following constraints,

* Course\_Code - Foreign key referencing Course\_Info tables Course\_Code column.
* Base\_Fees should be greater than 15000
* Base\_Fees should be greater than Special\_Fees.
* Discount should be between 5 and 15 %.