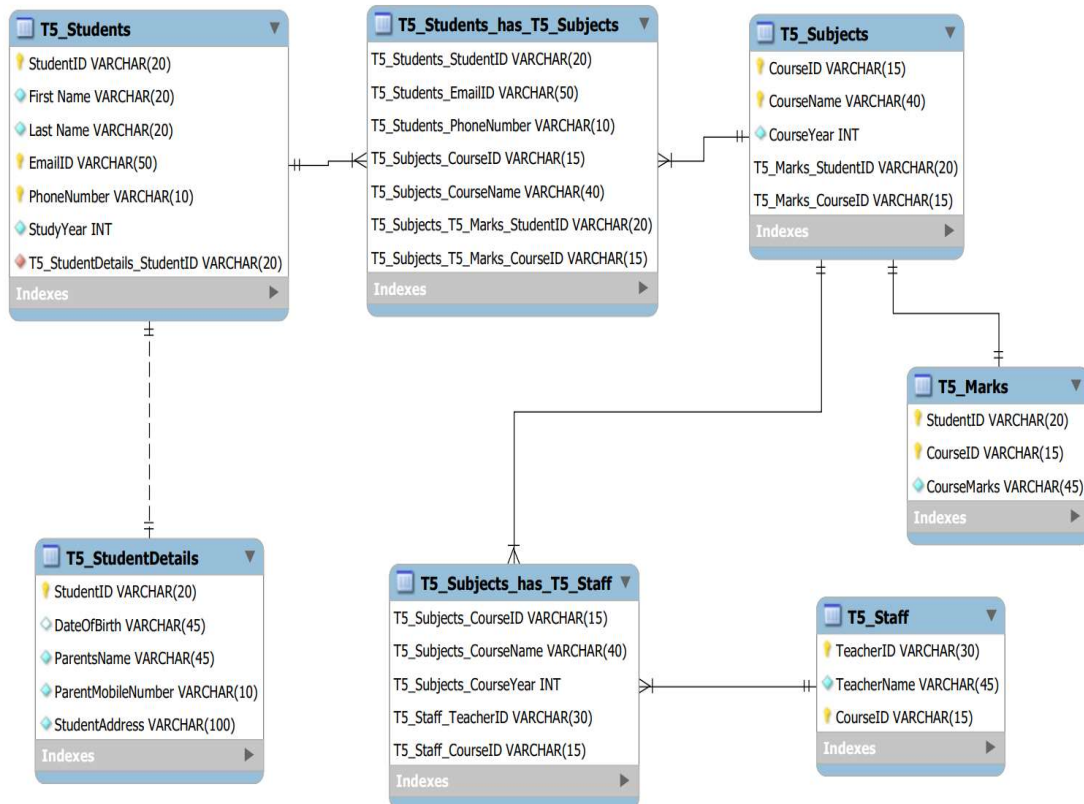# CS210 DBMS LAB ASSIGNMENT-1

**NAME: SOMPALLI AJAY KUMAR**
**REG NO: 19BCS101**
**Group-5**

## Weak Entity

The weak entity in DBMS do not have a primary key and are dependent on the parent entity. It mainly depends on other entities.

## Strong Entity

The strong entity has a primary key. Weak entities are dependent on strong entity. Its existence is not dependent on any other entity.

From the above ER diagram **Weak entity is T5-Marks**, Because it doesn't contain any primary key. It depends on other tables.

Strong entities are T5_Students, T5_Staff it doesn't depend on any other entities.

A **weak or *non-identifying* relationship** exists between two entities when the primary key of one of the related entities does not contain a primary key component of the other related entities. Like **T5-Subjects_has_T5_Staff, T5_Students_has_T5_Subjects.** They don't have a primary key, the entities doesn't contain each other entities. These entities have come from the other two entities which have a primary keys.

A **strong or *identifying* relationship** is when the primary key of the related entity contains the primary key of the "parent". Like **T5_StudentDetails,T5_Marks.**

- **T5_Students** and **T5_StudentDetails ;** and **T5_Subjects** and **T5_Marks** have **one to one relation ship.**

- **T5_Students** and **T5_Subjects; T5_Subjects** and **T5_Staff** has **many to many relationship.**

# Table keys with symols :

**PK**: Primary key
**NN**: Not Null key
**UQ**: unique key

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| StudentID | VARCHAR(20) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| First Name | VARCHAR(20) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| Last Name | VARCHAR(20) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| EmailID | VARCHAR(50) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| PhoneNumber | VARCHAR(10) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| StudyYear | INT | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| T5_Marks_StudentID | VARCHAR(20) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| T5_Marks_CourseID | VARCHAR(15) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| T5_Marks_CourseID | VARCHAR(15) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| T5_StudentDetails_StudentID | VARCHAR(20) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| CourseID | VARCHAR(15) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| CourseName | VARCHAR(40) | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| CourseYear | INT | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| T5_Students_StudentID | VARCHAR(20) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| T5_Students_StudentID | VARCHAR(20) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| T5_Students_EmailID | VARCHAR(50) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| T5_Students_PhoneNumber | VARCHAR(10) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| TeacherID | VARCHAR(30) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| TeacherName | VARCHAR(45) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| CourseID | VARCHAR(15) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| 🔑 StudentID | VARCHAR(20) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔑 CourseID | VARCHAR(15) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔹 CourseMarks | VARCHAR(45) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| 🔑 StudentID | VARCHAR(20) | ☑ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔹 DateOfBirth | VARCHAR(45) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔹 ParentsName | VARCHAR(45) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔹 ParentMobileNumber | VARCHAR(10) | ☐ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| 🔹 ParentMobileNumber | VARCHAR(10) | ☐ | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔹 StudentAddress | VARCHAR(100) | ☐ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| 🔑 T5_Subjects_CourseID | VARCHAR(15) | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔑 T5_Subjects_CourseName | VARCHAR(40) | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔑 T5_Subjects_CourseYear | INT | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔑 T5_Staff_TeacherID | VARCHAR(30) | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |

| Column Name | Datatype | PK | NN | UQ | B | UN | ZF | AI | G | Default/Expression |
|---|---|---|---|---|---|---|---|---|---|---|
| 🔑 T5_Staff_TeacherID | VARCHAR(30) | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |
| 🔑 T5_Staff_CourseID | VARCHAR(15) | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | |