**LOGICAL ERD DESCRIPTION**

1. **STUDENT and CLASS:**

* **Relationship:** There is many-to-one relationship between STUDENT and CLASS.
* **Explanation:** Many students can assign to one class. However, single student can enrol in only one class at a time.

1. **STUDENT and SUBJECT:**

* **Relationship:** There is **many-to-many** relationship between STUDENT and SUBJECT.
* **Explanation:** Many students can enrol for many subjects and on the same note, several students can do one subject.

1. **TEACHER and SUBJECT:**

* **Relationship:** There is **many-to-many** relationship between TEACHER and SUBJECT.
* **Explanation:** One teacher can teach many subjects and at the same time, many teachers can teach one subject.

1. **ADMIN and TEACHER:**

* **Relationship:** There is **one-to-many** relationship between ADMIN and TEACHER.
* **Explanation:** Many teachers can be associated with one admin while an admin takes control of only one teacher.

1. **FEES and STUDENT:**

* **Relationship:** There is **many-to-one** relationship between FEES and STUDENT.
* **Explanation:** One student is associated with many fee record, but each fee detail is related to one student only.

1. **STUDENT and TEACHER:**

* **Relationship:** There is **many-to-one** relationship between STUDENT and TEACHER.
* **Explanation:** Many students can be handled by a single teacher, but a student at a time is handles by one teacher.

**PHYSICAL ERD DESCRIPTION**

* **STUDENT and FEES:**
* **Relationship:** There is one-to-many relationship between STUDENT & FEES table.
* **Explanation:** One student can have many fee records while one fee record will only belong to one student. S\_ID used in the FEES table is a foreign key, whereby it will refer to the primary key of the STUDENT table.
* **STUDENT and ENROLMENT:**
* **Relationship:** There is one-to-many relationship between STUDENT and ENROLMENT table.
* **Explanation:** One student can be assigned in many classes, and each enrolment record will only belong to one student. S\_ID used in the ENROLMENT table is a foreign key, whereby it will refer to the primary key in the STUDENT table.
* **STUDENT and GRADE:**
* **Relationship:** There is one-to-many relationship between STUDENT & GRADE table.
* **Explanation:** Each student can have many grade records while a single grade record belongs to only one student. The S\_ID used in the GRADE table is a foreign key, whereby it will refer to the primary key in the STUDENT table.
* **ADMIN and STUDENT:**
* **Relationship:** There is one-to-many relationship between ADMIN and STUDENT.
* **Explanation:** One admin handles many student’s records, however each student is handled by one admin. The A\_ID used in the STUDENT table is a foreign key, whereby it will refer to the primary key in the ADMIN table.
* **ADMIN and TEACHER:**
* **Relationship:** There is one-to-many relationship between ADMIN & TEACHER table.
* **Explanation:** one admin can handle many teachers’ data, however each teacher is handled by one admin. The A\_ID used in the TEACHER table is a foreign key, whereby it will refer to the primary key in the ADMIN table.
* **TEACHER and GRADE:**
* **Relationship:** There is one-to-many relationship between TEACHER and GRADE table.
* **Explanation:** A teacher may give many grades; however, each grade is given by one teacher. The T\_ID in the GRADE table is a foreign key, whereby it will refer to the primary key in the TEACHER table.
* **TEACHER and SUBJECT:**
* **Relationship:** There is one-to-many relationship between TEACHER and SUBJECT table.
* **Explanation:** A teacher can belong to many subjects, but each subject is taught by one teacher only. The T\_ID in the SUBJECT table is a foreign key, whereby it will refer to the primary key in the TEACHER table.
* **CLASS and ENROLMENT:**
* **Relationship:** There is one-to-many relationship between CLASS & ENROLMENT table.
* **Explanation:** Each class can have multiple enrolments; however, each enrolment can only belong to one class. The CLASS\_ID in the ENROLMENT table is a foreign key, whereby it will refer to the primary key in the CLASS table.
* **CLASS and GRADE:**
* **Relationship:** There is one-to-many relationship between CLASS & GRADE table.
* **Explanation:** Many grades can be given to each class and each grade can be linked to one class only. The CLASS\_ID in the GRADE table is a foreign key, whereby it will refer to the primary key in the CLASS table.
* **SUBJECT and CLASS:**
* **Relationship:** There is one-to-many relationship between SUBJECT & CLASS table.
* **Explanation:** Each subject can have many classes; however each class can only belong to one subject. The SUB\_ID in the CLASS table is a foreign key, whereby it will refer to the primary key in the SUBJECT table.