**GROUP 7’S DATABASE REPORT**

**Secondary School Database Design Report**

**Introduction**

The following report outlines the design and structure of a relational database system for managing data relevant to a secondary school. The database is designed to efficiently store and manage information about students, teachers, classes, guardians, academic subjects, school years, terms, periods, classrooms, and related entities.

**Entity-Relationship Model**

The database comprises several interconnected entities representing different aspects of the school environment. The main entities include:

1. **Students:** Contains information about individual students enrolled in the school. Each student is uniquely identified by a StudentID. The table includes details such as the student's name, date of birth, gender, enrolment date, and class enrollment.
2. **Guardians:** Stores information about guardians or parents of students. Each guardian is identified by a GuardianID and includes details such as their name, email, and contact number.
3. **Student\_Guardian:** This is a junction table establishing a many-to-many relationship between students and guardians. It defines the type of guardianship and associates students with their respective guardians.
4. **Subjects:** Contains information about academic subjects offered by the school. Each subject is uniquely identified by a SubjectID and includes details such as the subject name and the department it belongs to.
5. **Teachers:** Stores information about teachers employed by the school. Each teacher is uniquely identified by a TeacherID and includes details such as their name, gender, email address, and phone number.
6. **Departments:** Contains information about academic departments within the school. Each department is identified by a Department\_ID and includes the department's name.
7. **SchoolYear:** Stores information about academic years or school terms. Each school year is identified by a SchoolYearID and includes details such as the start and end dates of the academic year.
8. **YearLevel:** Contains information about the different year levels or grades in the school. Each year level is identified by a YearLevelID and includes details such as the name and order of the year level.
9. **Period:** Stores information about periods within a school day. Each period is identified by a PeriodID and includes details such as the name, start time, and end time of the period.
10. **Term:** Contains information about the different terms or semesters within a school year. Each term is identified by a TermID and includes details such as the term number and start and end dates.
11. **ScoreRange:** Stores information about the grading system used for student assessment. Each score range is identified by a ScoreID and includes details such as the minimum and maximum scores and corresponding grades.
12. **StudentClass:** This table establishes the relationship between students and the classes they are enrolled in. It includes the student's ID, the class ID, and the student's score in that class.
13. **Classroomtypes:** Contains information about different types of classrooms available in the school. Each classroom type is identified by a ClassroomtypesID and includes details such as the classroom type name.
14. **Classroom:** Stores information about individual classrooms within the school. Each classroom is uniquely identified by a ClassroomID and includes details such as the classroom type, capacity, and name.
15. **Class:** This table represents individual classes offered by the school. It includes details such as the subject taught, teacher assigned, term, classroom allocated, and class name.
16. **StudentYearLevel:** Establishes the relationship between students and their respective year levels for each school year. It includes the student's ID, year level ID, school year ID, and the student's score for that year level.

**Database Structure**

The database is structured using SQL (Structured Query Language) and comprises a series of CREATE TABLE statements defining the schema for each entity. Each table includes primary keys to uniquely identify records and foreign keys to establish relationships between entities. Additionally, appropriate constraints such as ON DELETE CASCADE are implemented to maintain data integrity and ensure referential integrity across tables.

**Conclusion**

The database design outlined in this report provides a comprehensive framework for managing various aspects of a secondary school's operations efficiently. By organizing data into related entities and establishing appropriate relationships, the database facilitates seamless retrieval, manipulation, and analysis of information related to students, teachers, classes, guardians, and other entities within the school environment.