Experiment – 7

IMPLEMENTATION OF DIFFERENT TYPES OF CONTRAINTS

1. Create the following tables with appropriate constraints:
   Students table schema:

- student_id (Primary Key)
- first_name (Not Null)
- last_name (Not Null)
- email (Unique, Not Null)
- date_of_birth (Check: must be a valid date and the student must be at least 18 years old)

Courses table schema:

- course_id (Primary Key)
- course_name (Not Null)
- credits (Check: must be a positive integer)

Enrollments table schema:

- enrollment_id (Primary Key)
- student_id (Foreign Key referencing Students)
- course_id (Foreign Key referencing Courses)
- enrollment_date (Not Null)

Questions:

1. Write SQL statements to create the Students, Courses, and Enrollments tables with the specified constraints.
2. Write SQL statements to insert at least four records into each table while ensuring that all constraints are respected.
3. Write SQL statements that attempt to insert records that would violate at least one of the constraints defined in the tables. Explain the expected error messages.
4. Write an SQL query to retrieve a list of all students along with the courses they are enrolled in. The result should include the student's first_name, last_name, course_name, and enrollment_date. (use join)
5. Write an SQL query to count the number of students enrolled in each course. The result should include the course_name and the number of enrollments. (use left join)
6. Write an SQL query to find all students who are not currently enrolled in any course. The result should include the student's first_name, last_name, and email. (use left joint)