DBMS LAB 07 TASK

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Note: Write down your commands and errors encountered in a notepad file to be evaluated.

SCENARIO

Bangladesh government has decided to find an online solution for the 'National library of Bangladesh' (NLB). Many branches of NLB already exist in different locations of Bangladesh.

- The branch information will be stored which will contain branch ID, branch name, year of establishment and address.
- Whenever any person will open an account, he/she will first need to register in the system. The user will need to pick a username which must be unique. Along with this his/her name, birth date, home town, occupation, gender will be stored.
- Every library is maintained by some employees. So the information of the staff shall also be stored in NLB online solution. NLB divides the overall staff into 3 categories (Admin, Maintenance and others). The staff information will include the staff name, his National ID number, Blood Group, job category and birth date.
- NLB provides flexibility to the staff to work in different branch in different shifts. So this information will also be stored in the system which will include the branch ID, day of week, starting time, and duration.
- NLB also needs to store information about books and publishers. Books contain information like their name, author, publisher, price, study area etc. Each branch of NLB may host these books. However, the number of copies of a book that each branch has must be stored efficiently.
  Publishers have their name, year of establishment and city of operations. Note that, the same city will not have more than one publisher with the same name.
- The main part of the library is issuing books. NLB wants to store the necessary information about every issued book by any user. Every record will contain the user ID, branch ID, book name, ID of the employee who issued the book, issuing date and number of

days that the user can keep the book. Each of these records can't allow null value. But in case of the number of days of keeping the books, if the branch has a lot of copies of that book, sometimes the librarian may not mention the deadline. In those cases, the book must be returned within 15 days by default.

Your tasks are:

1. Create an ER Diagram with appropriate cardinality. Make sure you specify both the minimum and the maximum cardinality of each entity using the notations shown in the lecture. Only add attributes to the entities if needed.
   For each relationship, comment on how your design satisfies the given requirements.

2. Convert the ER Diagram into a relational model using standard SQL. [Make sure to appropriately declare primary keys and foreign keys.]

3. Upload a zip file that contains your ERD, a text file containing the DDL statements you have used to create a relational model of your ERD and the comments you have used to explain your design choice. You can keep your comments and your DDL statements in the same text file or you can use a separate text file.