

# Database Systems

## Lab02

---

### 1 Task:

Consider the DreamHome Database and do the followings using SQL Server DBMS

1. create database DreamHome
2. create tables for DreamHome database
3. add constraints (Primary Key, Foreign Key, Unique , Default, Check )
4. insert the data into the DreamHome (at least 5 records for each table)

### 2 Task:

Consider the given Book Database Schema, write queries using

1. Relational Algebra
2. Using Select statement

\*Note: You do not need to implement Book Database Schema

Book	(ISBN, title, edition, year)	
BookCopy	( <u>copyNo</u> , ISBN, available)	
Borrower	( <u>borrowerNo</u> , borrowerName, borrowerAddress)	
BookLoan	( <u>copyNo</u> , <u>dateOut</u> , dateDue, borrowerNo)	
where	Book	contains details of book titles in the library and the ISBN is the key.
	BookCopy	contains details of the individual copies of books in the library and <b>copyNo</b> is the key. ISBN is a foreign key identifying the book title.
	Borrower	contains details of library members who can borrow books and <b>borrowerNo</b> is the key.
	BookLoan	contains details of the book copies that are borrowed by library members and <b>copyNo/dateOut</b> forms the key. <b>borrowerNo</b> is a foreign key identifying the borrower.

1. List all book titles.
2. List all borrower details.
3. List all books titles published between 2010 and 2014.
4. Remove all books published before 1950 from the database.
5. List all book titles that have never been borrowed by any borrower.
6. List all book titles that contain the word 'database' and are available for loan.
7. List the names of borrowers with overdue books.

- 
8. How many copies of each book title are there?
  9. How many copies of ISBN “0-321-52306-7” are currently available?
  10. How many times has the book title with ISBN “0-321-52306-7” been borrowed?
  11. Produce a report of book titles that have been borrowed by “Peter Bloomfield.”
  12. For each book title with more than three copies, list the names of library members who have borrowed them.
  13. Produce a report with the details of borrowers who currently have books overdue.
  14. Produce a report detailing how many times each book title has been borrowed.

### 3 Task:

Consider the [Database for your project](#) and do the followings using SQL Server DBMS

\*Note: Please use the same database you have designed in the first lab Lab01

1. create database
2. create tables for the database
3. add constraints (Primary Key, Foreign Key, Unique , Default, Check )
4. insert the data into the database (at least 5 records for each table)