Assignment 5 SQL

Computing Lab - II
(CS69012_S2021)
IIT Kharagpur

Relational Database Management System

- A database management system that manages data as a collection of tables in which all relationships are represented by common values in related tables
- An RDBMS is usually implemented as a server program
- Client programs communicate with the server (typically using TCP/IP)
  - In Unix-based systems the server will run as a daemon.
  - In Windows it will run as a service.

SQL Overview

- Structured Query Language
- Officially pronounced S-Q-L, but many people say “sequel”
- The standard for relational database management systems (RDBMS)
- SQL is the only database language to have gained broad acceptance.
- Nearly every database system supports it

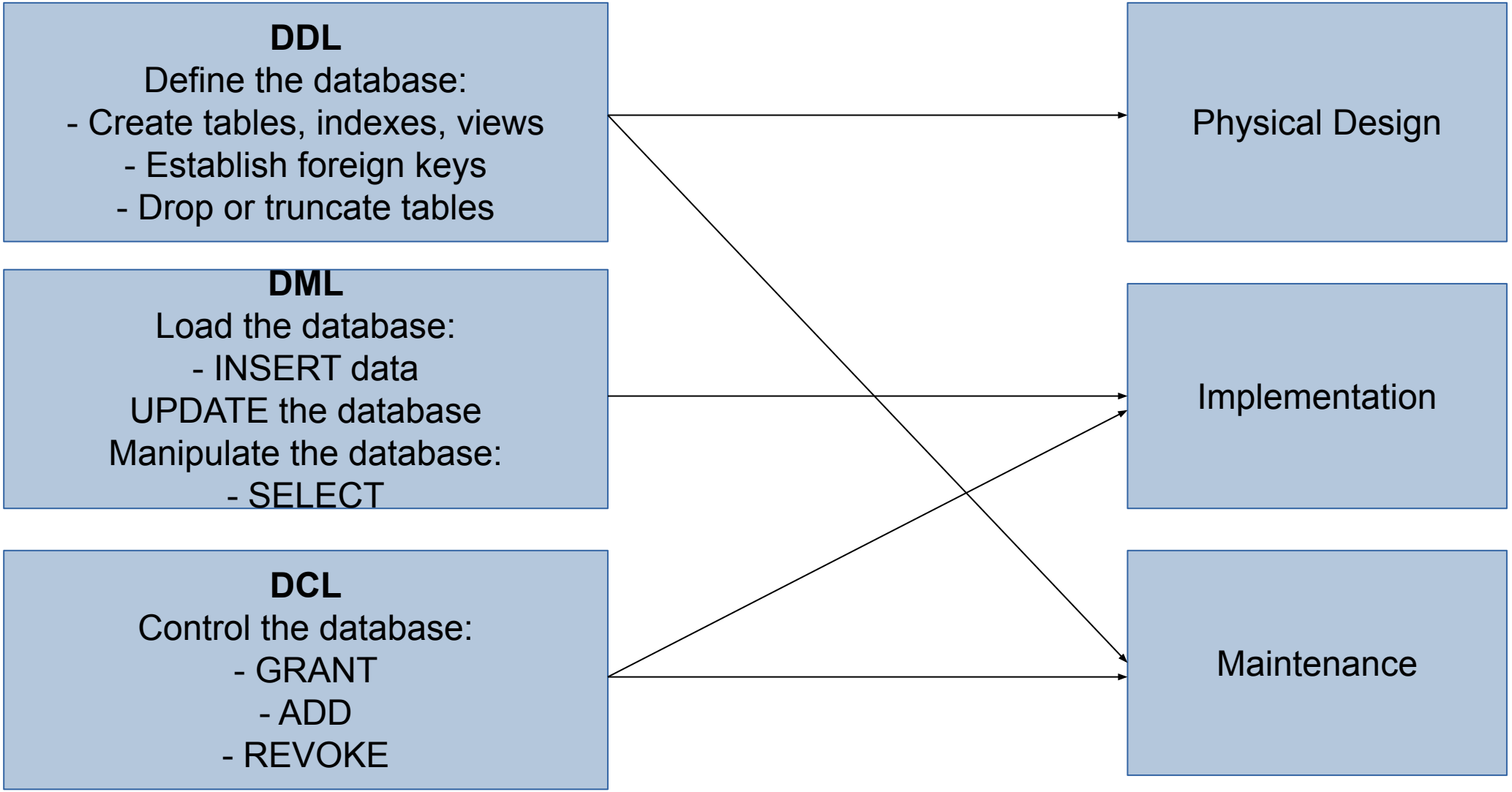
MySQL Overview

- MySQL is a very popular, open source database
- Handles very large databases; very fast performance
- Why are we using MySQL?
  - Free (much cheaper than Oracle!)
  - Each student can install MySQL locally.
  - Easy to use Shell for creating tables, querying tables, etc.
  - Easy to use with Java JDBC , Python, PHP.

SQL Environment

Catalog	Schema	Data Definition Language	Data Manipulation Language	Data Control Language
A set of Schemas that describe a database	Contains descriptions of tables, views	Commands that define a database, including creating, altering, and dropping tables	Commands that maintain and query a database	Commands that control a database, including administering privileges and committing data

SQL Basics


DDL
Define the database:
- Create tables, indexes, views
- Establish foreign keys
- Drop or truncate tables
DML
Load the database:
- INSERT data
UPDATE the database
Manipulate the database:
- SELECT
DCL
Control the database:
- GRANT
- ADD
- REVOKE
Physical Design
Implementation
Maintenance

MySQL Commands

Description	Command
To login	$ sudo mysql -u root
Create a database on the sql server.	create database [databasename];
List all databases on the sql server.	show databases;
Switch to a database.	use [db name];
To see all the tables in the db.	show tables;
To see database's field formats.	describe [table name];
To delete a db.	drop database [database name];
To delete a table.	drop table [table name];

Select Statement

- SELECT
- - List the columns (and expressions) to be returned from the query
- FROM
- - Indicate the table(s) or view(s) from which data will be obtained
- WHERE
- - Indicate the conditions under which a row will be included in the result
- GROUP BY
- - Indicate categorization of results
- HAVING
- - Indicate the conditions under which a category (group) will be included
- ORDER BY
- - Sorts the result according to specified criteria

Assignment 5

Homework Assignment -- No need to Submit but must practice the queries.

You will be given the sql database. Load locally on your machine and use for the practice queries. Do not modify the database.

Tennis Database

Tables

- CountryCodes
- Player
- PalyedIN
- Tournament
- Registration
- Match
- SetScore
- MatchResults
- RetiredMatch
- Tiebreaker

Practice

There will be a test Next week!

Best of Luck