

Session 4-1 Introduction to SQL

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Relational DBMS

Database

- Collection of data

Database management systems (DBMS)

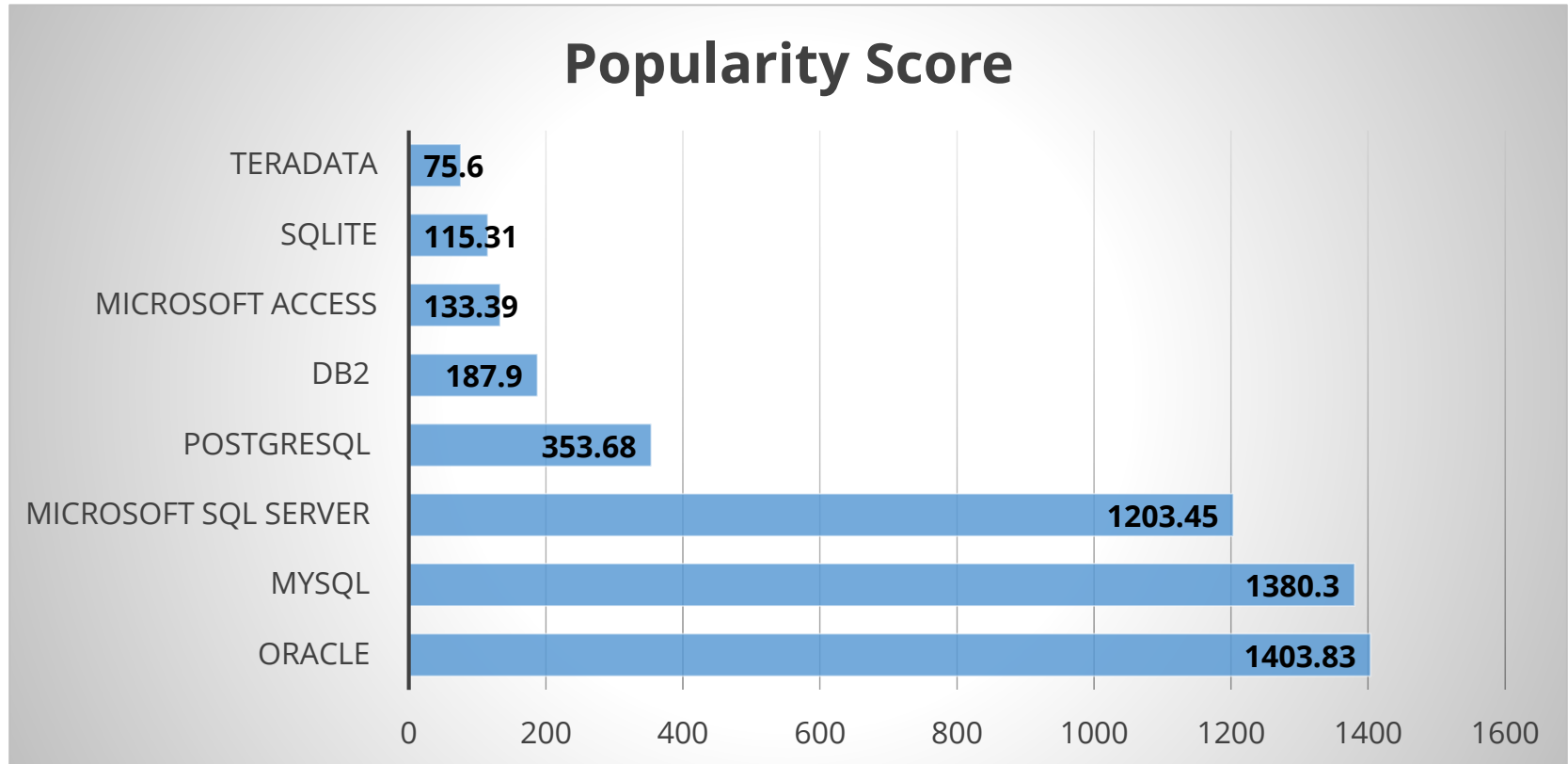
- Controlling application between database and end-users

Relational DBMS

- DBMS for relational database model

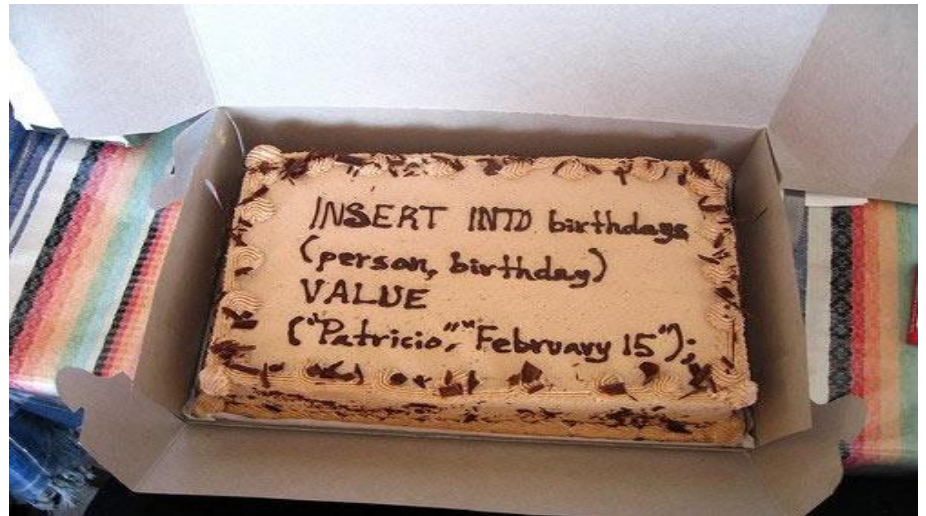


Popular RDBMSs



Structured Query Language (SQL)

- Language designed for managing data in RDBMS
- Different syntax and functionality across RDBMS, but mostly similar
- Intuitive language



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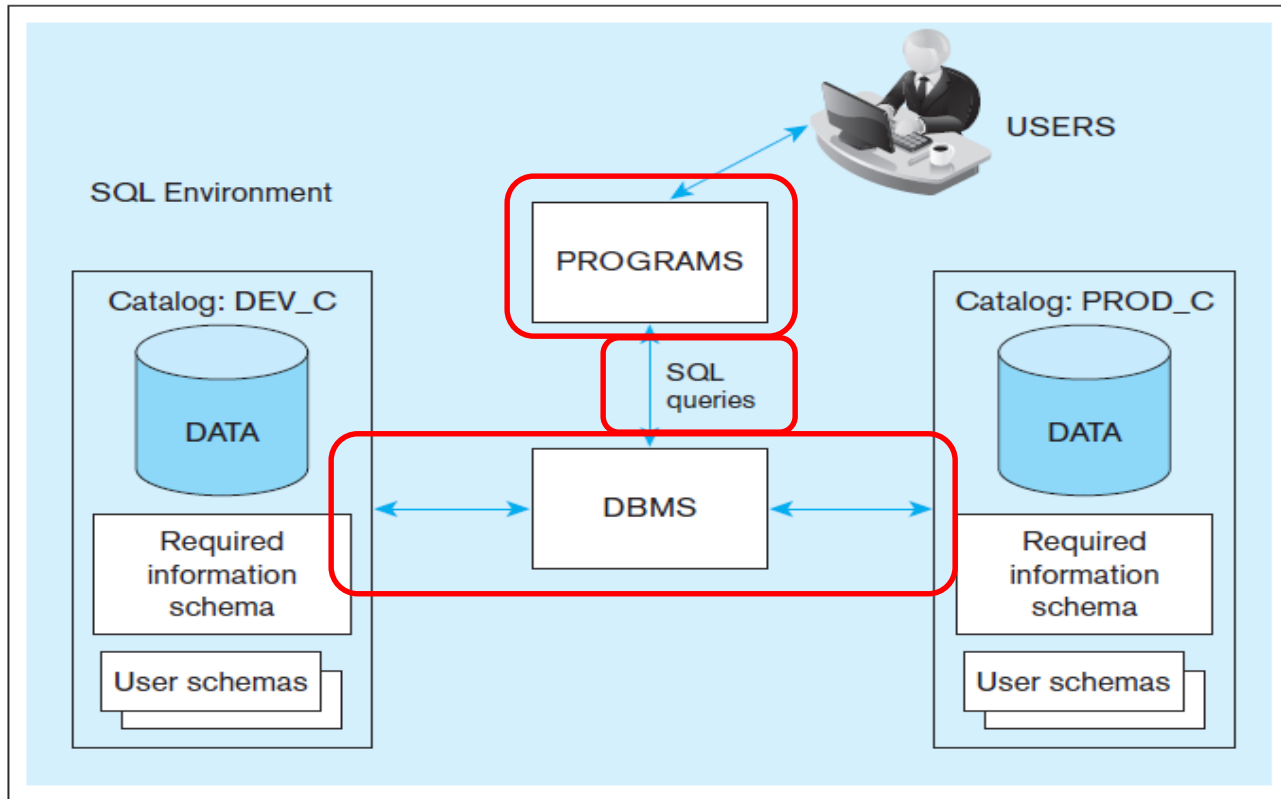
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SQL Subgroups

- Data Manipulation Language (DML)
 - insert/update records in a database
 - delete records from a database
 - retrieve data from a database
- Data Definition Language (DDL)
 - create new databases
 - create new tables in a database
- Data Control Language (DCL)
 - Manage users
 - grant or revoke permissions on elements of a database
 - Backup and restore a database



Simplified Schematic of Typical SQL Environment



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Oracle Client Program

- ISQL*PLUS
 - Web base; no installation
 - Sometime unstable
 - Limited functionality
- SQL developer app
 - Installation required
 - No crash
 - Support better functionality and the user-friendly interface



iSQL*Plus

- <http://oracle.business.wayne.edu:5560/isqlplus/>
- Sign in with WSU ID and initial password given
 - Change the given password (Preferences → Change Password)
- Oracle server is stable, but the web interface (iSQL) is not, and does crash from time to time
 - If it does, contact me or Richard Lerman (ad3722@wayne.edu)



iSQL*Plus Interface - Workspace

The screenshot shows the iSQL*Plus Workspace interface. At the top right, there are three circular icons: a key for 'Logout', a person for 'Preferences', and a question mark for 'Help'. Below these is a tabbed interface with 'Workspace' and 'History' tabs; the 'Workspace' tab is highlighted with a red rectangle. Below the tabs, it says 'Connected as GL3566@'. The main area is titled 'Workspace' and contains the instruction 'Enter SQL, PL/SQL and SQL*Plus statements.' followed by a large text input box. An arrow points from the text 'Enter queries here' to this input box. Below the input box are four buttons: 'Execute', 'Load Script', 'Save Script', and 'Cancel'. Arrows point from descriptive text to each of these buttons: 'Once entered, click Execute' points to 'Execute'; 'Instead of typing in, You can load a whole script from a pre-stored file' points to 'Load Script'; and 'Save Script to export your queries to an external file' points to 'Save Script'.

Logout Preferences Help

Workspace History

Connected as GL3566@

Workspace

Enter SQL, PL/SQL and SQL*Plus statements.

Enter queries here

Execute Load Script Save Script Cancel

Once entered, click Execute

Instead of typing in, You can load a whole script from a pre-stored file

Save Script to export your queries to an external file



iSQL*Plus Interface - History

History

The scripts listed are for the current session. Script history is not available for previous sessions.

[Select scripts and ...](#) [Delete](#) [Load](#)

[Select All](#) | [Select None](#)

[Select Script](#)

<input type="checkbox"/>	select title title2 from books
<input type="checkbox"/>	select title title2
<input type="checkbox"/>	select title, retail-cost as profit from books
<input type="checkbox"/>	select title, retail-cost profit from books
<input type="checkbox"/>	select title, retail-cost from books
<input type="checkbox"/>	select title from books;
<input type="checkbox"/>	select title from books
<input type="checkbox"/>	DROP TABLE CUSTOMERS CASCADE CONSTRAINTS; DROP TABLE ORDERS CASCADE CONSTRAINT
<input type="checkbox"/>	drop table WORKCENTER_T cascade constraints; drop table WORKSIN_T cascade cons
<input type="checkbox"/>	select 'drop table ', table_name, 'cascade constraints;' from user_tables;

[Select scripts and ...](#) [Delete](#) [Load](#)



Connected as GL3566@



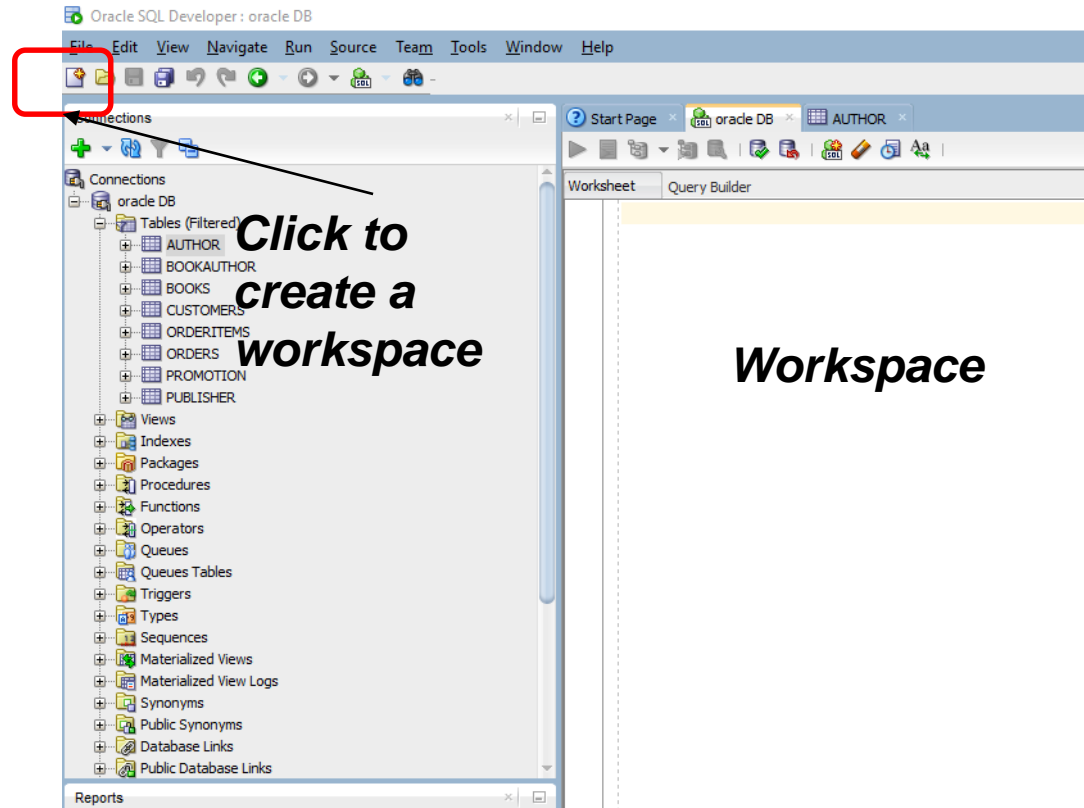
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SQL Developer App

- Configuration instruction available on Canvas
 - “How to install and configure SQL Developer.pdf”



SQL Developer App - Workspace



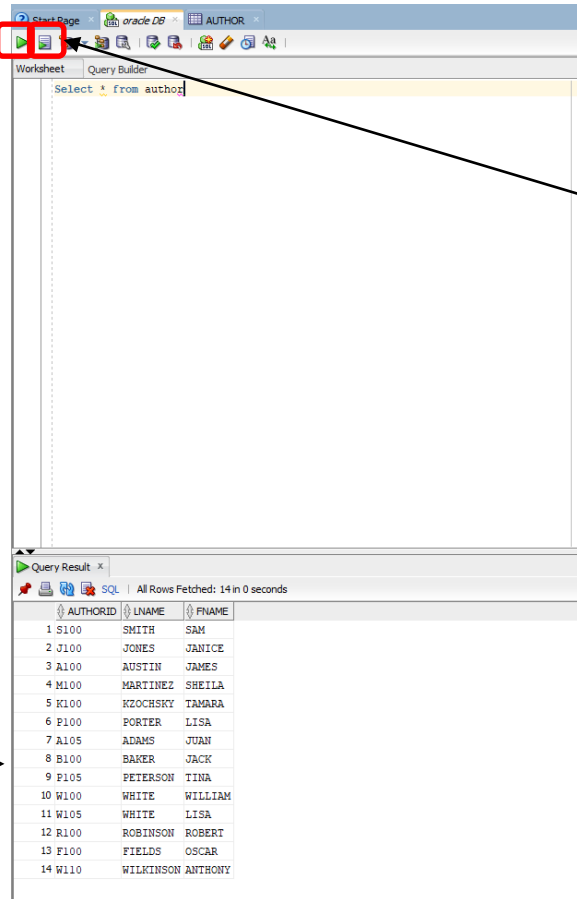
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SQL Developer app - Execute

***Run by
statement
(line)***

***Run all
statements
(script)***

***Query
results***



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Loading Data on Your Oracle DB

- Follow the instruction on Canvas to load the data ("JustLeeDB.txt") on your DB



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Useful Commands

- What tables are in your database?
 - `SELECT table_name from user_tables;`
- What columns are in a specific table?
 - E.g., “customers” table: `DESCRIBE customers;`



Wrap-Up

- What is SQL
- Oracle DB client program
 - iSQL*PLUS
 - SQL developer app
- Load data on Oracle DB



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