

SQL Week 1

Topics List

- Library System
- SELECT
- Using AS and CONCAT
- Using WHERE
- The DISTINCT keyword

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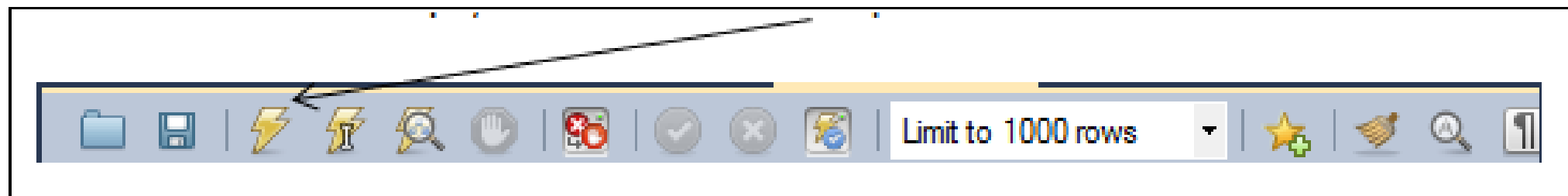
Library System

- For our labs, we will be using an existing database (library database). It has the following tables: *book*, *bookcopy*, *student*, *loan*, *author* and *authorship*.
- To run the script:
 - Under the *File* menu, choose *Run SQL Script*
 - When the dialog box opens, select *library_script.sql*.
 - Click the button *Open* and on the next dialog box, click *Run*.
 - When the Operation has run successfully, click *Close*.

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Library System

- Alternatively:
 - Choose *Open SQL Script*
 - When the dialog box opens, select *library_script.sql*.
 - Click the button *Open*. This will open the script in a new tab.
 - To execute the script, choose the third option on the window.



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SELECT

- The select statement is used to query the database and retrieve selected data that match the criteria that you specify. The data returned is stored in a result table, called the *result-set*. Here is the format of a simple select statement:

```
SELECT [DISTINCT|ALL] {*|[[columnExpression [AS newName]][,...]]}  
FROM Tablename [alias]  
[JOIN Tablename ON ...]  
[WHERE condition]  
[GROUP BY columnlist][HAVING condition]  
[ORDER BY columnList];
```

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SELECT

- Examples:

```
SELECT *  
FROM student;
```

```
SELECT fname, lname  
FROM student;
```

```
SELECT *  
FROM student  
WHERE county = 'Waterford';
```

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Using AS and CONCAT

- To rename a column (returned value), use the AS clause.

```
SELECT fname AS 'First Name', lname AS 'Last Name'  
FROM student;
```

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Using AS and CONCAT

- To combine 2 or more strings or columns together use the CONCAT clause.

```
SELECT CONCAT(fname, ' ', lname) AS 'Name'  
FROM student;
```

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Using WHERE

- The WHERE keyword is used when we want to filter results, and only see records that meet specific criteria. For example, we may only want to see books with the title 'JavaScript':

```
SELECT title  
FROM book  
WHERE title = 'JavaScript';
```

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Using DISTINCT

- The DISTINCT keyword is used when we want to eliminate duplicate results.
- If for example, a query returns just one column in the result. Some of the rows may return the same value as other rows for that particular column.
- `SELECT category FROM book;` will return a value for each record in the book table, so some of the records will come from the same category and hence will return the same (duplicate value).

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Using DISTINCT

- To eliminate duplicates occurring we use the DISTINCT keyword before the column name(s), as follows:
- `SELECT DISTINCT category FROM book;`