SQL Select Introduction

Topics List

- Library System

- SELECT

- Using AS and CONCAT

- Using WHERE

- The DISTINCT keyword
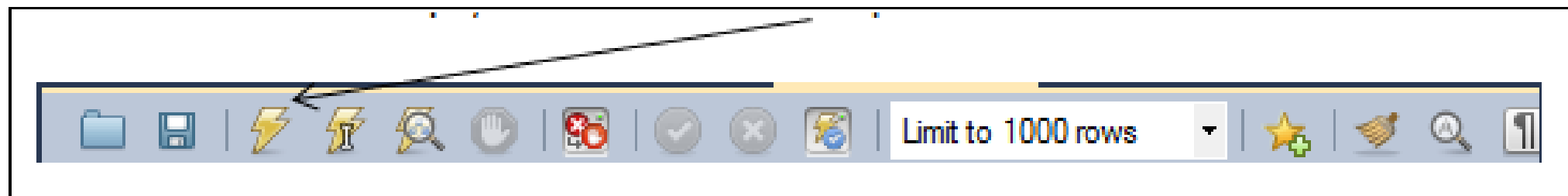
SQL Select Introduction
Library System

- 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.

SQL Select Introduction
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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SQL Select Introduction
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];
```

SQL Select Introduction
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- Examples:

  SELECT *
  FROM student;

  SELECT fname, lname
  FROM student;

  SELECT *
  FROM student
  WHERE county = 'Waterford';

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SQL Select Introduction
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;

SQL Select Introduction
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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SQL Select Introduction
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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SSQL Select Introduction
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).

SQL Select Introduction
Using DISTINCT

- To eliminate duplicates occurring we use the DISTINCT keyword before the column name(s), as follows:

- SELECT DISTINCT category FROM book;