Topics of Discussion

- Retrieving data from the database
- Display the retrieved data
- Passing information between pages

Operation	SQL
Create	INSERT
Read (Retrieve)	SELECT
Update (Modify)	UPDATE
Delete (Destroy)	DELETE

Retrieving Data from Database

- Need to connect in the usual way, but this time the SQL query will retrieve data
- Run a SELECT query to pull the required data out of the database

```
$query = "SELECT * FROM boards";
```

W3Schools: MySQL Select Data

Retrieving Data from Database

```php
<?php
// include database credentials
require_once("config.php");
// make connection to database
$conn = new mysqli(SERVERNAME, USERNAME, PASSWORD, DATABASE);
// check connection successful
if ($conn->connect_error) {
    die("<p class=\"error\">Connection to database failed!</p>");
}
// issue query instructions
$sql = "SELECT * FROM boards";
$result = $conn->query($sql);
//check query successful
if ($result === FALSE) {
    die("<p class=\"error\">Unable to retrieve data!</p>");
}
// close connection to database
$conn->close();
?>
```

Retrieving Data from Database

- `$result` does not hold the query results
  - `query()` method return a `mysqli_result` object
- Need to use the mysqli_result object's method `fetch_assoc()`
  - fetches one row of data from the result set and returns it as an associative array
- Use a loop to repeatedly call `fetch_assoc()` to fetch each row of data

mysqli_result Object

- Represents the result set obtained from a query against the database

mysqli_result	
$num_rows	Gets the number of rows in the result set.
fetch_assoc()	Fetch the next row of a result set as an associative array

Displaying Data
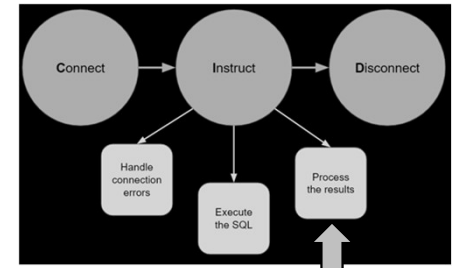
- Since you may not know the number of rows retrieved, a `while` loop is most suited
- `$row` variable is set as an associative array containing each rows fields

board_id	category	picture	type	length	sta
9	Surfboard	1594754310surfboard.png	Funboard	7.4	A fe

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```
$row = array("board_id" => 9, "category" => "Surfboard",...);
```

Loop to cycle through each row of data

```
$result = $conn->query($sql);
…
while($row = $result->fetch_assoc()){
    …
}
```

Displaying Data

- Need to display the data stored in the database in a way most suited to the user (humans)
  - Not good enough to simply display it as stored (structured) in the database
  - Think about the user's experience

User does not need to see the id

User probably wants to see the picture first

board_id	category	picture	type	length	status	description	rate
5	Surfboard	surfboard.png	Shortboard	6.1	New	Excellent for adva...	250
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Displaying Data

Picture	Category	Type	Length	Description	Condition	Daily Rate
	Surfboard	Funboard	6.8	Excellent all-rounder	New	R255
	Surfboard	Shortboard	6.1	Super performance	New	R285

Displaying Data

Picture	Category	Type	Length	Description	Condition	Daily Rate
	Surfboard	Funboard	6.8	Excellent all-rounder	New	R255
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// check connection successful
if ($conn->connect_error) {
    die("<p class=\"error\">Connection to database failed!</p>");
}
// issue query instructions
$sql = "SELECT * FROM boards";
$result = $conn->query($sql);
//check query successful
if ($result === FALSE) {
    die("<p class=\"error\">Unable to retrieve data!</p>");
}
// create table headings
echo "<table width=\"80%\" border=0>
    <tr style=\"background-color: #428bca\">
        <td>Picture</td>
        <td>Category</td>
        <td>Type</td>
        <td>Length</td>
        <td>Description</td>
        <td>Condition</td>
        <td>Daily Rate</td>
    </tr>";
```

Displaying Data

<img src="boards/153746738surfboard.jpg">

```php
// populate table rows with data from database
while ($row = $result->fetch_assoc()) {
    echo "<tr>";
    echo "<td>" . "<img src=\"boards/" . $row['picture'] . "\">" . "</td>";
    echo "<td>" . $row['category'] . "</td>";
    echo "<td>" . $row['type'] . "</td>";
    echo "<td>" . $row['length'] . "</td>";
    echo "<td>" . $row['description'] . "</td>";
    echo "<td>" . $row['status'] . "</td>";
    echo "<td>R" . $row['rate'] . "</td>";
    echo "</tr>";
}
// end table
echo "</table>";
// close connection to database
$conn->close();
?>
```

Picture	Category	Type	Length	Description	Condition	Daily Rate
	Surfboard	Funboard	6.8	Excellent all-rounder	New	R255
	Surfboard	Shortboard	6.1	Super performance	New	R285

Displaying Data

- Wrap the variable inside of { and }, and PHP will print the value of that variable - makes for a lot simpler code

```
"<img src=\"boards/". $row['picture'] . "\">"
```

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```
"<img src=\"boards/{$row['picture']}\">"
```

Displaying Data

- Need to allow users to book a board to rent for the day
- To rent a board, the user must fill in a form with their details

Displaying Data

- Database tables

boards

board_id	category	picture	type	length	status	description	rate
9	Surfboard	1595775302fish.jpg	Fish	5.8	Good	A Fish is a surfboard that is generally under 6 f...	235
31	Paddle Board	1595775690aqua-marina.jpeg	Allround	9.6	New	The All Rounder is a versatile hybrid Stand Up P...	350
32	Paddle Board	1595775792eclipse-paddleboard.jpg	Flatwater	10.4	New	A Flatwater Paddle Board is the perfect SUP for...	360

customers

auto_id	id	name	surname	street_address	town	code	email	mobile	hire_date	board_id
4	8212120000111	David	Xoli	6 Spring St	Makhanda	3333	dx-man@gmailz.com	0725551234	2021-07-29	9
5	8212120000111	David	Xoli	6 Spring St	Makhanda	3333	dx-man@gmailz.com	0725551234	2021-08-04	9
6	8212120000111	David	Xoli	6 Spring St	Makhanda	3333	dx-man@gmailz.com	0725551234	2021-08-04	10

Passing Data Between Pages

- GET - in the URL of the request

helloworld.php?name=Greg

Passing Data Between Pages

- Pass variables with data between pages using a URL

rentals.php

```php
// populate table rows with data from database
while ($row = $result->fetch_assoc()) {
    echo "<tr>";
    echo "<td><img src=\"boards/{$row['picture']}\"></td>";
    echo "<td>{$row['category']}</td>";
    echo "<td>{$row['type']}</td>";
    echo "<td>{$row['length']}</td>";
    echo "<td>{$row['description']}</td>";
    echo "<td>{$row['status']}</td>";
    echo "<td>R{$row['rate']}</td>";
    echo "<td><a href=\"book.php?id={$row['board_id']}\"><input type=\"button\" value=\"Rent\"></a></td>";
    echo "</tr>";
}
```

Picture	Category	Type	Length	Description	Condition	Daily Rate	Rent
	Surfboard	Funboard	6.8	Excellent all-rounder	New	R255	Rent
	Surfboard	Shortboard	6.1	Super performance	New	R285	Rent

```php
<input type="hidden" name="board_id" id="board_id" value="<?php echo $_REQUEST['id']; ?>"><br>
```

book.php

```html
<form action="book.php" method="POST">
    <fieldset>
        <legend><strong>Book a Board</strong></legend>
        <label for="customer_id">ID Number:</label><br>
        <input type="text" name="customer_id" size="25" id="customer_id" maxlength="13" required><br>
        <label for="name">Name:</label><br>
        <input type="text" name="name" size="25" id="name" required><br>
        <label for="surname">Surname:</label><br>
        <input type="text" name="surname" size="25" id="surname" required><br>
        <label for="address">Street Address:</label><br>
        <input type="text" name="address" size="25" id="address" required><br>
        <label for="town">Town:</label><br>
        <input type="text" name="town" size="25" id="town" required><br>
        <label for="code">Code:</label><br>
        <input type="text" name="code" size="25" id="code" maxlength="4" required><br>
        <label for="email">eMail:</label><br>
        <input type="email" name="email" size="25" id="email" required><br>
        <label for="mobile">Mobile Number:</label><br>
        <input type="text" name="mobile" size="25" id="mobile" maxlength="10" required><br>
        <label for="date">Hire Date:</label><br>
        <input type="date" name="date" size="25" id="date" required><br>

        <input type="hidden" name="board_id" id="board_id" value="<?php echo $_REQUEST['id']; ?>"><br>

        <a href="rentals.php"><input type="button" value="Back to Rentals"></a>
              
        <input type="submit" name="submit" value="Book">
    </fieldset>
</form>
```

Book a Board

ID Number:
5555555555555

Name:
Thato

Surname:
Mali

Street Address:
26 Prince Alfred St

Town:
Makhanda

Code:
6140

eMail:
tm@gmailz.com

Mobile Number:
7777777777

Hire Date:
10 Sep 2020

Back to Rentals   Book

```php
<?php
// check if the form has been submitted
if (isset($_REQUEST['submit'])) {
    // include database credentials
    require_once("config.php");
    // get values from form
    $cust_ID = $_REQUEST['customer_id'];
    $name = $_REQUEST['name'];
    $surname = $_REQUEST['surname'];
    $address = $_REQUEST['address'];
    $town = $_REQUEST['town'];
    $code = $_REQUEST['code'];
    $email = $_REQUEST['email'];
    $mobile = $_REQUEST['mobile'];
    $date = $_REQUEST['date'];
    $board_ID = $_REQUEST['board_id'];
    // make connection to database
    $conn = new mysqli(SERVERNAME, USERNAME, PASSWORD, DATABASE);
    // check connection successful
    if ($conn->connect_error) {
        die("<p class=\"error\">Connection to database failed!</p>");
    }
    // issue query instructions to insert customer details
    $sql = "INSERT INTO customers(id, name, surname, street_address, town, code, email, mobile, hire_date, board_id)
            VALUE('$cust_ID', '$name', '$surname', '$address', '$town', '$code','$email', '$mobile', '$date', '$board_ID')";
    $result = $conn->query($sql);
    //check query successful
    if ($result === FALSE) {
        die("<p class=\"error\">Unable to retrieve data!</p>");
    }
    // close connection to database
    $conn->close();
    // display message to confirm the data was inserted
    echo "<p class=\"success\">Thank you for renting a board for $date!</p>";
}
?>
```

Thank you for renting a board for 2023-07-31

Book a Board

ID Number:

Name:

Surname:

Street Address:

Town:

Code:

eMail:

Mobile Number:

Hire Date:

yyyy / mm / dd

Back to Rentals   Book