



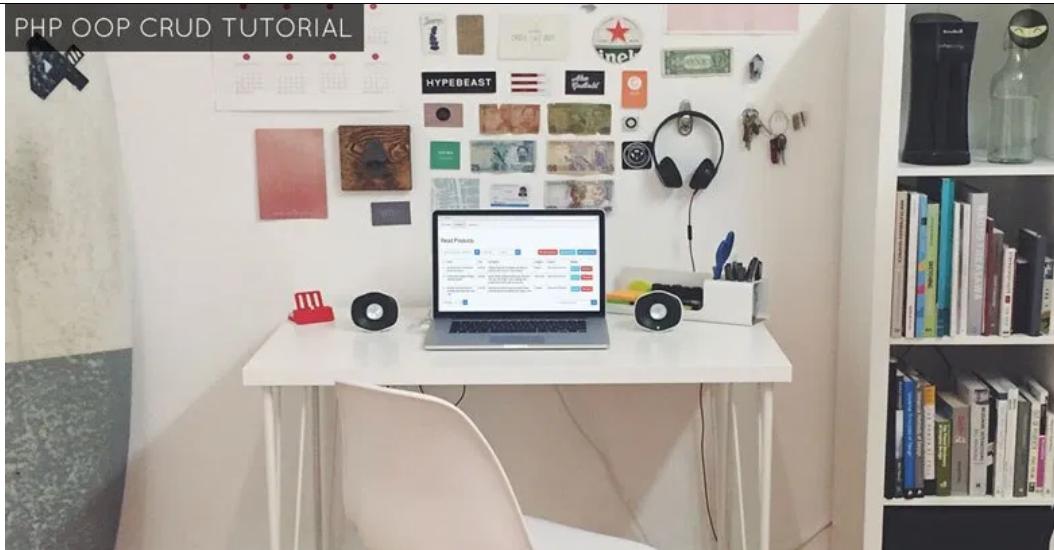
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PHP OOP CRUD Tutorial – Step By Step Guide!

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Previously, we learned how to create or insert, read, update, and delete database records with our **PHP and MySQL CRUD tutorial for beginners < [https://codeofaninja.com/php-and-mysql-](https://codeofaninja.com/php-and-mysql-crud-tutorial/)**

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Overview

Our tutorial for today is about creating a simple database application. We can achieve it with the help of this PHP OOP CRUD tutorial. You can use this knowledge in your current or future projects.

We use Bootstrap so that our application will have a decent UI. If you're not yet familiar with what Bootstrap is, and you want to learn how to use it in few steps, I highly recommend following [our Bootstrap tutorial < https://www.codeofaninja.com/2014/05/bootstrap-tutorial-beginners-step-step.html>](#) first.

There are so many PHP object-oriented programming tutorials on the web today, they have

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I'm writing this tutorial with a clear goal: to give the best PHP OOP CRUD tutorial for beginners. I welcome your comments and suggestions to help me achieve this.

We want to learn the correct PHP OOP implementation. There are PHP frameworks such as CakePHP, CodeIgniter, and Laravel that correctly do it.

Those things are one step higher. For now, we will learn object-oriented programming with PHP & MySQL. Working with a PHP framework should be easy after following this tutorial.

Database Table Structure

The files products.sql and categories.sql are also included in the code download, located at the **README** folder.

Create a database

- Open your PhpMyAdmin (<http://localhost/phpmyadmin> < [Run the following SQL statement using your PhpMyAdmin.>](#))
- Create a new database.
Put the `php_oop_crud_level_1` as database name

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In this section, we will create the “products” table (using PhpMyAdmin) on the database we just created.

Here’s how to run an SQL statement using PhpMyAdmin.

- Click `php_oop_crud_level_1` database.
- Click “SQL” tab.
- Copy the SQL statement below and paste it in the text area.
- Click the “Go” button.

```
-- Table structure for table `products`
CREATE TABLE IF NOT EXISTS `products` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `name` varchar(32) NOT NULL,
  `description` text NOT NULL,
  `price` int(11) NOT NULL,
  `category_id` int(11) NOT NULL,
  `created` datetime NOT NULL,
  `modified` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP,
  PRIMARY KEY (`id`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT=38 ;
```

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Run the following SQL statement using your PhpMyAdmin.

```
-- Dumping data for table `products`
INSERT INTO `products` (`id`, `name`, `description`, `price`, `category_id`, `image`)
(1, 'LG P880 4X HD', 'My first awesome phone!', 336, 3, '2014-06-01 01:12:26'),
(2, 'Google Nexus 4', 'The most awesome phone of 2013!', 299, 2, '2014-06-01 01:12:26'),
(3, 'Samsung Galaxy S4', 'How about no?', 600, 3, '2014-06-01 01:12:26'), '2014-06-01 01:12:26',
(6, 'Bench Shirt', 'The best shirt!', 29, 1, '2014-06-01 01:12:26'), '2014-05-31 01:12:26',
(7, 'Lenovo Laptop', 'My business partner.', 399, 2, '2014-06-01 01:13:45'), '2014-06-01 01:13:45',
(8, 'Samsung Galaxy Tab 10.1', 'Good tablet.', 259, 2, '2014-06-01 01:14:13'),
(9, 'Spalding Watch', 'My sports watch.', 199, 1, '2014-06-01 01:18:36'), '2014-06-01 01:18:36',
(10, 'Sony Smart Watch', 'The coolest smart watch!', 300, 2, '2014-06-06 17:18:00'),
(11, 'Huawei Y300', 'For testing purposes.', 100, 2, '2014-06-06 17:11:04'), '2014-06-06 17:11:04',
(12, 'Abercrombie Lake Arnold Shirt', 'Perfect as gift!', 60, 1, '2014-06-06 17:11:04'),
(13, 'Abercrombie Allen Brook Shirt', 'Cool red shirt!', 70, 1, '2014-06-06 17:11:04'),
(25, 'Abercrombie Allen Anew Shirt', 'Awesome new shirt!', 999, 1, '2014-11-22 19:07:34'), '2014-11-22 19:07:34',
(26, 'Another product', 'Awesome product!', 555, 2, '2014-11-22 19:07:34'), '2014-11-22 19:07:34',
(27, 'Bag', 'Awesome bag for you!', 999, 1, '2014-12-04 21:11:36'), '2014-12-04 21:11:36',
(28, 'Wallet', 'You can absolutely use this one!', 799, 1, '2014-12-04 21:12:00'),
(30, 'Wal-mart Shirt', '', 555, 2, '2014-12-13 00:52:29'), '2014-12-12 01:52:29',
(31, 'Amanda Waller Shirt', 'New awesome shirt!', 333, 1, '2014-12-13 00:52:54'),
(32, 'Washing Machine Model PTRR', 'Some new product.', 999, 1, '2015-01-08 22:00:00')
```

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Run the following SQL statement using your PhpMyAdmin.

```
-- Table structure for table `categories`
CREATE TABLE IF NOT EXISTS `categories` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `name` varchar(256) NOT NULL,
  `created` datetime NOT NULL,
  `modified` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP,
  PRIMARY KEY (`id`)
) ENGINE=MyISAM DEFAULT CHARSET=utf8 AUTO_INCREMENT=4 ;
```

Insert categories sample data

We are going to have “Fashion”, “Electronics” and “Motors” as categories in our project. I got those three category ideas from eBay, haha!

Run the following SQL statement using your PhpMyAdmin.

```
-- Dumping data for table `categories`
INSERT INTO `categories` (`id`, `name`, `created`, `modified`) VALUES
(1, 'Fashion', '2014-06-01 00:35:07', '2014-05-30 17:34:33'),
```

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In this section, we were able to set up our database using PhpMyAdmin. It should look like the image below.

Table	Action	Rows	Type	Collation	Size	Overhead
categories	Browse Structure Search Insert Empty Drop	2	MyISAM	utf8_general_ci	2.1 Kib	
products	Browse Structure Search Insert Empty Drop	18	InnoDB	latin1_swedish_ci	3.1 Kib	

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Create the Layout Files

To reduce some code mess, we will create the layout files with the codes and assets it needs.

Create header layout file

This `layout_header.php` file will be included at the beginning of the PHP files that will need it.

This way, we won't have to write the same header codes every time.

We use the **Bootstrap framework < <https://getbootstrap.com/>>** to make our project look good.

If you're not yet familiar with you, please learn our **Bootstrap tutorial here <**

<https://www.codeofaninja.com/2014/05/bootstrap-tutorial-beginners-step-step.html> first.

Bootstrap CSS asset will be included inside the head tags.

- Create `php-oop-crud-level-1` folder and open it.
- Create `layout_header.php` file.
- Place the following code.

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```
<!DOCTYPE html>
<html lang="en">
<head>

    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">

    <title><?php echo $page_title; ?></title>

    <!-- Latest compiled and minified Bootstrap CSS -->
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css" integrity="sha384-BVYiiSIFeK1dGmJRAkycqJCWA7/FQ5aIgIpFhsP偶tYfH28jgjPS7sN+M=" crossorigin="anonymous">

    <!-- our custom CSS -->
    <link rel="stylesheet" href="libs/css/custom.css" />

</head>
<body>

    <!-- container -->
    <div class="container">

        <?php
        // show page header
        echo "<div class='page-header'>">
```

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Create footer layout file

This `layout_footer.php` will be included at the end of each PHP files that needs it. This way, we won't have to write the same footer codes every time.

The assets used in this file are:

- **jQuery < <https://jquery.com/>>** – needed by Bootstrap JavaScript.
- **Bootstrap JavaScript < <https://getbootstrap.com/docs/3.3/javascript/>>** – to make cool UI components work.
- **BootboxJS < <http://bootboxjs.com/getting-started.html>>** – to show good looking alert or confirm dialog boxes.

Let's go on and create the footer layout file.

- Open `php-oop-crud-level-1` folder.
- Create `layout_footer.php` file.
- Place the following code.

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```
</div>
<!-- /container -->

<!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
<script src="https://code.jquery.com/jquery-3.2.1.min.js < https://code.jquery.com/jquery-3.2.1.min.js">
```

```
<!-- Latest compiled and minified Bootstrap JavaScript -->
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js">
```

```
<!-- bootbox library -->
<script src="https://cdnjs.cloudflare.com/ajax/libs/bootbox.js/4.4.0/bootbox.min.js">
```

```
</body>
</html>
```

Create custom CSS file

This file is used to change any style we want on our web page. It is also used to override the default style given by Bootstrap.

- Open `php-oop-crud-level-1` folder.

→ Create a file named `style.css`

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```
.left-margin{  
    margin:0 .5em 0 0;  
}  
  
.right-button-margin{  
    margin: 0 0 1em 0;  
    overflow: hidden;  
}  
  
/* some changes in bootstrap modal */  
.modal-body {  
    padding: 20px 20px 0px 20px !important;  
    text-align: center !important;  
}  
  
.modal-footer{  
    text-align: center !important;  
}
```

Output

The layout files we created in this section is meant to be used inside another PHP file. If we try to run the layout files alone, we won't get any meaningful output.

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If you run layout_header.php, it will look like this on the browser.



Notice: Undefined variable: page_title in C:\xampp\htdocs\php-oop-crud-level-1\layout_header.php on line 26

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The custom.css file will look like this.



A screenshot of a web browser window displaying a CSS file at the URL `localhost/php-oop-crud-level-1/libs/css/custom.css`. The browser interface includes back and forward buttons, a search bar, and various icons for saving and sharing. The CSS code shown is:

```
.left-margin{ margin:0 .5em 0 0; }

.right-button-margin{ margin: 0 0 1em 0; overflow: hidden;
}

/* some changes in bootstrap modal */
.modal-body {
    padding: 20px 20px 0px 20px !important;
    text-align: center !important;
}

.modal-footer{
    text-align: center !important;
}
```

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Create a file: create_product.php

Go back to `php-oop-crud-level-1` folder, create a file with a name `create_product.php` and put the following code inside it.

```
<?php
// set page headers
$page_title = "Create Product";
include_once "layout_header.php";

// contents will be here

// footer
include_once "layout_footer.php";
?>
```

Create a “Read Products” Button

The following code will render a button. Replace the comments `// contents will be here` of the previous section with the following.

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```
echo "<div class='right-button-margin'>
      <a href='index.php' class='btn btn-default pull-right'>Read Products</a>
    </div>";
?>
<!-- 'create product' html form will be here -->
<?php
```

Get a Database Connection

We can use it for retrieving categories or saving new product record later. Put the following code before // set page headers comment of `create_product.php` file.

```
// include database and object files
include_once 'config/database.php';
include_once 'objects/product.php';
include_once 'objects/category.php';

// get database connection
$database = new Database();
$db = $database->getConnection();
```

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Create the Database Configuration Class

Getting a database connection will not work without this class. This class file will be included in most PHP files of our PHP OOP CRUD Tutorial.

Create a **config** folder and inside that folder, create a **database.php** file. Open that file and put the following code.

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```
<?php
class Database{

    // specify your own database credentials
    private $host = "localhost";
    private $db_name = "php_oop_crud_level_1";
    private $username = "root";
    private $password = "";
    public $conn;

    // get the database connection
    public function getConnection(){

        $this->conn = null;

        try{
            $this->conn = new PDO("mysql:host=" . $this->host . ";dbname=" . $db_name);
        }catch(PDOException $exception){
            echo "Connection error: " . $exception->getMessage();
        }

        return $this->conn;
    }
}
?>
```

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The following code will render an HTML form. Open `create_product.php` file.

Replace `<!-- 'create product' html form will be here -->` comment with the following code.

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```
<!-- PHP post code will be here -->

<!-- HTML form for creating a product -->
<form action="php echo htmlspecialchars($_SERVER["PHP_SELF"]);?&gt;" method="po

    &lt;table class='table table-hover table-responsive table-bordered'&gt;

        &lt;tr&gt;
            &lt;td&gt;Name&lt;/td&gt;
            &lt;td&gt;&lt;input type='text' name='name' class='form-control' /&gt;&lt;/td&gt;
        &lt;/tr&gt;

        &lt;tr&gt;
            &lt;td&gt;Price&lt;/td&gt;
            &lt;td&gt;&lt;input type='text' name='price' class='form-control' /&gt;&lt;/td&gt;
        &lt;/tr&gt;

        &lt;tr&gt;
            &lt;td&gt;Description&lt;/td&gt;
            &lt;td&gt;&lt;textarea name='description' class='form-control'&gt;&lt;/textarea&gt;&lt;/td&gt;
        &lt;/tr&gt;

        &lt;tr&gt;
            &lt;td&gt;Category&lt;/td&gt;
            &lt;td&gt;</pre
```

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```
<td></td>
<td>
    <button type="submit" class="btn btn-primary">Create</button>
</td>
</tr>

</table>
</form>
```

Loop Through the Categories Records to show as Drop-down

The following code will retrieve categories and put it in a “select” drop-down.

Replace `<!-- categories from database will be here -->` comment of the previous section with the following code.

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```
<?php
// read the product categories from the database
$stmt = $category->read();

// put them in a select drop-down
echo "<select class='form-control' name='category_id'>";
echo "<option>Select category...</option>";

while ($row_category = $stmt->fetch(PDO::FETCH_ASSOC)){
    extract($row_category);
    echo "<option value='{$id}'>{$name}</option>";
}

echo "</select>";
?>
```

Create the Object Class for Categories

Of course, the previous section won't work without the category object class. Create objects folder.

Create `category.php` file. Place the following code.

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```
<?php
class Category{

    // database connection and table name
    private $conn;
    private $table_name = "categories";

    // object properties
    public $id;
    public $name;

    public function __construct($db){
        $this->conn = $db;
    }

    // used by select drop-down list
    function read(){
        //select all data
        $query = "SELECT
                  id, name
                 FROM
                  " . $this->table_name . "
                 ORDER BY
                  name";
    }
}
```

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```
}
```

```
?>
```

Prepare readName() method

It will get the category name instead of showing just an ID. Add the following code inside our category.php, you will see this method used in the next few sections.

```
// used to read category name by its ID
function readName(){

    $query = "SELECT name FROM " . $this->table_name . " WHERE id = ? limit 0,1";

    $stmt = $this->conn->prepare( $query );
    $stmt->bindParam(1, $this->id);
    $stmt->execute();

    $row = $stmt->fetch(PDO::FETCH_ASSOC);

    $this->name = $row[ 'name' ];
}
```

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OK

The user will enter the values in the HTML form and when the create (submit) button was clicked, values will be sent via POST request, the code below will save it in the database.

Open `create_product.php` file. Replace `<!-- PHP post code will be here -->` comment with the following code.

```
<?php
// if the form was submitted - PHP OOP CRUD Tutorial
if($_POST){

    // set product property values
    $product->name = $_POST['name'];
    $product->price = $_POST['price'];
    $product->description = $_POST['description'];
    $product->category_id = $_POST['category_id'];

    // create the product
    if($product->create()){
        echo "<div class='alert alert-success'>Product was created.</div>";
    }

    // if unable to create the product, tell the user
}
```

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OK



Create the Object Class for Products

The previous section will not work without the product object. Open objects folder. Create product.php file. Open that file and put the following code.

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OK

X

```
<?php
class Product{

    // database connection and table name
    private $conn;
    private $table_name = "products";

    // object properties
    public $id;
    public $name;
    public $price;
    public $description;
    public $category_id;
    public $timestamp;

    public function __construct($db){
        $this->conn = $db;
    }

    // create product
    function create(){

        //write query
        $query = "INSERT INTO
                  " . $this->table_name . "
```

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OK

```
// posted values
$this->name=htmlspecialchars(strip_tags($this->name));
$this->price=htmlspecialchars(strip_tags($this->price));
$this->description=htmlspecialchars(strip_tags($this->description));
$this->category_id=htmlspecialchars(strip_tags($this->category_id));

// to get time-stamp for 'created' field
$this->timestamp = date('Y-m-d H:i:s');

// bind values
$stmt->bindParam(":name", $this->name);
$stmt->bindParam(":price", $this->price);
$stmt->bindParam(":description", $this->description);
$stmt->bindParam(":category_id", $this->category_id);
$stmt->bindParam(":created", $this->timestamp);

if($stmt->execute()){
    return true;
} else{
    return false;
}

}
?>
```

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OK

Form to create product.



Create Product

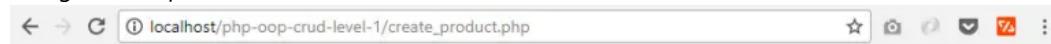
Read Products	
Name	<input type="text"/>
Price	<input type="text"/>
Description	<input type="text"/>
Category	<input type="text" value="Select category..."/>
	<input type="button" value="Create"/>

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[OK](#)



Categories drop down in the form.



Create Product

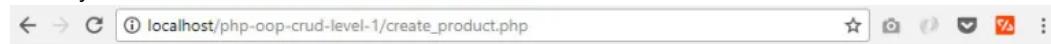
Read Products	
Name	Pillow 1.1
Price	29.99
Description	The best pillow for coders.
Category	<ul style="list-style-type: none">Select category...Select category...ElectronicsFashionMotors

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OK

When you fill out the form and clicked the "Create" button.



Create Product

[Read Products](#)

Product was created.

Name	<input type="text"/>
Price	<input type="text"/>
Description	<input type="text"/>
Category	<input type="text" value="Select category..."/>

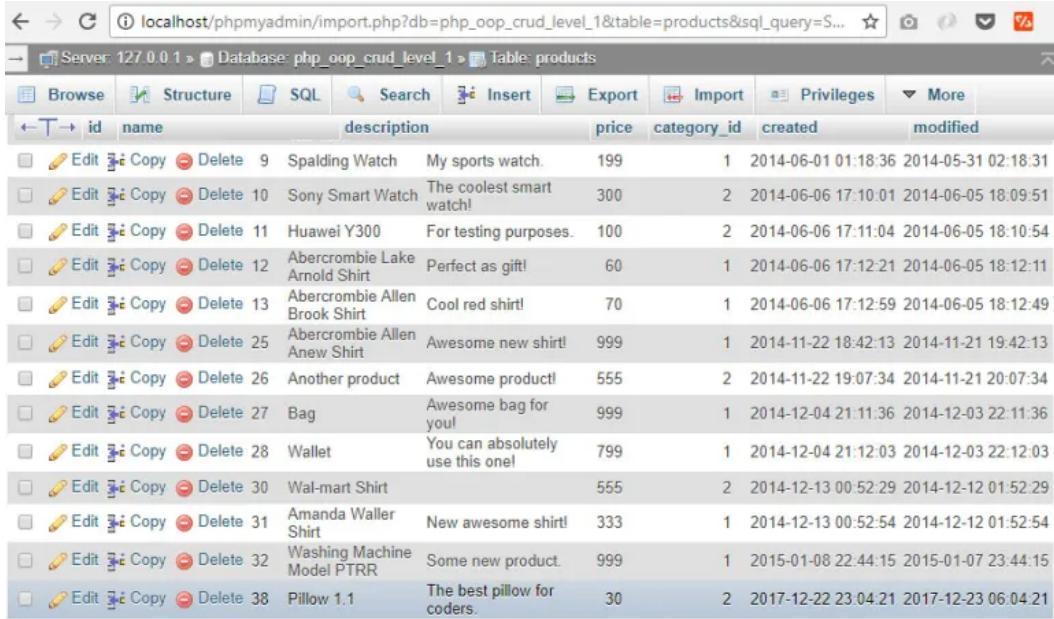
[Create](#)

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[OK](#)

X

Changes in the database.



The screenshot shows the phpMyAdmin interface with the following details:

- Server: 127.0.0.1
- Database: php_oop_crud_level_1
- Table: products

The products table has the following columns and data:

	id	name	description	price	category_id	created	modified
<input type="checkbox"/>	9	Spalding Watch	My sports watch.	199	1	2014-06-01 01:18:36	2014-05-31 02:18:31
<input type="checkbox"/>	10	Sony Smart Watch	The coolest smart watch!	300	2	2014-06-06 17:10:01	2014-06-05 18:09:51
<input type="checkbox"/>	11	Huawei Y300	For testing purposes.	100	2	2014-06-06 17:11:04	2014-06-05 18:10:54
<input type="checkbox"/>	12	Abercrombie Lake Arnold Shirt	Perfect as gift!	60	1	2014-06-06 17:12:21	2014-06-05 18:12:11
<input type="checkbox"/>	13	Abercrombie Allen Brook Shirt	Cool red shirt!	70	1	2014-06-06 17:12:59	2014-06-05 18:12:49
<input type="checkbox"/>	25	Abercrombie Allen Anew Shirt	Awesome new shirt!	999	1	2014-11-22 18:42:13	2014-11-21 19:42:13
<input type="checkbox"/>	26	Another product	Awesome product!	555	2	2014-11-22 19:07:34	2014-11-21 20:07:34
<input type="checkbox"/>	27	Bag	Awesome bag for you!	999	1	2014-12-04 21:11:36	2014-12-03 22:11:36
<input type="checkbox"/>	28	Wallet	You can absolutely use this one!	799	1	2014-12-04 21:12:03	2014-12-03 22:12:03
<input type="checkbox"/>	30	Wal-mart Shirt		555	2	2014-12-13 00:52:29	2014-12-12 01:52:29
<input type="checkbox"/>	31	Amanda Waller Shirt	New awesome shirt!	333	1	2014-12-13 00:52:54	2014-12-12 01:52:54
<input type="checkbox"/>	32	Washing Machine Model PTRR	Some new product.	999	1	2015-01-08 22:44:15	2015-01-07 23:44:15
<input type="checkbox"/>	38	Pillow 1.1	The best pillow for coders.	30	2	2017-12-22 23:04:21	2017-12-23 06:04:21

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OK

X

In this part of our PHP OOP CRUD tutorial, we will list the records from the database.

Create File: index.php

Create a new file and name it `index.php`. This file will show the main page of our web app. Put the following code inside it.

```
<?php
// set page header
$page_title = "Read Products";
include_once "layout_header.php";

// contents will be here

// set page footer
include_once "layout_footer.php";
?>
```

Add a “Create Product” button

The following code will render a button. When this button was clicked, it will show us a page where

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OK

```
echo "<div class='right-button-margin'>
    <a href='create_product.php' class='btn btn-default pull-right'>Create Pro
</div>";
```

Configure Pagination Variables

Pagination is very important if you have thousands of data from the database. Put the following code before the set page header comment of index.php file.

```
// page given in URL parameter, default page is one
$page = isset($_GET['page']) ? $_GET['page'] : 1;

// set number of records per page
$records_per_page = 5;

// calculate for the query LIMIT clause
$from_record_num = ($records_per_page * $page) - $records_per_page;

// retrieve records here
```

Retrieving Records from the Database

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```
// include database and object files
include_once 'config/database.php';
include_once 'objects/product.php';
include_once 'objects/category.php';

// instantiate database and objects
$database = new Database();
$db = $database->getConn();

$product = new Product($db);
$category = new Category($db);

// query products
$stmt = $product->readAll($from_record_num, $records_per_page);
$num = $stmt->rowCount();
```

Add `readAll()` Method in `product.php`

Retrieving records in the previous section won't work without this method. Put the following code inside our `"product.php"` file which is inside the `"objects"` folder.

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OK

```
function readAll($from_record_num, $records_per_page){

    $query = "SELECT
              id, name, description, price, category_id
        FROM
              " . $this->table_name . "
        ORDER BY
              name ASC
        LIMIT
              {$from_record_num}, {$records_per_page};

    $stmt = $this->conn->prepare( $query );
    $stmt->execute();

    return $stmt;
}
```

Display data from the database

This time, we will show the list of records to the user. An HTML table will hold our data. Put the following code after the section 6.2 code.

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X

OK

```
// display the products if there are any
if($num>0){

    echo "<table class='table table-hover table-responsive table-bordered'>";
    echo "<tr>";
        echo "<th>Product</th>";
        echo "<th>Price</th>";
        echo "<th>Description</th>";
        echo "<th>Category</th>";
        echo "<th>Actions</th>";
    echo "</tr>";

    while ($row = $stmt->fetch(PDO::FETCH_ASSOC)){

        extract($row);

        echo "<tr>";
            echo "<td>{$name}</td>";
            echo "<td>{$price}</td>";
            echo "<td>{$description}</td>";
            echo "<td>";
                $category->id = $category_id;
                $category->readName();
                echo $category->name;
            echo "</td>";


    }
}
```

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OK

```
        echo "</tr>";  
  
    }  
  
    echo "</table>";  
  
    // paging buttons will be here  
}  
  
// tell the user there are no products  
else{  
    echo "<div class='alert alert-info'>No products found.</div>";  
}
```

Put the Read, Edit and Delete Action Buttons

The following code will render three buttons: Read, Edit and Delete button.

Inside the “while” loop of the previous section, there is a comment “read one, edit and delete button will be here”, replace that with the following code.

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```
// read, edit and delete buttons
echo "<a href='read_one.php?id={$id}' class='btn btn-primary left-margin'>
    <span class='glyphicon glyphicon-list'></span> Read
</a>

<a href='update_product.php?id={$id}' class='btn btn-info left-margin'>
    <span class='glyphicon glyphicon-edit'></span> Edit
</a>

<a delete-id='{$id}' class='btn btn-danger delete-object'>
    <span class='glyphicon glyphicon-remove'></span> Delete
</a>";
```

Create paging.php for Paging Buttons

The following code will show our pagination buttons. Create a new file and name it “paging.php”.

Open that file and put the following code.

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[OK](#)



```
<?php
echo "<ul class='pagination'>";

// button for first page
if($page>1){
    echo "<li><a href='{$page_url}' title='Go to the first page.'>";
        echo "First";
    echo "</a></li>";
}

// calculate total pages
$total_pages = ceil($total_rows / $records_per_page);

// range of links to show
$range = 2;

// display links to 'range of pages' around 'current page'
$initial_num = $page - $range;
$condition_limit_num = ($page + $range) + 1;

for ($x=$initial_num; $x<$condition_limit_num; $x++) {

    // be sure '$x is greater than 0' AND 'less than or equal to the $total_pa
    if (($x > 0) && ($x <= $total_pages)) {
```

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OK

```
// not current page
else {
    echo "<li><a href='{$page_url}page=$x'>$x</a></li>";
}
}

// button for last page
if($page < $total_pages){
    echo "<li><a href='".$page_url. "page={$total_pages}"' title='Last page is
        echo "Last";
    echo "</a></li>";
}

echo "</ul>";
?>
```

Add the countAll() method in objects/product.php

The following code will be used to count the total number of records in the database. This will be used for pagination.

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OK



```
// used for paging products
public function countAll(){

    $query = "SELECT id FROM " . $this->table_name . "";

    $stmt = $this->conn->prepare( $query );
    $stmt->execute();

    $num = $stmt->rowCount();

    return $num;
}
```

Include paging.php in index.php

The following code will show our pagination buttons under our records list. Put the following code after the closing “table” tag of section 6.6 above.

```
// the page where this paging is used
$page_url = "index.php?";

// count all products in the database to calculate total pages
```

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OK

Output

Run <http://localhost/php-oop-crud-level-1/index.php> < <http://localhost/php-oop-crud-level-1/index.php>> on your browser, you should see something like the image below.



List of records, page 1.



Read Products

[Create Product](#)

Product	Price	Description	Category	Actions
Abercrombie Allen Anew Shirt	999	Awesome new shirt!	Fashion	Read Edit Delete
Abercrombie Allen Brook Shirt	70	Cool red shirt!	Fashion	Read Edit Delete
Abercrombie Lake Arnold Shirt	60	Perfect as gift!	Fashion	Read Edit Delete
Amanda Waller Shirt	333	New awesome shirt!	Fashion	Read Edit Delete
Another product	555	Awesome product!	Electronics	Read Edit Delete

1 2 3 Last

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X

List of records, page 2.



Read Products

Product	Price	Description	Category	Actions
Bag	999	Awesome bag for you!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Bench Shirt	29	The best shirt!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Google Nexus 4	299	The most awesome phone of 2013!	Electronics	<button>Read</button> <button>Edit</button> <button>Delete</button>
Huawei Y300	100	For testing purposes.	Electronics	<button>Read</button> <button>Edit</button> <button>Delete</button>
Lenovo Laptop	399	My business partner.	Electronics	<button>Read</button> <button>Edit</button> <button>Delete</button>

First 2 3 4 Last

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OK

X

I know our PHP OOP CRUD tutorial is kinda long. Please take a break or drink some coffee first!

Create File: update_product.php

Create update_product.php file, open that file and put the following code.

```
<?php
// retrieve one product will be here

// set page header
$page_title = "Update Product";
include_once "layout_header.php";

// contents will be here

// set page footer
include_once "layout_footer.php";
?>
```

Create a "Read Products" Button

The following code will render a button. This button, when clicked, will let us go back to the records

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OK

X

```
echo "<div class='right-button-margin'>
      <a href='index.php' class='btn btn-default pull-right'>Read Products
    </div>";

?>
<!-- 'update product' form will be here -->
```

Retrieve One Product Information Based on the Given ID.

The following code will retrieve data that will populate our HTML form. This is important because this will let the user know what exactly the record he is updating.

Open `update_product.php` file. Replace “// retrieve one product will be here” comment with the following code.

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OK



```
// get ID of the product to be edited
$id = isset($_GET['id']) ? $_GET['id'] : die('ERROR: missing ID.');

// include database and object files
include_once 'config/database.php';
include_once 'objects/product.php';
include_once 'objects/category.php';

// get database connection
$database = new Database();
$db = $database->getConnection();

// prepare objects
$product = new Product($db);
$category = new Category($db);

// set ID property of product to be edited
$product->id = $id;

// read the details of product to be edited
$product->readOne();
```

Add readOne() method in the Product Object Class.

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OK



```
function readOne(){

    $query = "SELECT
              name, price, description, category_id
            FROM
              " . $this->table_name . "
            WHERE
              id = ?
            LIMIT
              0,1";

    $stmt = $this->conn->prepare( $query );
    $stmt->bindParam(1, $this->id);
    $stmt->execute();

    $row = $stmt->fetch(PDO::FETCH_ASSOC);

    $this->name = $row['name'];
    $this->price = $row['price'];
    $this->description = $row['description'];
    $this->category_id = $row['category_id'];
}
```

Put the Values in the Form.

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OK



```
<!-- post code will be here -->

<form action=<?php echo htmlspecialchars($_SERVER["PHP_SELF"] . "?id={$id}");>
  <table class='table table-hover table-responsive table-bordered'>

    <tr>
      <td>Name</td>
      <td><input type='text' name='name' value='<?php echo $product->name;'></td>
    </tr>

    <tr>
      <td>Price</td>
      <td><input type='text' name='price' value='<?php echo $product->price;'></td>
    </tr>

    <tr>
      <td>Description</td>
      <td><textarea name='description' class='form-control'><?php echo $product->description;'></td>
    </tr>

    <tr>
      <td>Category</td>
      <td>
        <!-- categories select drop-down will be here -->
      </td>
    </tr>
```

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OK



```
        <button type="submit" class="btn btn-primary">Update</button>
    </td>
</tr>

</table>
</form>
```

Loop Through the Categories Records to show as Drop-down

The following code will list the categories in a drop-down.

Notice that we put “if(\$product->category_id==\$category_id){...}” inside the while loop. This is to pre-select the option of the current record.

Replace the previous section’s comments “categories select drop-down will be here” with the following code.

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```
<?php
$stmt = $category->read();

// put them in a select drop-down
echo "<select class='form-control' name='category_id'>";

echo "<option>Please select...</option>";
while ($row_category = $stmt->fetch(PDO::FETCH_ASSOC)){
    $category_id=$row_category['id'];
    $category_name = $row_category['name'];

    // current category of the product must be selected
    if($product->category_id==$category_id){
        echo "<option value='".$category_id."' selected>";
    }else{
        echo "<option value='".$category_id"'>";
    }

    echo "<option value='".$category_name'>";
}
echo "</select>";
?>
```

Code When Form was Submitted

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OK



Open update_product.php file. Replace “<!-- post code will be here -->” comment with the following code.</p>

```
<?php
// if the form was submitted
if($_POST){

    // set product property values
    $product->name = $_POST['name'];
    $product->price = $_POST['price'];
    $product->description = $_POST['description'];
    $product->category_id = $_POST['category_id'];

    // update the product
    if($product->update()){
        echo "<div class='alert alert-success alert-dismissible'>";
        echo "Product was updated.";
        echo "</div>";
    }

    // if unable to update the product, tell the user
    else{
        echo "<div class='alert alert-danger alert-dismissible'>";
        echo "Unable to update product.";
    }
}
```

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OK



Update Code in the Product Class

The following code will make the previous section's "\$product->update()" method work. Open our "product.php" which is inside the "objects" folder and add the following code.

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OK



```
function update(){

    $query = "UPDATE
              " . $this->table_name . "
        SET
            name = :name,
            price = :price,
            description = :description,
            category_id = :category_id
        WHERE
            id = :id";

    $stmt = $this->conn->prepare($query);

    // posted values
    $this->name=htmlspecialchars(strip_tags($this->name));
    $this->price=htmlspecialchars(strip_tags($this->price));
    $this->description=htmlspecialchars(strip_tags($this->description));
    $this->category_id=htmlspecialchars(strip_tags($this->category_id));
    $this->id=htmlspecialchars(strip_tags($this->id));

    // bind parameters
    $stmt->bindParam(':name', $this->name);
    $stmt->bindParam(':price', $this->price);
    $stmt->bindParam(':desription', $this->description);
```

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OK

```
        return true;  
    }  
  
    return false;  
}
```

Output

Click any "Edit" button in the index page. The update record form should look like the following.

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OK





Update Product

Read Products	
Name	Pillow 1.1 EDITED
Price	30
Description	The best pillow for coders.
Category	Electronics
<input type="button" value="Update"/>	

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X

OK

When you submit the form, a message will be shown.



Update Product

[Read Products](#)

Product was updated.

Name	Pillow 1.1 EDITED
Price	30
Description	The best pillow for coders.
Category	Fashion
	<input type="button" value="Update"/>

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[OK](#)

X

A record was changed in the database.

	Edit	Copy	Delete	7	Lenovo Laptop	My business partner.	399	2	2014-06-01 01:13:45	2014-05-31 02:13:39
	Edit	Copy	Delete	8	Samsung Galaxy Tab 10.1	Good tablet.	259	2	2014-06-01 01:14:13	2014-05-31 02:14:08
	Edit	Copy	Delete	9	Spalding Watch	My sports watch.	199	1	2014-06-01 01:18:36	2014-05-31 02:18:31
	Edit	Copy	Delete	10	Sony Smart Watch	The coolest smart watch!	300	2	2014-06-06 17:10:01	2014-06-05 18:09:51
	Edit	Copy	Delete	11	Huawei Y300	For testing purposes.	100	2	2014-06-06 17:11:04	2014-06-05 18:10:54
	Edit	Copy	Delete	12	Abercrombie Lake Arnold Shirt	Perfect as gift!	60	1	2014-06-06 17:12:21	2014-06-05 18:12:11
	Edit	Copy	Delete	13	Abercrombie Allen Brook Shirt	Cool red shirt!	70	1	2014-06-06 17:12:59	2014-06-05 18:12:49
	Edit	Copy	Delete	25	Abercrombie Allen Anew Shirt	Awesome new shirt!	999	1	2014-11-22 18:42:13	2014-11-21 19:42:13
	Edit	Copy	Delete	26	Another product	Awesome product!	555	2	2014-11-22 19:07:34	2014-11-21 20:07:34
	Edit	Copy	Delete	27	Bag	Awesome bag for you!	999	1	2014-12-04 21:11:36	2014-12-03 22:11:36
	Edit	Copy	Delete	28	Wallet	You can absolutely use this one!	799	1	2014-12-04 21:12:03	2014-12-03 22:12:03
	Edit	Copy	Delete	30	Wal-mart Shirt		555	2	2014-12-13 00:52:29	2014-12-12 01:52:29
	Edit	Copy	Delete	31	Amanda Waller Shirt	New awesome shirt!	333	1	2014-12-13 00:52:54	2014-12-12 01:52:54
	Edit	Copy	Delete	32	Washing Machine Model PTRR	Some new product.	999	1	2015-01-08 22:44:15	2015-01-07 23:44:15
	Edit	Copy	Delete	38	Pillow 1.1 EDITED	The best pillow for coders.	30	1	2017-12-22 23:04:21	2017-12-23 06:04:21

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OK

We previously made the code for "update record", this section for reading one record from a database will be easier to do.

Create read_one.php file

This is the page where the data of a single record will be displayed. Create a new file and name it "read_one.php", open that file and put the following code.

```
<?php
// set page headers
$page_title = "Read One Product";
include_once "layout_header.php";

// read products button
echo "<div class='right-button-margin'>";
    echo "<a href='index.php' class='btn btn-primary pull-right'>";
        echo "<span class='glyphicon glyphicon-list'></span> Read Products";
    echo "</a>";
echo "</div>";

// set footer
include_once "layout_footer.php";
```

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X

OK

The following code will read a single record from the database. Put the following code before the "set page headers" comments of the previous section.

```
// get ID of the product to be read
$id = isset($_GET['id']) ? $_GET['id'] : die('ERROR: missing ID.');

// include database and object files
include_once 'config/database.php';
include_once 'objects/product.php';
include_once 'objects/category.php';

// get database connection
$database = new Database();
$db = $database->getConnection();

// prepare objects
$product = new Product($db);
$category = new Category($db);

// set ID property of product to be read
$product->id = $id;

// read the details of product to be read
$product->readOne();
```

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OK

This time, we will display the record details on an HTML table. Put the following code under the closing "div" tag of "Read Products" button.

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OK



```
// HTML table for displaying a product details
echo "<table class='table table-hover table-responsive table-bordered'>";

echo "<tr>";
    echo "<td>Name</td>";
    echo "<td>{$product->name}</td>";
echo "</tr>";

echo "<tr>";
    echo "<td>Price</td>";
    echo "<td>${$product->price}</td>";
echo "</tr>";

echo "<tr>";
    echo "<td>Description</td>";
    echo "<td>{$product->description}</td>";
echo "</tr>";

echo "<tr>";
    echo "<td>Category</td>";
    echo "<td>";
        // display category name
        $category->id=$product->category_id;
        $category->readName();
        echo $category->name;
```

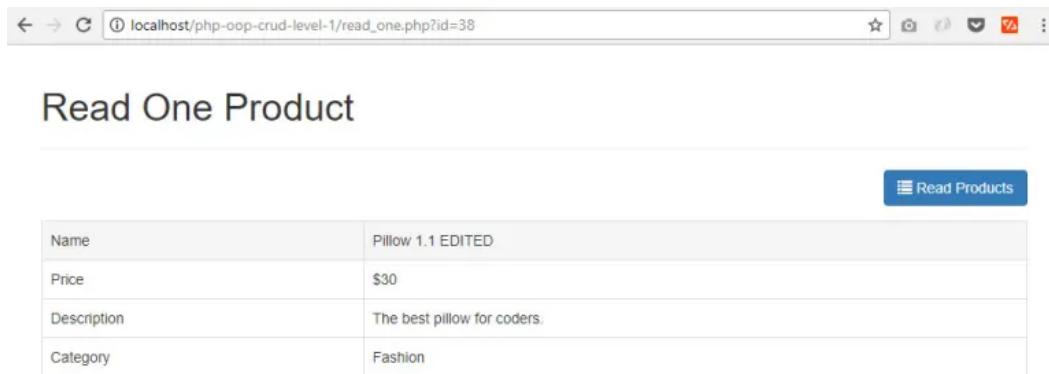
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OK

Output

Click any "Read" button in the index page, you should see something like the image below.



The screenshot shows a web browser window with the URL `localhost/php-oop-crud-level-1/read_one.php?id=38`. The title of the page is "Read One Product". On the right, there is a blue button labeled "Read Products". Below it is a table with four rows:

Name	Pillow 1.1 EDITED
Price	\$30
Description	The best pillow for coders.
Category	Fashion

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[OK](#)



Deleting Record in PHP the OOP Way

This is the last coding part of our PHP OOP CRUD Tutorial. Enjoy every code!

Put this JavaScript code in layout_footer.php

Put the following JavaScript code before the closing "body" tag in layout_footer.php file. We used [Bootbox.js < http://bootboxjs.com/>](http://bootboxjs.com/) to make a Bootstrap-style confirm dialog box.

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OK



```
<script>
// JavaScript for deleting product
$(document).on('click', '.delete-object', function(){

    var id = $(this).attr('delete-id');

    bootbox.confirm({
        message: "<h4>Are you sure?</h4>",
        buttons: {
            confirm: {
                label: '<span class="glyphicon glyphicon-ok"></span> Yes',
                className: 'btn-danger'
            },
            cancel: {
                label: '<span class="glyphicon glyphicon-remove"></span> No',
                className: 'btn-primary'
            }
        },
        callback: function (result) {

            if(result==true){
                $.post('delete_product.php', {
                    object_id: id
                }, function(data){
                    location.reload();
                });
            }
        }
    });
});
```

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[OK](#) [X](#)

```
});  
    return false;  
});  
</script>
```

Create delete_product.php

Create a new file and name it "delete_product.php". This file accepts the ID posted by the JavaScript code in the previous section. A record will be deleted from the database based on posted ID.

Open delete_product.php and put the following code.

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OK



```
<?php
// check if value was posted
if($_POST){

    // include database and object file
    include_once 'config/database.php';
    include_once 'objects/product.php';

    // get database connection
    $database = new Database();
    $db = $database->getConnection();

    // prepare product object
    $product = new Product($db);

    // set product id to be deleted
    $product->id = $_POST['object_id'];

    // delete the product
    if($product->delete()){
        echo "Object was deleted.";
    }

    // if unable to delete the product
    else{
}
```

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OK

Delete Code in Product Class

The previous section will not work with the "delete()" method in the product object. Open "product.php" which is inside the "objects" folder and put the following code.

```
// delete the product
function delete(){

    $query = "DELETE FROM " . $this->table_name . " WHERE id = ?";

    $stmt = $this->conn->prepare($query);
    $stmt->bindParam(1, $this->id);

    if($result = $stmt->execute()){
        return true;
    }else{
        return false;
    }
}
```

Output

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[OK](#) X

The screenshot shows a web browser displaying a PHP OOP CRUD application. The main page lists products in a table with columns: Product, Price, Description, Category, and Actions. The Actions column contains three buttons: Read, Edit, and Delete. A modal dialog box is overlaid on the page, asking 'Are you sure?' with 'No' and 'Yes' buttons. In the top right corner of the main page, there is a 'Create Product' button.

Product	Price	Description	Category	Actions
Abercrombie Allen Anew Shirt	999	Awesome new shirt!	Fashion	Read Edit Delete
Abercrombie Allen Brook Shirt	70	Cool red shirt!	Fashion	Read Edit Delete
Abercrombie Lake Arnold Shirt	60	Perfect as gift!	Fashion	Read Edit Delete
Armando Waller Shirt	333	New awesome shirt!	Fashion	Read Edit Delete
Another product	555	Awesome product!	Electronics	Read Edit Delete

1 2 3 Last

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OK

If the user clicks "OK" the record will be deleted and gone in the table.



Read Products

Product	Price	Description	Category	Actions
Abercrombie Allen Brook Shirt	70	Cool red shirt!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Abercrombie Lake Arnold Shirt	60	Perfect as gift!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Amanda Waller Shirt	333	New awesome shirt!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Another product	555	Awesome product!	Electronics	<button>Read</button> <button>Edit</button> <button>Delete</button>
Bag	999	Awesome bag for you!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>

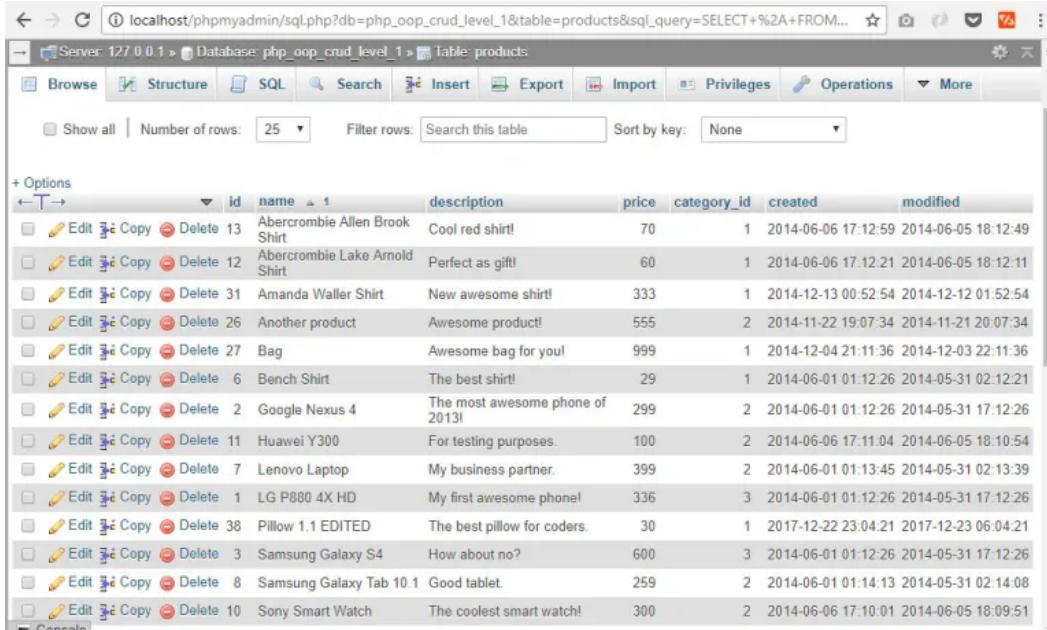
1 2 3 Last

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OK

X

A record was deleted in the database.



The screenshot shows the phpMyAdmin interface for a database named 'php_oop_crud_level_1'. The current table is 'products'. The table has columns: id, name, description, price, category_id, created, and modified. There are 14 rows of data, each with an 'Edit' and 'Delete' link. The data includes various products like 'Abercrombie Allen Brook Shirt', 'Abercrombie Lake Arnold Shirt', 'Amanda Waller Shirt', etc., with their respective details and timestamps.

	Edit	Copy	Delete	13	Abercrombie Allen Brook Shirt	Cool red shirt!	70	1	2014-06-06 17:12:59	2014-06-05 18:12:49
	Edit	Copy	Delete	12	Abercrombie Lake Arnold Shirt	Perfect as gift!	60	1	2014-06-06 17:12:21	2014-06-05 18:12:11
	Edit	Copy	Delete	31	Amanda Waller Shirt	New awesome shirt!	333	1	2014-12-13 00:52:54	2014-12-12 01:52:54
	Edit	Copy	Delete	26	Another product	Awesome product!	555	2	2014-11-22 19:07:34	2014-11-21 20:07:34
	Edit	Copy	Delete	27	Bag	Awesome bag for you!	999	1	2014-12-04 21:11:36	2014-12-03 22:11:36
	Edit	Copy	Delete	6	Bench Shirt	The best shirt!	29	1	2014-06-01 01:12:26	2014-05-31 02:12:21
	Edit	Copy	Delete	2	Google Nexus 4	The most awesome phone of 2013!	299	2	2014-06-01 01:12:26	2014-05-31 17:12:26
	Edit	Copy	Delete	11	Huawei Y300	For testing purposes.	100	2	2014-06-06 17:11:04	2014-06-05 18:10:54
	Edit	Copy	Delete	7	Lenovo Laptop	My business partner.	399	2	2014-06-01 01:13:45	2014-05-31 02:13:39
	Edit	Copy	Delete	1	LG P880 4X HD	My first awesome phone!	336	3	2014-06-01 01:12:26	2014-05-31 17:12:26
	Edit	Copy	Delete	38	Pillow 1.1 EDITED	The best pillow for coders.	30	1	2017-12-22 23:04:21	2017-12-23 06:04:21
	Edit	Copy	Delete	3	Samsung Galaxy S4	How about no?	600	3	2014-06-01 01:12:26	2014-05-31 17:12:26
	Edit	Copy	Delete	8	Samsung Galaxy Tab 10.1	Good tablet.	259	2	2014-06-01 01:14:13	2014-05-31 02:14:08
	Edit	Copy	Delete	10	Sony Smart Watch	The coolest smart watch!	300	2	2014-06-06 17:10:01	2014-06-05 18:09:51

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OK

We'll continue by adding the search feature. This will answer the question: How to search data from database in php? This is a very useful feature because you enable your users to easily search a certain data from our MySQL database.

Please note that this is a bonus section. The code in this section is not included in our LEVEL 1 source code download.

Change index.php

We have to change index.php because we are adding a "search" feature and we want our code to be short. Our index.php will now look like the following code.

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OK

X

```
<?php
// core.php holds pagination variables
include_once 'config/core.php';

// include database and object files
include_once 'config/database.php';
include_once 'objects/product.php';
include_once 'objects/category.php';

// instantiate database and product object
$database = new Database();
$db = $database->getConnection();

$product = new Product($db);
$category = new Category($db);

$page_title = "Read Products";
include_once "layout_header.php";

// query products
$stmt = $product->readAll($from_record_num, $records_per_page);

// specify the page where paging is used
$page_url = "index.php?";
```

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OK

```
// layout_footer.php holds our javascript and closing html tags  
include_once "layout_footer.php";  
?>
```

Create read_template.php

Why do we need this template? We need it because exactly the same code can be used by `index.php` and `search.php` for displaying a list of records. Using a template means lesser code.

This template holds our search form as well.

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OK



```
<?php
// search form
echo "<form role='search' action='search.php'>";
    echo "<div class='input-group col-md-3 pull-left margin-right-1em'>";
        $search_value=isset($search_term) ? "value='{$search_term}'" : "";
        echo "<input type='text' class='form-control' placeholder='Type product name here' $search_value>";
        echo "<div class='input-group-btn'>";
            echo "<button class='btn btn-primary' type='submit'><i class='glyphicon glyphicon-search'></i> Search</button>";
        echo "</div>";
    echo "</div>";
echo "</form>";

// create product button
echo "<div class='right-button-margin'>";
    echo "<a href='create_product.php' class='btn btn-primary pull-right'>";
        echo "<span class='glyphicon glyphicon-plus'></span> Create Product";
    echo "</a>";
echo "</div>";

// display the products if there are any
if($total_rows>0){

    echo "<table class='table table-hover table-responsive table-bordered'>";
        echo "<tr>";
            echo "<th>Product</th>";
```

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OK

```
while ($row = $stmt->fetch(PDO::FETCH_ASSOC)) {  
    extract($row);  
  
    echo "<tr>";  
    echo "<td>{$name}</td>";  
    echo "<td>{$price}</td>";  
    echo "<td>{$description}</td>";  
    echo "<td>";  
        $category->id = $category_id;  
        $category->readName();  
        echo $category->name;  
    echo "</td>";  
  
    echo "<td>";  
  
        // read product button  
        echo "<a href='read_one.php?id={$id}' class='btn btn-primary'>";  
            echo "<span class='glyphicon glyphicon-list'></span> R";  
        echo "</a>";  
  
        // edit product button  
        echo "<a href='update_product.php?id={$id}' class='btn btn-primary'>";  
            echo "<span class='glyphicon glyphicon-edit'></span> E";  
        echo "</a>";  
    echo "</td>";  
}  
echo "</tr>";  
}
```

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OK

```
        echo "</a>";  
  
        echo "</td>";  
  
        echo "</tr>";  
  
    }  
  
    echo "</table>";  
  
    // paging buttons  
    include_once 'paging.php';  
}  
  
// tell the user there are no products  
else{  
    echo "<div class='alert alert-danger'>No products found.</div>";  
}  
?  
?>
```

Create core.php in "config" folder

Create a new folder and name it "config". Inside that folder, create a new file and name it

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OK

This file will hold our pagination variables. Using a `core.php` file is a good practice, it can be used to hold other configuration values that you might need in the future.

Open `core.php` and put the following code.

```
<?php
// page given in URL parameter, default page is one
$page = isset($_GET['page']) ? $_GET['page'] : 1;

// set number of records per page
$records_per_page = 5;

// calculate for the query LIMIT clause
$from_record_num = ($records_per_page * $page) - $records_per_page;
?>
```

Change `paging.php` code

The new `paging.php` code will look like the following.



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OK

X

```
<?php
echo "<ul class=\"pagination\">";

// button for first page
if($page>1){
    echo "<li><a href='{$page_url}' title='Go to the first page.'>";
        echo "First Page";
    echo "</a></li>";
}

// count all products in the database to calculate total pages
$total_pages = ceil($total_rows / $records_per_page);

// range of links to show
$range = 2;

// display links to 'range of pages' around 'current page'
$initial_num = $page - $range;
$condition_limit_num = ($page + $range) + 1;

for ($x=$initial_num; $x<$condition_limit_num; $x++) {

    // be sure '$x is greater than 0' AND 'less than or equal to the $total_pa
    if (($x > 0) && ($x <= $total_pages)) {
```

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```
// not current page
else {
    echo "<li><a href='{$page_url}page=$x'>$x</a></li>";
}
}

// button for last page
if($page<$total_pages){
    echo "<li><a href='" . $page_url . "page={$total_pages}"' title='Last page in list'>Last Page</a></li>";
}

echo "</ul>";
?>
```

Include core.php and read_template.php

The core.php file will be included at the beginning of index.php file. The read_template.php will be included before the layout_footer.php inclusion. The new index.php will look like the following code

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OK



```
<?php
// core.php holds pagination variables
include_once 'config/core.php';

// include database and object files
include_once 'config/database.php';
include_once 'objects/product.php';
include_once 'objects/category.php';

// instantiate database and product object
$database = new Database();
$db = $database->getConnection();

$product = new Product($db);
$category = new Category($db);

$page_title = "Read Products";
include_once "layout_header.php";

// query products
$stmt = $product->readAll($from_record_num, $records_per_page);

// specify the page where paging is used
$page_url = "index.php?";
```

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OK

```
// layout_footer.php holds our javascript and closing html tags  
include_once "layout_footer.php";  
?>
```

Create search.php

This is the most important file of this section. This file will display the records based on a user's search term.

Create a new file and name it "search.php". Open that file and put the following code.

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OK



```
<?php
// core.php holds pagination variables
include_once 'config/core.php';

// include database and object files
include_once 'config/database.php';
include_once 'objects/product.php';
include_once 'objects/category.php';

// instantiate database and product object
$database = new Database();
$db = $database->getConnection();

$product = new Product($db);
$category = new Category($db);

// get search term
$search_term=isset($_GET['s']) ? $_GET['s'] : '';

$page_title = "You searched for \"{$search_term}\"";
include_once "layout_header.php";

// query products
$stmt = $product->search($search_term, $from_record_num, $records_per_page);
```

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```
// read_template.php controls how the product list will be rendered
include_once "read_template.php";

// layout_footer.php holds our javascript and closing html tags
include_once "layout_footer.php";
?>
```

Add search() and countAll_BySearch() methods

Open “product.php” file which is inside the “objects” folder. Add the following methods in the class.

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OK



```
// read products by search term
public function search($search_term, $from_record_num, $records_per_page){

    // select query
    $query = "SELECT
        c.name as category_name, p.id, p.name, p.description, p.price,
        FROM
            " . $this->table_name . " p
        LEFT JOIN
            categories c
        ON p.category_id = c.id
    WHERE
        p.name LIKE ? OR p.description LIKE ?
    ORDER BY
        p.name ASC
    LIMIT
        ?, ?";

    // prepare query statement
    $stmt = $this->conn->prepare( $query );

    // bind variable values
    $search_term = "%{$search_term}%";
    $stmt->bindParam(1, $search_term);
    $stmt->bindParam(2, $search_term);
}
```

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```
// return values from database
return $stmt;
}

public function countAll_BySearch($search_term){

    // select query
    $query = "SELECT
        COUNT(*) as total_rows
    FROM
        " . $this->table_name . " p
    WHERE
        p.name LIKE ? OR p.description LIKE ?";

    // prepare query statement
    $stmt = $this->conn->prepare( $query );

    // bind variable values
    $search_term = "%{$search_term}%";
    $stmt->bindParam(1, $search_term);
    $stmt->bindParam(2, $search_term);

    $stmt->execute();
    $row = $stmt->fetch(PDO::FETCH_ASSOC);
}
```

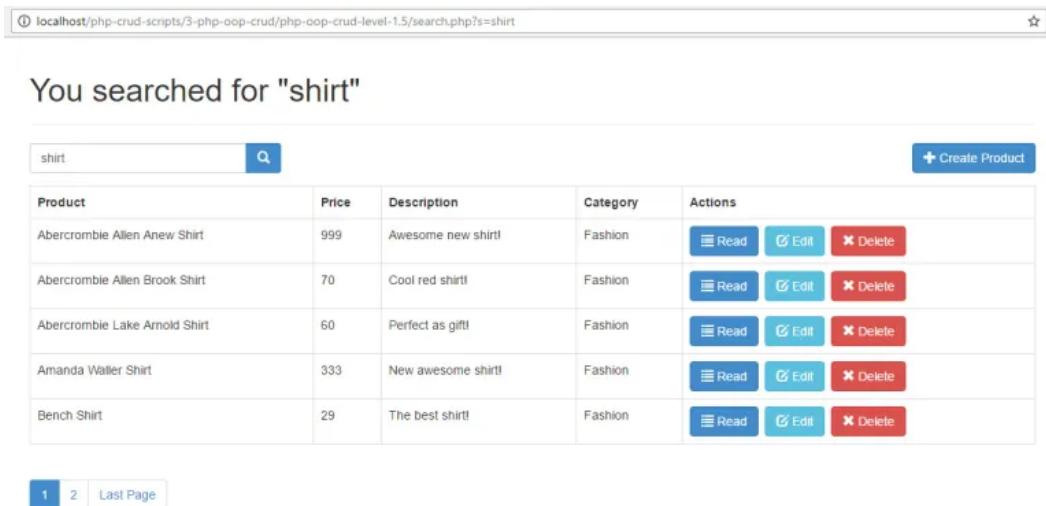
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OK

Output



The screenshot shows a web application interface for managing products. At the top, there is a search bar with the placeholder "shirt" and a magnifying glass icon. To the right of the search bar is a blue button labeled "+ Create Product". Below the search bar is a table with the following data:

Product	Price	Description	Category	Actions
Abercrombie Allen Anew Shirt	999	Awesome new shirt!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Abercrombie Allen Brook Shirt	70	Cool red shirt!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Abercrombie Lake Arnold Shirt	60	Perfect as gift!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Amanda Waller Shirt	333	New awesome shirt!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>
Bench Shirt	29	The best shirt!	Fashion	<button>Read</button> <button>Edit</button> <button>Delete</button>

At the bottom left, there are navigation buttons for page 1 (selected), page 2, and "Last Page".

< <https://i0.wp.com/www.codeofaninja.com/wp-content/uploads/2014/06/php-mysql-oop-crud-tutorial.jpg?ssl=1> >

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OK



In this section, we will add a “file upload” feature. This feature is included in the LEVEL 2 source code download.

Change HTML form

Open `create_product.php` and find the “form” tag. Change that line to the following code. The “enctype” enables the form to submit a file to the server.

```
<form action="<?php echo htmlspecialchars($_SERVER["PHP_SELF"]);?>" method="po
```

On the same HTML table, find the closing “tr” tag of the “Category” field. Add the following code. This adds an input field where the user can browse the file he wants to upload.

```
<tr>
  <td>Photo</td>
  <td><input type="file" name="image" /></td>
</tr>
```

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X

Open `create_product.php` file. Place the following code under `$product->category_id = $_POST['category_id'];` code.

```
$image=!empty($_FILES["image"]["name"])
    ? sha1_file($_FILES['image']['tmp_name']) . "-" . basename($_FILES["im
$product->image = $image;
```

Change `create()` method

Open "objects" folder and open the "product.php" file inside it. Find the "create()" method.

Add the "image" field by changing the query to:

```
// insert query
$query = "INSERT INTO " . $this->table_name . "
    SET name=:name, price=:price, description=:description,
        category_id=:category_id, image=:image, created=:created";
```

On the sanitize section, it will be:

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OK

X

Then bind the value.

```
$stmt->bindParam(":image", $this->image);
```

Add the "image" property at the top of the class, maybe after public \$category_id;

```
public $image;
```

Using the PhpMyAdmin, add an "image" field in the products table. Set the type to VARCHAR with 512 in length.

Call uploadPhoto() method

Open `create_product.php` and find this line.

```
// product was created in database
echo "<div class='alert alert-success'>Product was created.</div>";
```

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OK

X

```
// try to upload the submitted file  
// uploadPhoto() method will return an error message, if any.  
echo $product->uploadPhoto();
```

Add uploadPhoto() method

The previous section will not work without the complete code of uploadPhoto() method.

Open “objects” folder and open the “product.php” file inside it. Add the following method inside the class.

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OK



```
// will upload image file to server
function uploadPhoto(){

    $result_message = "";

    // now, if image is not empty, try to upload the image
    if($this->image){

        // sha1_file() function is used to make a unique file name
        $target_directory = "uploads/";
        $target_file = $target_directory . $this->image;
        $file_type = pathinfo($target_file, PATHINFO_EXTENSION);

        // error message is empty
        $file_upload_error_messages = "";

    }

    return $result_message;
}
```

Validate submitted file

Now we will validate the submitted file by:

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OK

-
- Prevent multiple file on the server.
 - Deny uploading files with large file size.
 - Making sure the “uploads” directory exists.

Add the following code after \$file_upload_error_messages=""; of the previous section.

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OK

X

```
// make sure that file is a real image
$check = getimagesize($_FILES["image"]["tmp_name"]);
if($check!==false){
    // submitted file is an image
}else{
    $file_upload_error_messages.= "<div>Submitted file is not an image.</div>";
}

// make sure certain file types are allowed
$allowed_file_types=array("jpg", "jpeg", "png", "gif");
if(!in_array($file_type, $allowed_file_types)){
    $file_upload_error_messages.= "<div>Only JPG, JPEG, PNG, GIF files are allowed</div>";
}

// make sure file does not exist
if(file_exists($target_file)){
    $file_upload_error_messages.= "<div>Image already exists. Try to change file name.</div>";
}

// make sure submitted file is not too large, can't be larger than 1 MB
if($_FILES['image']['size'] > (1024000)){
    $file_upload_error_messages.= "<div>Image must be less than 1 MB in size.</div>";
}

// make sure the 'uploads' folder exists
```

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X

OK

Return error messages

If the file is valid, we will upload the file to server. Specifically, in the “uploads” folder. If there’s any error, we will return it to be shown to the user.

Place the following code after the previous section’s code.

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```
// if $file_upload_error_messages is still empty
if(empty($file_upload_error_messages)){
    // it means there are no errors, so try to upload the file
    if(move_uploaded_file($_FILES["image"]["tmp_name"], $target_file)){
        // it means photo was uploaded
    }else{
        $result_message.= "<div class='alert alert-danger'>";
        $result_message.= "<div>Unable to upload photo.</div>";
        $result_message.= "<div>Update the record to upload photo.</div>";
        $result_message.= "</div>";
    }
}

// if $file_upload_error_messages is NOT empty
else{
    // it means there are some errors, so show them to user
    $result_message.= "<div class='alert alert-danger'>";
    $result_message.= "{$file_upload_error_messages}";
    $result_message.= "<div>Update the record to upload photo.</div>";
    $result_message.= "</div>";
}
```

Show uploaded image file

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OK



```
function readOne(){

    $query = "SELECT name, price, description, category_id, image
        FROM " . $this->table_name .
        WHERE id = ?
        LIMIT 0,1;

    $stmt = $this->conn->prepare( $query );
    $stmt->bindParam(1, $this->id);
    $stmt->execute();

    $row = $stmt->fetch(PDO::FETCH_ASSOC);

    $this->name = $row['name'];
    $this->price = $row['price'];
    $this->description = $row['description'];
    $this->category_id = $row['category_id'];
    $this->image = $row['image'];
}
```

Open `read_one.php` file and find the closing "tr" tag of the "Category" field in the HTML table.

Add the following code. This will show the uploaded image.

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OK



```
echo "<tr>";
echo "<td>Image</td>";
echo "<td>";
    echo $product->image ? "<img src='uploads/{$product->image}' style='width: 100px; height: 100px;'>" : "<img src='placeholder.png' style='width: 100px; height: 100px;'>";
echo "</td>";
echo "</tr>";
```

Output

Click the "Create" button, you will see something like the image below.

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OK

The screenshot shows a web browser window with the URL `localhost/php-oop-crud-level-1/create_product.php` in the address bar. The page title is "Create Product". On the right side, there is a "Read Products" button. The main area contains a form with the following fields:

Name	Pillow 1.1
Price	29.99
Description	The best pillow for programmers!
Category	Fashion
Photo	<input type="button" value="Choose File"/> pillow-product.jpg <input type="button" value="pillow-product.jpg"/>

At the bottom left of the form is a blue "Create" button.

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[OK](#)



The screenshot shows a web browser window with the URL localhost/php-oop-crud-level-1/create_product.php. The page title is "Create Product". In the top right corner, there is a "Read Products" button. A green success message box contains the text "Product was created.". Below the message is a form with six input fields: Name, Price, Description, Category (a dropdown menu), Photo (an input field with a "Choose File" button and placeholder "No file chosen"), and a "Create" button. At the bottom of the page is a black footer bar containing a privacy policy and terms of use notice, an "OK" button, and a close "X" button.

Product was created.

Name	
Price	
Description	
Category	Select category...
Photo	<input type="button" value="Choose File"/> No file chosen
	<input type="button" value="Create"/>

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OK X

If you click the "Read" button of a record with an image, it will look like the following.



Read One Product

		
Name	Pillow 1.1	
Price	\$30	
Description	The best pillow for programmers!	
Category	Fashion	
Image		

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[X](#)