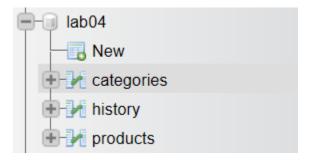
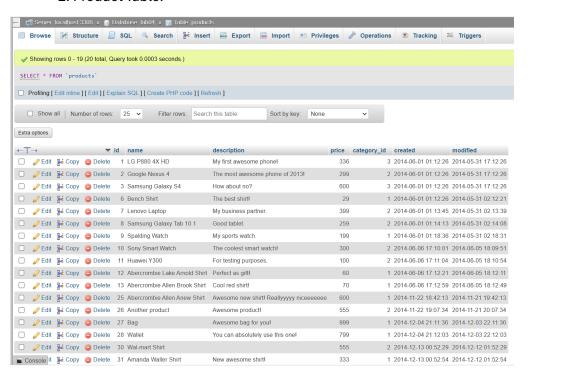
#### Database:



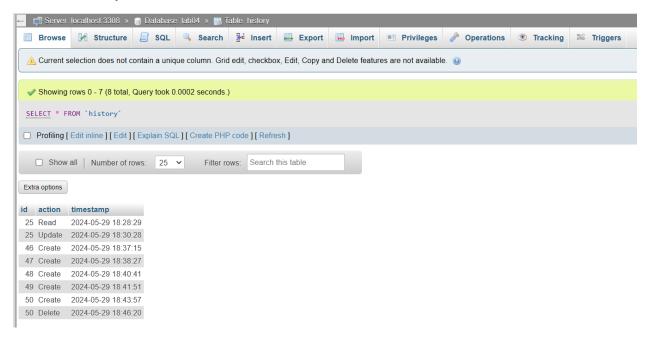
# 1. Categories Table:



#### 2. Product Table:



# 3. History Table:



### Models:

# 1. database.php:

### 2. category.php:

```
1
     <ppp</pre>
 2
      class Category
 3
           // database connection and table name
 4
 5
           private $conn;
 6
           private $table name = "categories";
7
8
           //object properties
9
           public $id;
10
           public $name;
11
12
           public function construct($db)
13
14
               $this->conn = $db;
15
16
17
           //used by select drop-down list
18
           function read()
19
20
               //select all data
               $query = "SELECT id, name
21
22
                            FROM ".$this->table name."
23
                            ORDER BY name ";
24
25
               $stmt = $this->conn->prepare($query);
26
               $stmt->execute();
27
28
               return $stmt;
29
30
31
           //used to read category name by its id
32
           function readName()
33
34
               $query = "SELECT name
35
                            FROM ".$this->table name."
36
                            WHERE id = ? limit 0,1 ";
37
               $stmt = $this->conn->prepare($query);
38
               $stmt->bindParam(1,$this->id);
39
               $stmt->execute();
40
41
               $row = $stmt->fetch(PDO::FETCH ASSOC);
42
43
               $this->name = $row['name'];
44
45
      L?>
46
```

### 3. product.php:

```
<?php
       class Product
 3
 4
           //database connection and table name
 5
           private $conn;
 6
           private $table name = "products";
           //object properties
 9
           public $id;
10
           public $name;
11
           public $price;
12
           public $description;
13
           public $category id;
14
           public $timestamp;
15
           public function construct($db)
16
17
18
                $this->conn = $db;
19
20
```

```
//create Product
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
                                                                    function create()
                                                                                          $query = "INSERT INTO ".$this->table name."
                                                                                                                                                                                    name=:name, price=:price, description=:description, category_id=:category_id, created=:created";
                                                                                         $stmt = $this->conn->prepare($query);
                                                                                          //posted values
                                                                                      //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
                                                                                        $\textit{\forall} \textit{\forall} 
43
44
45
46
47
48
49
                                                                                           if ($stmt->execute())
                                                                                                                  return true;
                                                                                           }else {
                                                                                                                 return false;
```

```
54
           function readAll($from record num, $records per page)
55
56
               $query = "SELECT id, name, description, price, category id
57
                            FROM ".$this->table name."
58
                            ORDER BY name ASC
59
                           LIMIT {$from record num}, {$records per page} ";
60
61
               $stmt = $this->conn->prepare($query);
62
               $stmt->execute();
63
64
               return $stmt;
65
66
67
           public function countAll()
68
               $query = "SELECT id FROM ".$this->table_name." ";
69
70
71
               $stmt = $this->conn->prepare($query);
72
               $stmt->execute();
73
74
               $num = $stmt->rowCount();
75
76
               return $num;
77
78
```

```
79
           function readOne()
80
               $query = "SELECT name, price, description, category id
81
82
                            FROM ".$this->table name."
83
                            WHERE id = ? LIMIT 0,1 ";
84
               $stmt = $this->conn->prepare($query);
85
               $stmt->bindParam(1, $this->id);
86
               $stmt->execute();
87
88
               $row = $stmt->fetch(PDO::FETCH ASSOC);
89
90
               $this->name = $row['name'];
91
               $this->price = $row['price'];
92
               $this->description = $row['description'];
93
               $this->category id = $row['category id'];
94
95
```

```
function update()
 97
 98
                $query = "UPDATE ".$this->table name."
 99
                            SET name = :name,
100
                                price = :price,
101
                                description = :description,
102
                                category id = :category id
103
                             WHERE id = :id";
104
                $stmt = $this->conn->prepare($query);
106
                //posted values
107
                $this->name = htmlspecialchars(strip tags($this->name));
108
                $this->price = htmlspecialchars(strip_tags($this->price));
                $this->description = htmlspecialchars(strip_tags($this->description));
109
                $this->category_id = htmlspecialchars(strip_tags($this->category_id));
111
                $this->id = htmlspecialchars(strip_tags($this->id));
113
                // bind parameters
                $stmt->bindParam(':name', $this->name);
114
115
                $stmt->bindParam(':price', $this->price);
                $stmt->bindParam(':description', $this->description);
$stmt->bindParam(':category_id', $this->category_id);
116
117
                $stmt->bindParam(':id', $this->id);
118
119
                //execute the query
121
                if($stmt->execute())
123
                     return true;
124
125
126
                return false;
128
129
              function delete()
130
131
                  $query = "DELETE FROM ".$this->table name."
132
                               WHERE id = ? ";
133
                  $stmt = $this->conn->prepare($query);
134
                  $stmt->bindParam(1, $this->id);
135
136
                  if ($result = $stmt->execute())
137
138
                       return true;
139
140
                  return false;
141
142
 143
              function savingAction($id, $action)
144
145
                  $table = "history";
                  $query = "INSERT INTO ".$table."
146
147
                               SET id=:id, action=:action, timestamp=:timestamp ";
148
                  $stmt = $this->conn->prepare($query);
149
150
                  $timestamp = date('Y-m-d H:i:s');
151
                  $stmt->bindParam(":id", $id);
152
                  $stmt->bindParam(":action", $action);
153
154
                  $stmt->bindParam(":timestamp", $timestamp);
155
156
                  $stmt->execute();
157
```

158 159

12>

#### Code:

1. layout\_header.php:

```
<!DOCTYPE html>
       <html lang="en">
      二<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 $page_title; ?></title>
           <!--Bootstrap -->
           <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet">
           <!--Bootstrap ICON -->
           <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.11.3/font/bootstrap-icons.min.css">
13
14
15
16
           <link rel="stylesheet" href="assets/css/custom.css" />
       -</head>
     =|<body>
18
           <!--container header-->
19
20
21
22
           <div class="container">
               <?php
                   echo "<div class='mb-4 pb-2 border-bottom'>
                           <h1>{$page_title}</h1>
                       </div>";
24
```

#### 2. layout\_footer.php:

```
<!--container footer-->
       <!-- jQuery core - the newest version 3.7.1-->
       <script src="https://code.jquery.com/jquery-3.2.1.min.js"></script>
       <!-- Bootstrap JavaScript -->
       <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js"></script>
 6
       <!-- Bootbox library -->
       <script src="https://cdnjs.cloudflare.com/ajax/libs/bootbox.js/4.4.0/bootbox.min.js"></script>
       <!-- Deleting product -->
     <script>
    // JavaScript for deleting product
13
     ${document).on('click', '.delete-object', function(){
    var id = $(this).attr('delete-id');
14
15
16
17
           bootbox.confirm({
               title: 'Delete Product',
                message: '<h4>Are you sure?</h4>',
19
                buttons: {
                    confirm: {
                        label: '<i class="bi bi-check"></i> Yes',
                        className: 'btn-danger'
23
24
25
26
27
28
29
                    cancel: {
                        label: '<i class="bi bi-x"></i> No',
                        className: 'btn-primary'
                callback: function (result) {
                    if(result==true) {
                       $.post('delete_product.php', {
                            object id: id
33
                        }, function(data) {
34
                            location.reload();
35
                        }).fail(function() {
36
                            alert('Unable to delete.');
37
38
39
40
           1):
41
42
           return false;
43
       -});
44
      </script>
45
       </body>
46 //html>
```

#### 3. create\_product.php:

```
-<?php
            //include database and object file
           include_once 'config/database.php';
 3
           include once 'objects/product.php';
 4
           include once 'objects/category.php';
 5
 6
 7
           //get database connection
 8
           $database = new Database();
 9
           $db = $database->getConnection();
10
11
           //pass connection to objects
12
           $product = new Product($db);
13
           $category = new Category($db);
14
15
           //set page header
           $page title = "Create Product";
16
17
           include_once "layout header.php";
18
19
           //CONTENT
20
           // Read Products Button
21
           echo "<div class='m-3 text-end'>
22
                   <a href='index.php' class='btn btn-outline-dark'>Read Products</a>
23
               </div>";
24
25
```

```
27
      <!-- PHP post code will be here -->
    php
28
29
           // if the form was submitted - PHP OOP CRUD tutorial
           if($ POST)
31
32
               //product property values
33
               $product->name = $_POST['name'];
               $product->price = $_POST['price'];
34
35
               $product->description = $ POST['description'];
36
               $product->category_id = $_POST['category_id'];
37
38
               //create the product
39
               if ($product->create())
40
    41
                   // If create product success, take the newest id (the just created product)
42
                   // and saving into history
43
                   $id = $db->lastInsertId();
44
                   $product->savingAction($id, "Create");
45
                   echo "<div class='alert alert-success'>Product was created.</div>";
46
47
               else
48
49
                   echo "<div class='alert alert-danger'>Unable to create product.</div>";
50
51
52
```

```
CREATE PRODUCT FORM -->
     <!--
54
     55
56
         57
58
59
                Name
60
                <input type='text' name='name' class='form-control' />
61
            62
63
            64
                Price
65
                <input type='text' name='price' class='form-control' />
66
67
68
            69
                Description
                <textarea name='description' class='form-control'></textarea>
71
             72
 73
74
                Category
75
                76
                   <!-- DROP-DOWN LIST category -->
77
                   <?php
 78
                   // read the product categories from the database
79
                   $stmt = $category->read();
80
81
                   // put them in a select drop-down
                   echo "<select class='form-control' name='category id'>";
82
83
                      echo "<option>Select category...</option>";
84
85
                      while ($row_category = $stmt->fetch(PDO::FETCH_ASSOC)){
86
                         extract($row category);
                         echo "<option value='{$id}'>{$name}</option>";
87
88
89
90
                   echo "</select>";
91
92
                93
             94
95
             96
                <
97
98
                  <button type="submit" class="btn btn-primary">Create</button>
99
                100
             102
         L</form>
103
104
     </div>
105
106
     <php</pre>
107
         //footer
108
         include once "layout footer.php";
109
```

### 4. index.php:

```
// page given in URL parameter, default page is one
             $page = isset($_GET['page']) ? $_GET['page'] : 1;
              // set number of records per page
 6
             $records per page = 5;
              //calculate for the query LIMIT clause
             $from_record_num = ($records_per_page * $page) - $records_per_page;
              // include database and object files
12
13
14
             include once 'config/database.php';
include once 'objects/product.php';
include once 'objects/category.php';
16
              // instantiate database and objects
              $database = new Database();
18
             $db = $database->getConnection();
19
20
             $product = new Product($db);
$category = new Category($db);
              //query products
23
              $stmt = $product->readAll($from_record_num, $records_per_page);
24
25
             $num = $stmt->rowCount();
26
27
             // set page header
$page_title = "Read Products";
include_once "layout_header.php";
29
              // CREATE PRODUCT Button
31
             echo "<div class='m-3 text-end'>
32
                       <a href='create_product.php' class='btn btn-outline-dark'>Create Product</a>
33
                   </div>":
```

```
//display products
         if (Snum>0)
38
            echo "";
39
            echo "";
40
               echo ">Product";
               echo "Price";
41
               echo "Description";
42
               echo "Category";
43
44
               echo "Actions";
45
            echo
                "";
46
47
            while ($row = $stmt->fetch(PDO::FETCH ASSOC))
48
49
               extract ($row);
50
51
52
53
               echo "";
                  echo "{$name}";
                  echo "{$price}";
54
                   echo "{$description}";
55
                   echo "";
56
57
58
                     $category->id = $category_id;
                      $category->readName();
                     echo $category->name;
59
                  echo "";
60
61
62
                      //read, edit and delete button
                      echo "<a href='read_one.php?id={$id}' class='btn btn-outline-primary'>
63
64
                            <i class='bi bi-list'></i> Read
65
66
67
                         <a href='update_product.php?id={$id}' class='btn btn-outline-info'>
68
                            <i class='bi bi-pencil-square'></i> Edit
69
                         </a>";
74
                   echo "";
76
               echo "";
78
            echo "";
```

```
80
               // the page where this paging is used
               $page_url = "index.php?";
81
82
               //count all products in the database to calculate total pages
83
84
               $total_rows = $product->countAll();
85
86
               //paging button
87
               include_once 'paging.php';
88
89
           else
90
91
               echo "<div class='alert alert-info'>No products found </div>";
92
93
94
           // set page footer
95
           include_once "layout_footer.php";
96
97
98
```

# 5. paging.php:

```
echo "";
          //button for first page
if ($page>1)
              // calculate total pages
$total_pages = ceil($total_rows/$records_per_page);
          // range of links to show
          % range = 2;
% range = 2;
% initial_num = $page - $range;
% condition_limit_num = ($page + $range) + 1;
          for ($x=$initial num; $x<$condition limit num; $x++)</pre>
              \textbf{if} \ (\ (\$x{>}0) \ \&\& \ (\$x <= \$total\_pages)\ )
                 //current page
if ($x == $page)
                     echo "<a class='page-link' href=\"#\">$x <span class='visually-hidden'>(current)</span></a>";
                  //not current page
                     echo "<a class='page-link' href='{$page_url}page=$x'>$x</a>";
          //button for last page
if ($page < $total_pages)</pre>
              echo "class='page-item'><a class='page-link' href='".$page_url."page={$total_pages}'title='Last page is {$total_pages}.'>Last</a>
          echo "";
```

### 6. read\_one.php:

65 66

67

68

//set footer

include once "layout footer.php";

```
?php // get id of the product to be Read
          $id = isset($ GET['id']) ? $ GET['id'] : die('ERROR: missing ID.');
3
4
5
          // include database and object
          include_once "config/database.php";
include_once "objects/product.php";
6
          include once "objects/category.php";
9
          //get db connection
          $database = new Database();
11
          $db = $database->getConnection();
14
          // prepare object
          $product = new Product($db);
          $category = new Category($db);
16
17
          // set id property of product to be read
19
          $product->id = $id;
          // read details of product to be read
21
          $product->readOne();
23
          //set page header
          $page_title = "Read One Product";
include_once "layout_header.php";
24
25
26
27
          //Saving into History
28
          $product->savingAction($id, "Read");
29
          //read product button
31
          echo "<div class='m-3 text-end'>
32
                 <a href='index.php' class='btn btn-primary'>
33
                  <i class='bi bi-list-task'></i> Read Product
                 </a>
34
             </div>";
37
            // HTML table for displaying a product details
38
            echo
            "
39
40
                <t.r>
41
                    Name
                    {$product->name}
42
43
                44
45
46
                    Price
47
                    {$product->price}
                48
49
50
                    Description
51
52
                    {$product->description}
53
54
55
                56
                Category
57
                ";
58
                    // display category name
59
                    $category->id=$product->category id;
60
                    $category->readName();
61
                    echo $category->name;
62
                echo "
63
                64
            ";
```

### 7. update\_product.php:

65

```
-<?php</pre>
            // retrieve product
 3
            $id = isset($ GET['id']) ? $ GET['id'] : die('Error: missing ID');
 4
 5
            // include database and object
           include_once "config/database.php";
include_once "objects/product.php";
 6
            include_once "objects/category.php";
 8
 9
10
            //get db connection
11
            $database = new Database();
12
            $db = $database->getConnection();
13
14
            //prepare object
15
            $product = new Product($db);
            $category = new Category($db);
16
17
18
            // set ID property of product to be edited
19
            $product->id = $id;
20
            // read the details of product to be edited
21
            $product->readOne();
22
23
            //set page header
24
            $page title = "Update Product";
            include_once "layout_header.php";
25
26
27
28
            // content
29
                   Read Product button
            echo "<div class='m-3 text-end'>
                  <a href='index.php' class='btn btn-outline-dark'>Read Product</a>
                </div>";
33
34
            //set page footer
35
            include_once "layout_footer.php";
36
37
      <!-- post code -->
     -<?php</pre>
            //if the form was submitted
39
40
            if ($ POST)
41
42
                // product property values
43
                $product->name = $_POST['name'];
                $product->price = $_POST['price'];
44
                $product->description = $_POST['description'];
45
46
                $product->category id = $ POST['category id'];
47
48
                //update the Product
                if ($product->update())
49
     51
                    // If update product success, saving into history
52
                    $product->savingAction($id, "Update");
                    echo "<div class='alert alert-success alert-dismissable'>
54
                            Product was updated
55
                        </div>";
56
                else
58
59
                    echo "<div class='alert alert-danger alert-dismissable'>
                            Unable to update Product
60
61
                         </div>";
62
63
64
```

```
<!--- Update Product form -->
      Price

</tab/>

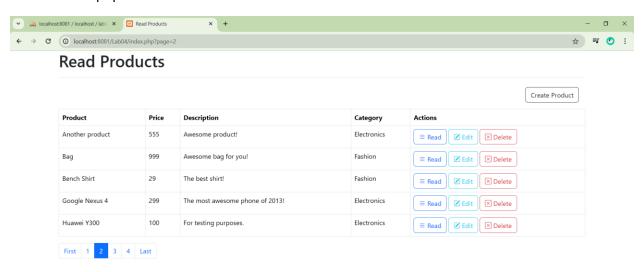
              Category
                 <?php
    $stmt = $category->read();
                        echo "<select class='form-control' name='category_id'>";
                           echo "<option>Please select...</option>";
while ($row_category = $stmt->fetch(PDO::FETCH_ASSOC))
                               $category_id = $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>";
                                  echo "<option value='$category_id'>";
                               echo "$category_name</option>";
                        echo "</select>";
111
112
113
114
115
116
117
118
119
120
121
122
                 c/tr>
                 <buton type="submit" class="btn btn-primary">Update</button>
```

### 8. delete\_product.php:

```
?php
 2
           //check if value was posted
 3
           if ($_POST)
4
5
               //include database and object
 6
               include once "config/database.php";
               include_once "objects/product.php";
7
8
9
               //get db connection
10
               $database = new Database();
11
               $db = $database->getConnection();
12
13
               //prepare product object
14
               $product = new Product($db);
15
16
               // set product id to be deleted
17
               $product->id = $ POST['object id'];
18
19
               // delete the Product
20
               if ($product->delete())
21
22
                   // If delete product success, saving action into history
23
                   $product->savingAction($_POST['object_id'], "Delete");
24
                   echo "Object was deleted";
25
26
               else
27
                   echo "Unable to delete object";
28
29
30
      L?>
31
```

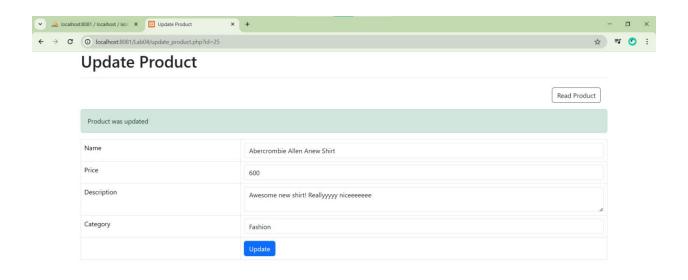
### Result:

index.php:

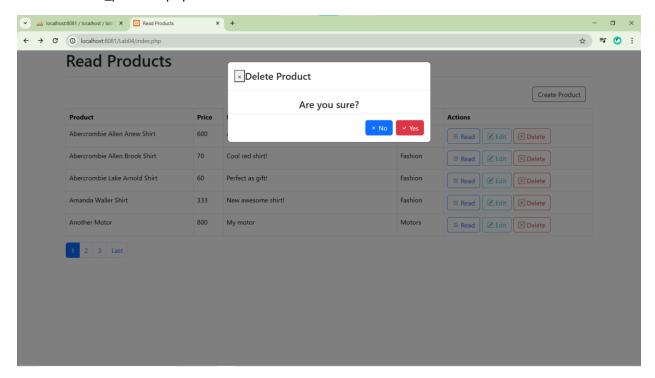


# read\_one.php:

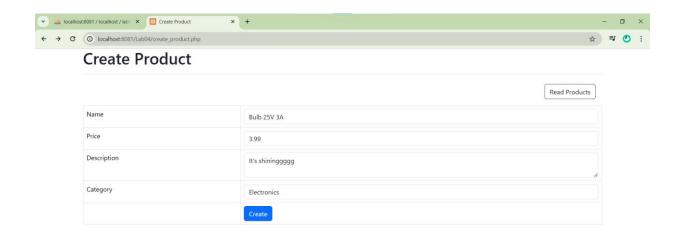


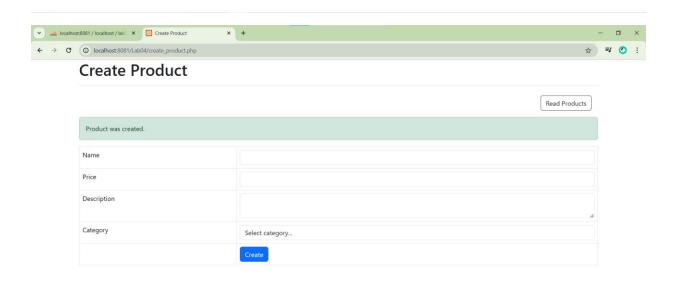


# delete\_product.php:



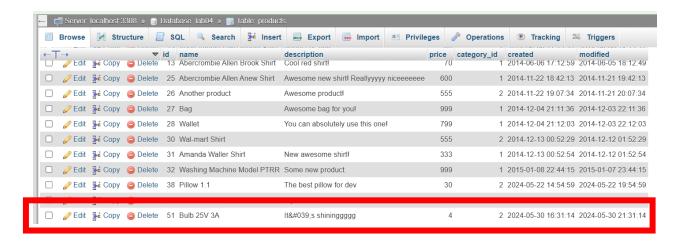
create\_product.php:





### In database:

Product Table:



### History Table:

