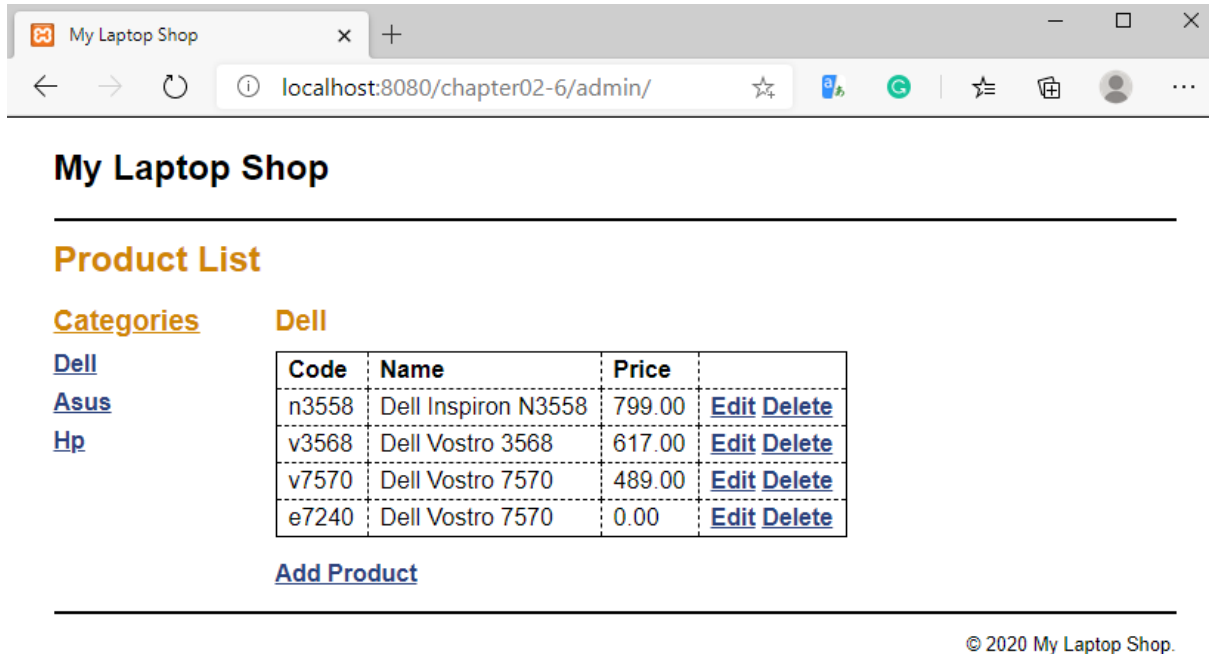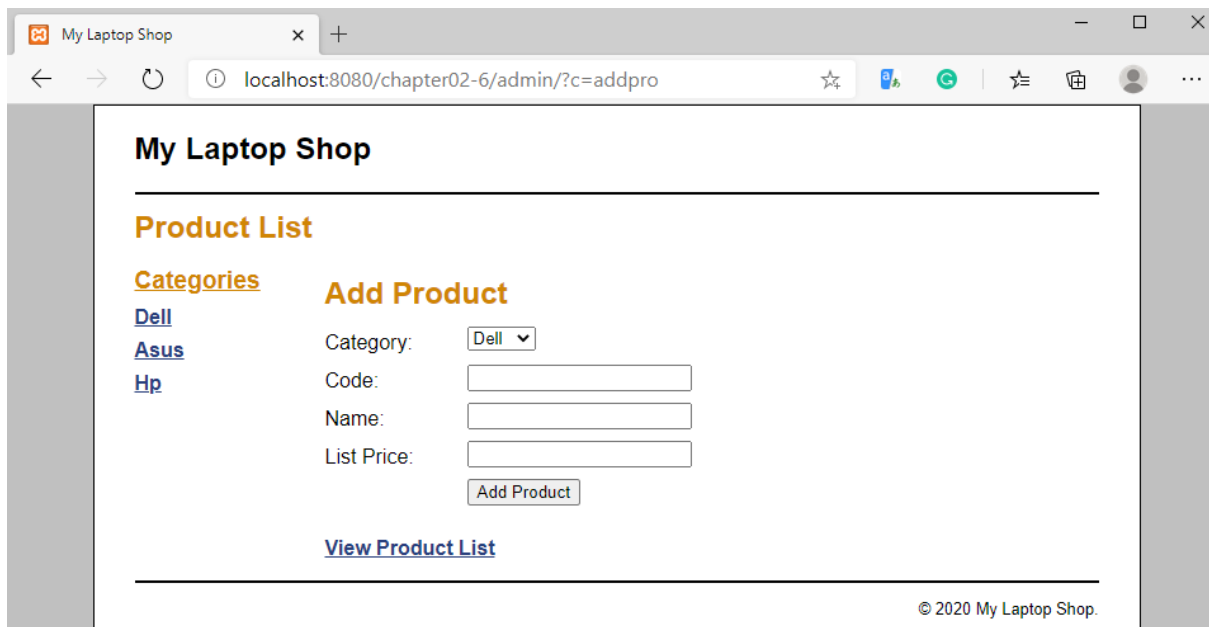**Lab 06.** Xây dựng ứng dụng web theo mô hình MVC. Bổ sung thêm bảng **Products** vào csdl **Lab5** đã thực hiện ở bài thực hành trước. Sau đó tiếp tục thao tác hiển thị, thêm, xóa sửa dữ liệu với bảng **Products**. Giao diện ứng dụng website như sau:
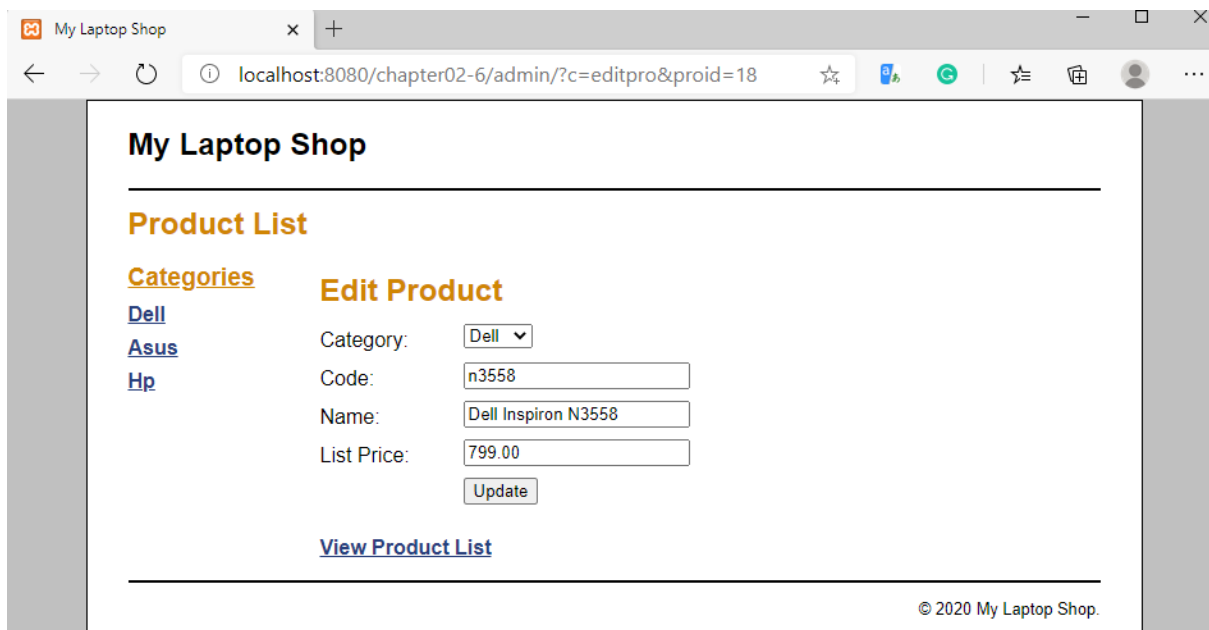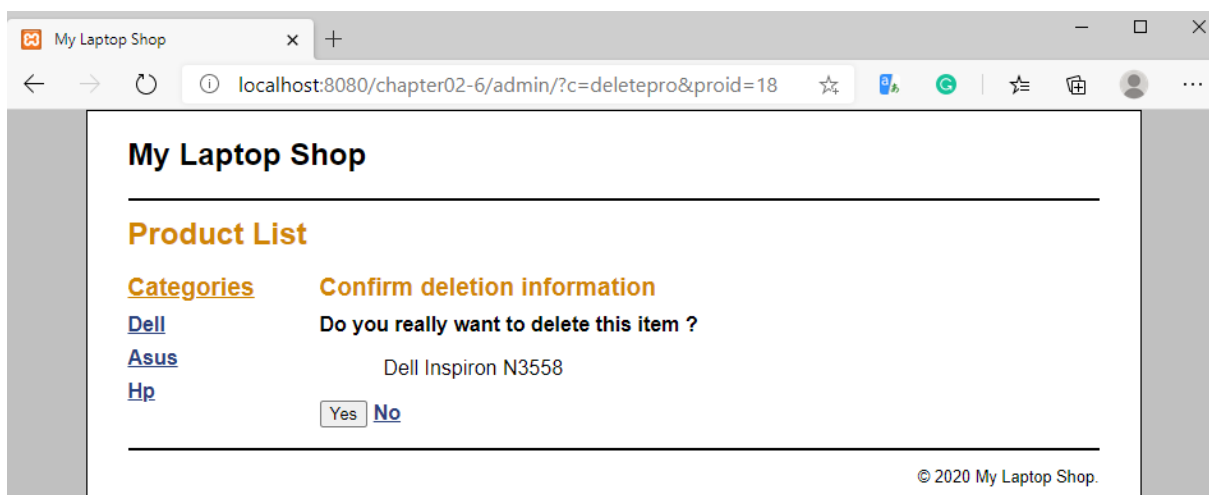
+ Giao diện ứng dụng web:

+ Giao diện thêm sản phẩm khi click vào nút **Add Product**.

+ Giao diện sửa dữ liệu sản phẩm

+ Giao diện xóa dữ liệu sản phẩm:

Gợi ý:

B1. Bổ sung đoạn mã script sau, để tạo bảng **Products** cho csdl Lab05.

CREATE TABLE `products` (

 `productID` int(11) NOT NULL primary key AUTO_INCREMENT,

 `categoryID` int(11) NOT NULL,

 `productCode` varchar(10) COLLATE utf8_unicode_ci NOT NULL,

 `productName` varchar(255) COLLATE utf8_unicode_ci NOT NULL,

 `productImage` varchar(255) COLLATE utf8_unicode_ci NULL,

 `listPrice` decimal(10,2) NOT NULL,

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`createdDate` timestamp NULL DEFAULT current_timestamp(),

 foreign key(categoryID) references categories(categoryID)

);

INSERT INTO `products` (`categoryID`, `productCode`, `productName`, `listPrice`) VALUES

(1, 'n3558', 'Dell Inspiron N3558', 799),

(1, 'v3568', 'Dell Vostro 3568', 617),

(1, 'v7570', 'Dell Vostro 7570', 489),

(1, 'e7240', 'Dell Vostro 7570', 600),

(1, 'v3590', 'Dell Vostro 3590 i5 10210U', 850),

(1, 'n3493', 'Dell Inspiron 3493 i5 1035G1', 855),

(1, 'n5593', 'Dell Inspiron 5593 i5 1035G1',920);

B2. + Bổ sung thêm hàm db_min_id(): lấy id có giá trị nhỏ nhất trong bảng

```
∨ da
 🐘 database.php
```
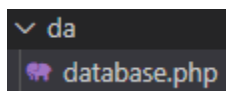
```php
// Get Min ID with Auto_Increment
    public static function db_min_id($id,$table)
    {
      if(!is_null(self::$con))
      {
        $count = 1;
        $sql = "select min($id) from $table";
        $result = self::$con->prepare($sql);
        $result->execute();
        if($result->rowCount() > 0)
          $count = $result->fetch();
        $result->closeCursor();
        return $count[0];
      }
      return false;
    }
```

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B3. + Xây dựng các file thành phần model, xử lý các nghiệp vụ liên quan đến bảng **products**.
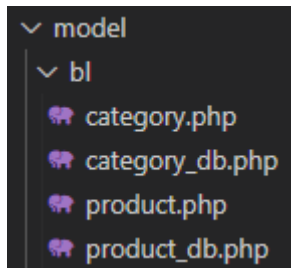
- file product.php

```php
<?php
class Product {
    private $id, $categoryId, $code, $name, $price;
    public function getId() {
        return $this->id;
    }
    public function setId($value) {
        $this->id = $value;
    }
    public function getCategoryId() {
        return $this->categoryId;
    }
    public function setCategoryId($value) {
        $this->categoryId = $value;
    }
    public function getCode() {
        return $this->code;
    }
    public function setCode($value) {
        $this->code = $value;
    }
    public function getName() {
        return $this->name;
    }
    public function setName($value) {
        $this->name = $value;
```

```php
    }
    public function getPrice() {
        return $this->price;
    }
    public function setPrice($value) {
        $this->price = $value;
    }
}
?>
```

- file product_db.php

```php
<?php
class ProductDB extends Database
{
    public static function getProducts()
    {
        $sql = "select * from products";
        if(!empty(self::db_get_list($sql)))
        {
            foreach(self::db_get_list($sql) as $row){
                $product = new Product();
                $product->setId($row['productID']);
                $product->setCategoryId($row['categoryID']);
                $product->setCode($row['productCode']);
                $product->setName($row['productName']);
                $product->setPrice($row['listPrice']);
                $products[] = $product;
            }
        return $products;
        }
    }
    public static function getProductById($productid)
    {
        $sql = "select * from products where productID=:productID";
        $params = ['productID' => $productid];
```

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```php
    $row = self::db_get_row($sql, $params);
    if(!empty($row))
    {
      $product = new Product();
      $product->setId($row['productID']);
      $product->setCategoryId($row['categoryID']);
      $product->setCode($row['productCode']);
      $product->setName($row['productName']);
      $product->setPrice($row['listPrice']);
    return $product;
    }
}
public static function getProductsByCategoryId($categoryid)
{
    $sql = "select * from products where categoryID=:categoryID";
    $params = ['categoryID' => $categoryid];
    if(!empty(self::db_get_list_condition($sql,$params)))
    {
      foreach(self::db_get_list_condition($sql,$params) as $row)
      {
        $product = new Product();
        $product->setId($row['productID']);
        $product->setCategoryId($row['categoryID']);
        $product->setCode($row['productCode']);
        $product->setName($row['productName']);
        $product->setPrice($row['listPrice']);
        $products[] = $product;
      }
    return $products;
    }
}
public static function getMinCatId($id,$table)
{
   if(!empty($table))
```

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```php
    return self::db_min_id($id,$table);
}
public static function addProduct($product)
{
    $sql = "insert into products(categoryID,productCode,productName,listPrice) values(:categoryID,:productCode,:productName,:listPrice)";
    $params = [
        "categoryID" => $product->getCategoryId(),
        "productCode" => $product->getCode(),
        "productName" => $product->getName(),
        "listPrice" => $product->getPrice()
    ];
    if (self::db_execute($sql, $params))
        return true;
    else
        return false;
}
public static function updateProduct($product)
{
    $sql = "update products set categoryID=:categoryID, productCode=:productCode, productName=:productName, listPrice=:listPrice where productID=:productID";
    $params = [
        "productID" => $product->getId(),
        "categoryID" => $product->getCategoryId(),
        "productCode" => $product->getCode(),
        "productName" => $product->getName(),
        "listPrice" => $product->getPrice()
    ];
    if (self::db_execute($sql, $params))
        return true;
    else
        return false;
}
public static function deleteProduct($product)
```
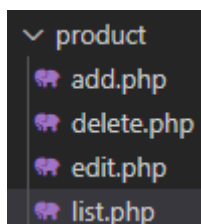
GVHD: Võ Ngọc Đạt

```php
    {
        $sql = "delete from products where productID=:productID";
        $params = [
            "productID" => $product->getId()
        ];
        if (self::db_execute($sql, $params))
            return true;
        else
            return false;
    }
}
?>
```

B4. Xây dựng các file cho thành phần view để hiển thị giao diện cho các thao tác thêm, xóa, sửa.

```
∨ product
    add.php
    delete.php
    edit.php
    list.php
```

+ file add.php

```php
<?php
    $categories = CategoryDB::getCategories();
    if(Helper::is_submit('add_product'))
    {
        $product = new Product();
        $product->setCategoryId(Helper::input_value('category_id'));
        $product->setCode(Helper::input_value('code'));
        $product->setName(Helper::input_value('name'));
        $product->setPrice(Helper::input_value('price'));
        if(!empty($product->getCategoryId()) && !empty($product->getCode()) && !empty($product->getName())
            && !empty($product->getPrice()) && ProductDB::addProduct($product))
        {
            Helper::redirect('?c=listpro');
        }
```

GVHD: Võ Ngọc Đạt

```php
    }
?>
<h1>Add Product</h1>
  <form action="" method="post" id="action_form">
    <input type="hidden" name="action" value="add_product">
    <label>Category:</label>
    <select name="category_id">
    <?php
      if(!empty($categories))
        foreach ($categories as $category) : ?>
        <option value="<?php echo $category->getId(); ?>">
          <?php echo $category->getName(); ?>
        </option>
        <?php endforeach; ?>
    </select>
    <br>
    <label>Code:</label>
    <input type="input" name="code"
        value="<?php echo Helper::input_value('code'); ?>">
    <br>
    <label>Name:</label>
    <input type="input" name="name"
        value="<?php echo Helper::input_value('name'); ?>">
    <br>
    <label>List Price:</label>
    <input type="input" name="price"
        value="<?php echo Helper::input_value('price'); ?>">
    <br>
    <label> </label>
    <input type="submit" value="Add Product">
    <br>
  </form>
  <p><a href="<?php echo Helper::get_url('admin/?c=listpro');?>">View Product List</a></p>
```

GVHD: Võ Ngọc Đạt

+ file delete.php

```php
<?php
 if(!empty(Helper::input_value('proid')))
 {
   $product = ProductDB::getProductById(Helper::input_value('proid'));
   if(Helper::is_submit('delete_product'))
   {
     //$product->setId();
     var_dump($product->getId());
     if(ProductDB::deleteProduct($product))
     {
       Helper::redirect('?c=listpro');
     }
   }
 }
?>
<h2>Confirm deletion information</h2>
<h3>Do you really want to delete this item ?</h3>
<p style="margin-left:50px"><?php echo $product->getName(); ?></p>
<div>
   <form action="" method="post">
     <input type="hidden" name="action" value="delete_product">
     <input type="submit" value="Yes">
     <a href="<?php echo Helper::get_url('admin/?c=listpro');?>">No</a>
   </form>
</div>
```

+ file edit.php

```php
<?php
 $categories = CategoryDB::getCategories();
 if(!empty(Helper::input_value('proid')))
 {
   $product = ProductDB::getProductById(Helper::input_value('proid'));
   if(Helper::is_submit('edit_product'))
   {
```

```php
        $product->setCategoryId(Helper::input_value('category_id'));

        $product->setCode(Helper::input_value('code'));

        $product->setName(Helper::input_value('name'));

        $product->setPrice(Helper::input_value('price'));

        if(ProductDB::updateProduct($product))

            Helper::redirect('?c=listpro');

    }

  }

?>

<h1>Edit Product</h1>

<form action="" method="post" id="action_form">

  <input type="hidden" name="action" value="edit_product">

  <label>Category:</label>

  <select name="category_id">

  <?php

    if(!empty($categories))

      foreach ($categories as $category) : ?>

      <option value="<?php echo $category->getId();?>" <?php echo ($category->getId()==$product->getCategoryId())?'selected':'';?>>

        <?php echo $category->getName(); ?>

      </option>

      <?php endforeach; ?>

  </select>

  <br>


  <label>Code:</label>

  <input type="input" name="code"

      value="<?php echo $product->getCode();?>">

  <br>

  <label>Name:</label>

  <input type="input" name="name"

      value="<?php echo $product->getName();?>">

  <br>

  <label>List Price:</label>
```

```html
<input type="input" name="price"
    value="<?php echo $product->getPrice();?>">
<br>
<label> </label>
<input type="submit" value="Update">
<br>
</form>
<p><a href="<?php echo Helper::get_url('admin/?c=listpro');?>">View Product List</a></p>
```

+ file list.php

```php
<?php
  $catid = Helper::input_value('catid');
  if(empty($catid))
  {
    $catid  = ProductDB::getMinCatId('CategoryId','Categories');
  }
  $category = CategoryDB::getCategoryById($catid);
  $products = ProductDB::getProductsByCategoryId($catid);
?>
<h2><?php echo $category->getName();  ?></h2>
    <table>
      <tr>
        <th>Code</th>
        <th>Name</th>
        <th>Price</th>
        <th> </th>
      </tr>
      <?php
        if(!empty($products))
          foreach ($products as $product) : ?>
      <tr>
        <td><?php echo $product->getCode(); ?></td>
        <td><?php echo $product->getName(); ?></td>
        <td><?php echo $product->getPrice(); ?></td>
        <td>
```

```php
        <a href="<?php echo Helper::get_url('admin/?c=editpro&proid=' . $product->getId());?>">Edit</a>
        <a href="<?php echo Helper::get_url('admin/?c=deletepro&proid=' . $product->getId());?>">Delete</a>
        </td>
    </tr>
    <?php endforeach; ?>
    </table>
<p><a href="<?php echo Helper::get_url('admin/?c=addpro');?>">Add Product</a></p>
```
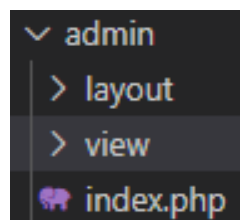
B5. Cập nhật các file thư viện đã xây dựng cho file **index.php** (thành phần controller)


```php
<?php
    include_once('../model/da/database.php');

    include_once('../model/da/helper.php');

    include_once('../model/bl/category.php');

    include_once('../model/bl/category_db.php');

    include_once('../model/bl/product.php');

    include_once('../model/bl/product_db.php');

    $db = new Database();
?>
```
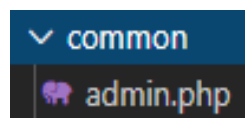
B6. Cập nhật lại bố cục cho ứng dụng web cho file **admin.php**

+ file **layout/left.php**

```php
<?php
    include_once('view/category/list.php');
?>
```

+ file **admin.php**

```php
<?php include_once('layout/header.php')?>
<main>
```

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```html
<h1>Product List</h1>
<aside>
  <!-- display a list of categories -->
  <?php include_once('layout/left.php')?>
</aside>


<section>
  <!-- display a table of products -->
  <?php include_once('layout/main.php')?>
</section>
</main>
<?php include_once('layout/footer.php') ?>
```
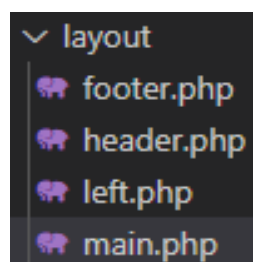
B7. Cập nhật nội dung file **main.php** điều hướng hiển thị nội dung cho thành phần main trong bố cục của website

```
∨ layout
    🐘 footer.php
    🐘 header.php
    🐘 left.php
    🐘 main.php
```

```php
<?php
$content = Helper::input_value('c');
if(!empty($content))
{
  switch($content)
  {
    case "addpro":
      include_once("view/product/add.php");
      break;
    case "editpro":
      include_once("view/product/edit.php");
      break;
    case "deletepro":
      include_once("view/product/delete.php");
      break;
```

GVHD: Võ Ngọc Đạt

```php
    case "listpro":
      include_once("view/product/list.php");
      break;
    case "addcat":
      include_once("view/category/add.php");
      break;
    case "editcat":
      include_once("view/category/edit.php");
      break;
    case "deletecat":
      include_once("view/category/delete.php");
      break;
    case "managecat":
      include_once("view/category/manage.php");
      break;
    }
  }
  else
    include_once("view/product/list.php");
?>
```
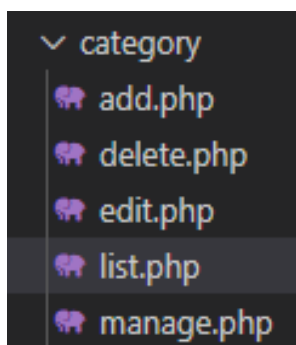
B8. Thêm file **manage.php** quản lý nội dung bảng **Categories**

```
∨ category
   🐘 add.php
   🐘 delete.php
   🐘 edit.php
   🐘 list.php
   🐘 manage.php
```

```php
<h2><?php echo "List Categories"; ?></h2>
    <table>
      <tr>
        <th>Id</th>
        <th>Name</th>
```

GVHD: Võ Ngọc Đạt

```
        <th> </th>
      </tr>
      <?php
        if(!empty(CategoryDB::getCategories()))
          foreach (CategoryDB::getCategories() as $category) : ?>
      <tr>
        <td><?php echo $category->getId(); ?></td>
        <td><?php echo $category->getName(); ?></td>
        <td>
        <a href="<?php echo Helper::get_url('admin/?c=editcat&id=' . $category->getId());?>">Edit</a>
        <a href="<?php echo Helper::get_url('admin/?c=deletecat&id=' . $category->getId());?>">Delete</a>
        </td>
      </tr>
      <?php endforeach; ?>
    </table>
<p><a href="<?php echo Helper::get_url('admin/?c=addcat');?>">Add Category</a></p>
```

B9. Cập nhật nội dung file **category/list.php**

```
<h2><a style="color:#D08504;" href="<?php echo Helper::get_url('admin/?c=managecat');?>">Categories</a>
</h2>
<nav>
<ul>
  <?php
  if(!empty(CategoryDB::getCategories()))
    foreach (CategoryDB::getCategories() as $category) : ?>
  <li>
  <a href="<?php echo Helper::get_url('admin/?c=listpro&catid=' . $category->getId());?>">
    <?php echo $category->getName(); ?>
  </a>
  </li>
  <?php endforeach; ?>
</ul>
```