

# Online Sales System



## Project

Semester 4

## Group Members:

Daniel Bene

Ivan Molčan

Juraj Gombkötő

Ľubomír Koník

## Submitted To:

## Project Instructor:

# Project Certification

This is to certify that

Daniel Bene  
Ivan Molčan  
Juraj Gombkötő  
Ľubomír Koník

Have successfully Designed & Developed

Online Sales System

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Submitted by:

Ľubomír Koník

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Date of Issue:

16<sup>th</sup> March, 2014

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Authorized Signature:

# Acknowledgement

We would like to acknowledge all those who have given moral support and helped us make the project a success.

We would like to express our gratitude to all the staff members of our centre for not only providing us with the opportunity to work on this project, but also for their support.

Especially, we would like to express our sincere gratitude to our Project Instructor Mr. Peter Pivarč and Center Academics Head Mr. Sherif Kenawy for giving us valuable guidance, complete support and encouragement throughout the process.

We would also like to thank to project team from Aptech Head Office, for their support for the completion of this project.

And finally, we would like to give many thanks to all our colleagues for their suggestions and constructive feedback.

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# Problem Definition

Green Shop Inc. is one of the market leading on-line retailers of various types of plants.

Their customer base of more than 300,000 customers has used Green Shop Inc. services over the last 5 years. They have supply relationships with many local florists in over 80 countries providing same day service for fresh plants deliveries.

In comparison to the competition, the company's website begins to have less attractive design, doesn't offer functionality to fill requirements of current market and company's needs. They want to offer their customers more comfortable way of ordering plants. They want to have understandable and complex store and orders management to provide reliable services and approach to every customer individually.

To achieve this, they consider having new design of the website. They want to improve whole ordering process, presentation of plants, search capabilities, navigation on the website and more options to inform and communicate with customer.

Ordering process should contain intuitive and simple handling with cart, fast and easy placing of orders, more payment and delivery options, more options to inform customers about state of their orders and new plants included to their offer.

Company's services should also contain simple order returning and reliable management of claims.

These aspects are necessary to retain their customer base and extend it by attracting more customers of all target groups.

## Customer Requirement Specification

The company has provided all the content details and its layout they want to add to the website as well as functional logic to implement. There should be navigation panel allowing to get almost everywhere in the website with one click and search for the goods from it. The hyperlinks on the navigation bar refer to home page, store page, contact page, profile and administration page, it also allows to get to the login, registration form and to log out.

## Project Design and Functional Logic

**Home page:** On top of the home page there is a horizontal menu bar, it consists of buttons: Home, Store, Contact, in the middle of the bar is a search field to search products, on the right of the bar is a button referring to the cart and next to it is a button to log in. When a customer or an admin is logged in, instead of the login button, button with user name is displayed. After click on it, the menu of user's subpages is displayed. For customer there is profile subpage button and logout button, for admin there is administration subpage button, profile and logout button. Under store button is menu allowing to display all products in the shop or filter products by categories.

Under the navigation bar there is a large picture depicting a new product. Under the picture there are horizontally displayed four pictures with hyperlinks referring to some categories.

**Store page:** In the store a guest can see thumbnails of products with *view* and *add to cart* buttons. View button shows details page with a larger picture of a product, name, price, description and available quantity on the stock and also *add to cart* button. After adding a product to the cart, guest is redirected to the **cart page** displaying added product items and total price, product items can be removed from the cart. After click on *place order* button, guest is redirected to the error page displaying message – access denied with login hyperlink. After login, all product items remain in the cart and user is allowed to go to the order page. On the order page, there is a table to review product items and a form to fill in order details like name and address. By submitting, order is created and user is redirected to the **profile page** where are user credentials and all user orders with corresponding statuses.

**Contact page:** This page contains large map displaying place of company's headquarters. On the left there is company's contact details and opening hours. On the bottom of the page is information about company.

**Administration page:** Admin in addition to the access to the store and the profile page has access to the administration page. Administration page has three subpages.

The first is the categories page allowing to see a list of all categories with description and the number of products in each of them. There is action to remove particular category from the application. When administrator deletes category which contains a product, message must be displayed not allowing to remove such category. The *add category* button redirects to the page with form containing inputs: category name, category description, name is compulsory input.

The next page is the products page displaying a list of all products with their details and allows to add a new product or to remove one. The table contains columns: product name, thumbnail of the image, product description – text is trimmed to 160 characters, category, price, quantity and delete action. The *add product* button redirects to the page with form. The form contains category input, it is select with options of all available categories. The next is product name input, product image input to upload image, it should be 300px wide, product description is text area and only this input is not compulsory, price number input must have validation to validate whether number has maximum two numbers after the decimal point, the last input is quantity. When administrator deletes product which some order contains, instead of the product name there should be information in the order that the product is deleted.

The last page is the orders page allowing to see all placed orders with their details. Columns of details contain ID, date, products – displaying all name of products the order contains, status detail which administrator can change from new to shipped, completed or cancelled, name of customer, address, total cost and update action allowing to change order status.

# Project Plan

**Name of the client:** Green Shop Inc.

**Date of the project plan:** 8. March 2014

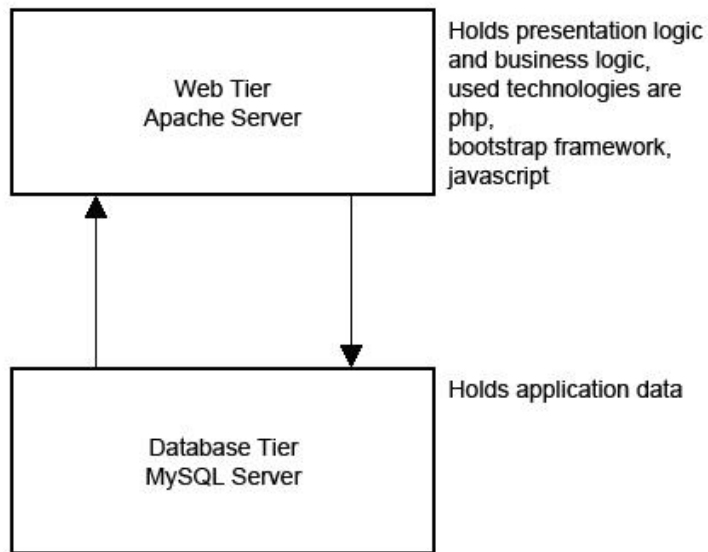
**Project Objectives:** The objectives of this project focus on developing online sales system. This application enables the retailer to offer goods online in manner that is competitive and extend company's customer base. The management system is to be simpler with more functionality to improve provided services. The system is developed using PHP, Bootstrap framework, JavaScript and MySQL Database.

**Scope:** The project has to be accomplished in 9 days, the team comprises 4 members. They work in the school class which is available two weekends, 8 hours per day, for the project. For every member is available one computer with MS Windows operating system, NetBeans IDE, Zend Studio, MySQL Workbench, MS Office and other needed software. Internet access is available. Apache web server and MySQL database server is used to develop application.

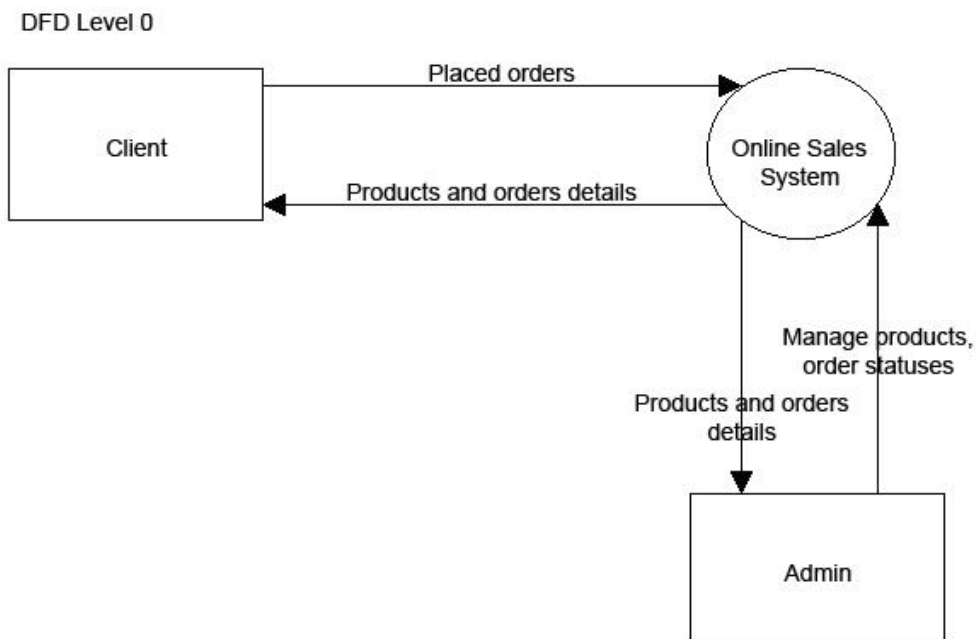
**Project Organization:** All members analyze, plan and specify project design and functional logic. Lubomir Konik together with Daniel Bene makes diagrams and architecture of the application and the database. The business logic and persistence are coded together with presentation layer. Lubomir Konik ensures design of the application and Daniel Bene makes final functional improvements and comments in the code. Ivan Molcan together with Juraj Gombkoto gather data to the database, make user guide in documentation, help code and make other parts of documentation.

**Deliverables:** The project packed in rar file consisting of source code, sql script, images, documentation in pdf format and source code files in pdf format.

## Architecture Diagram

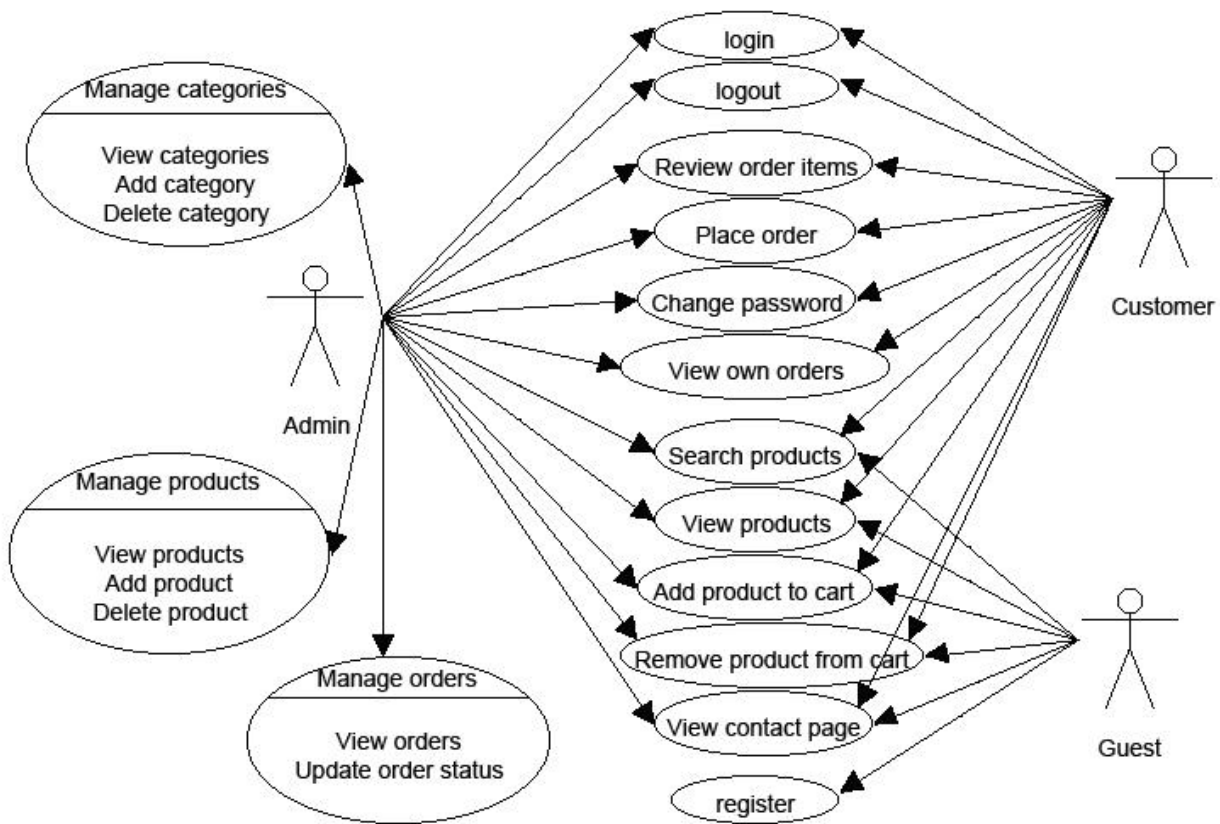


## Data Flow Diagram

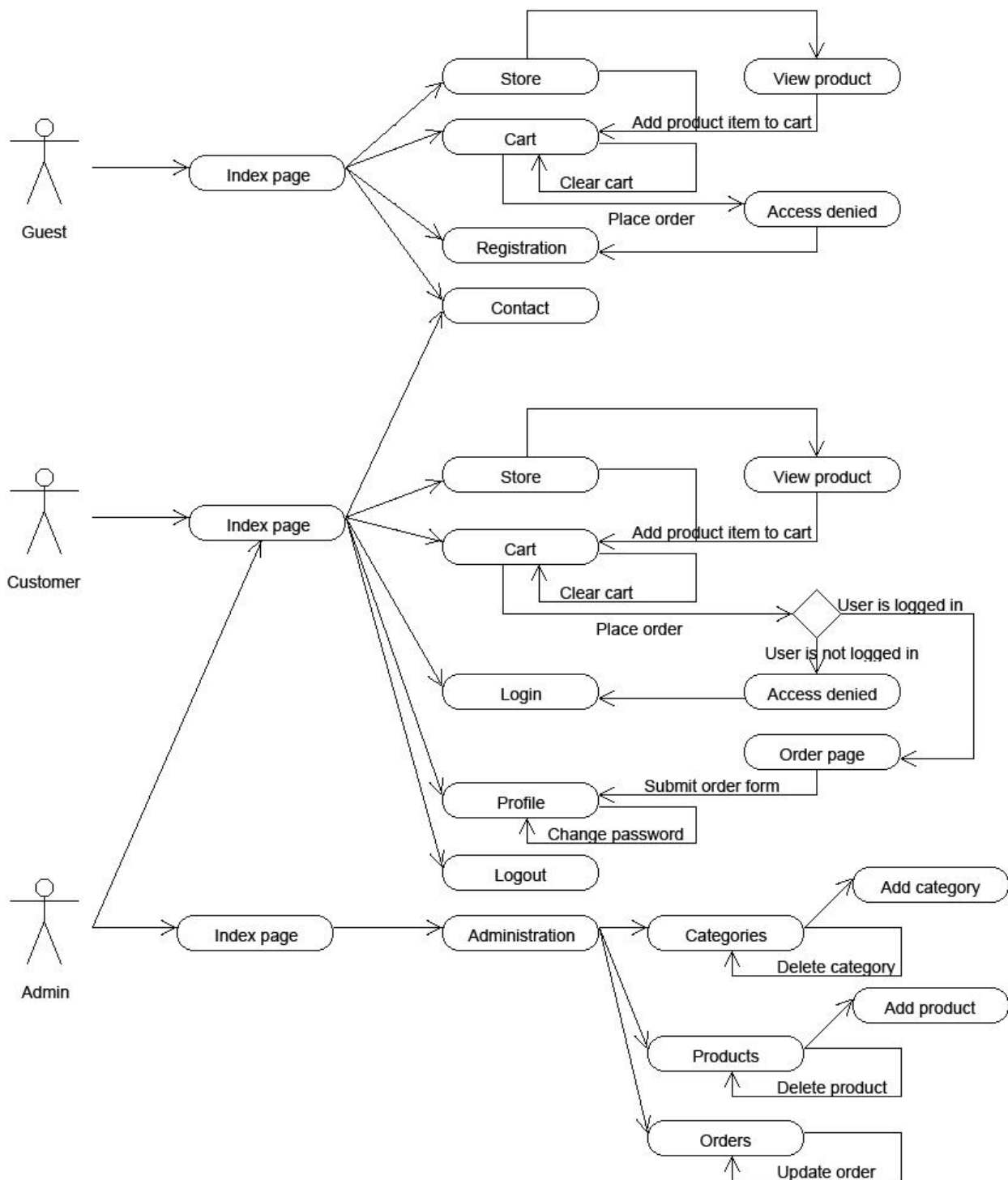




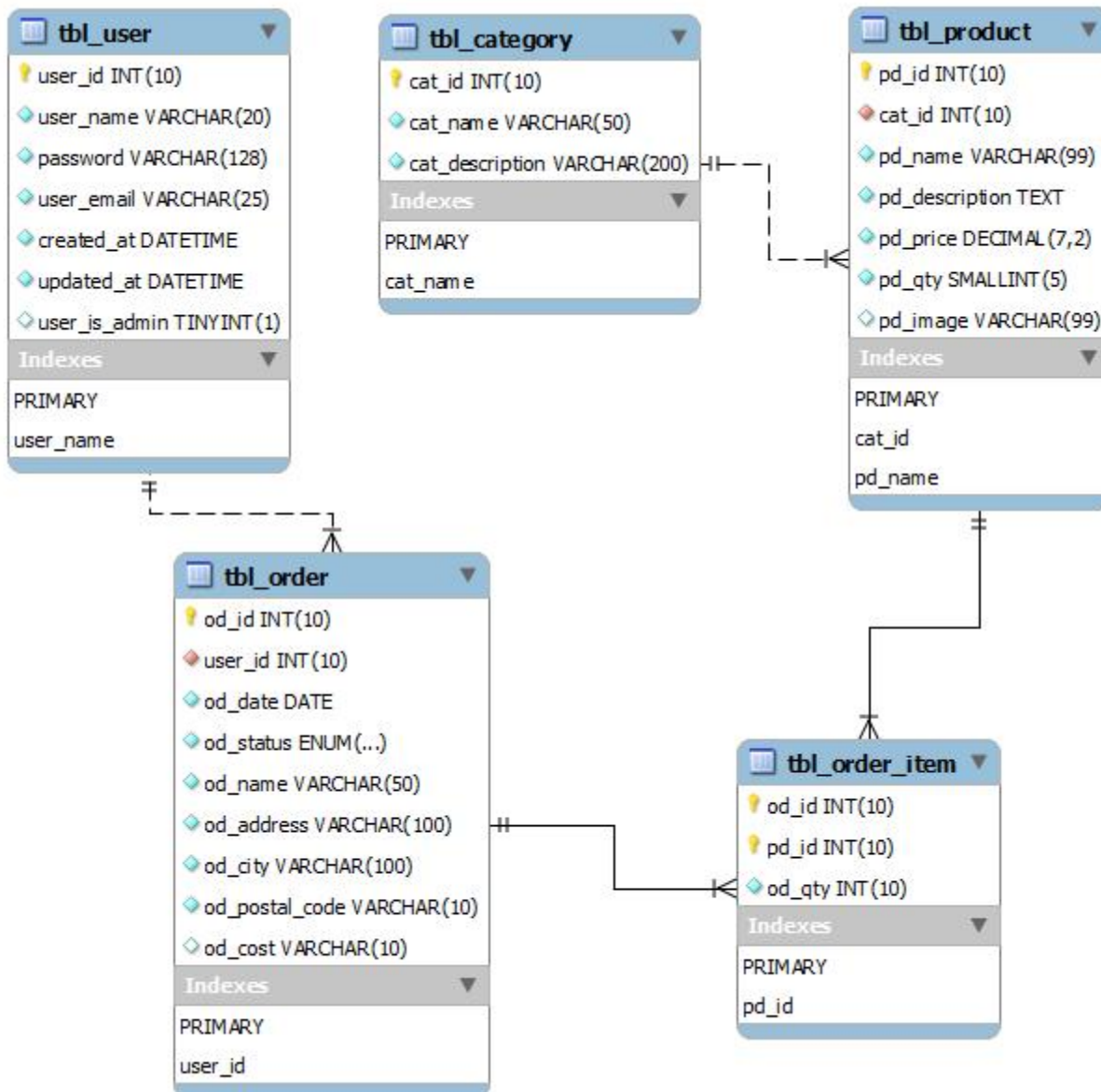
# Use Case Diagram



## Page Flow represented by State Chart Diagram



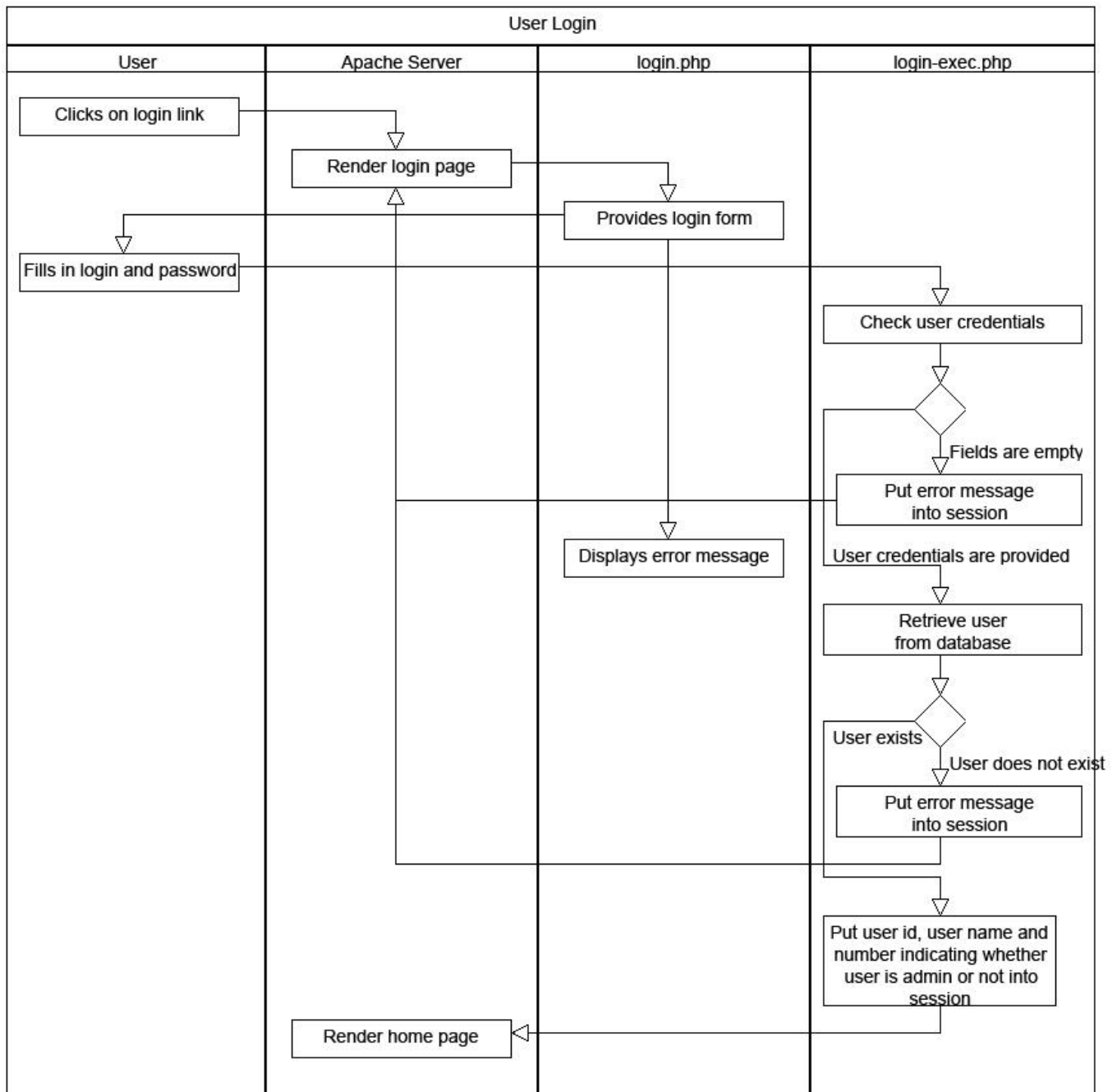
# Entity Relationship Diagram

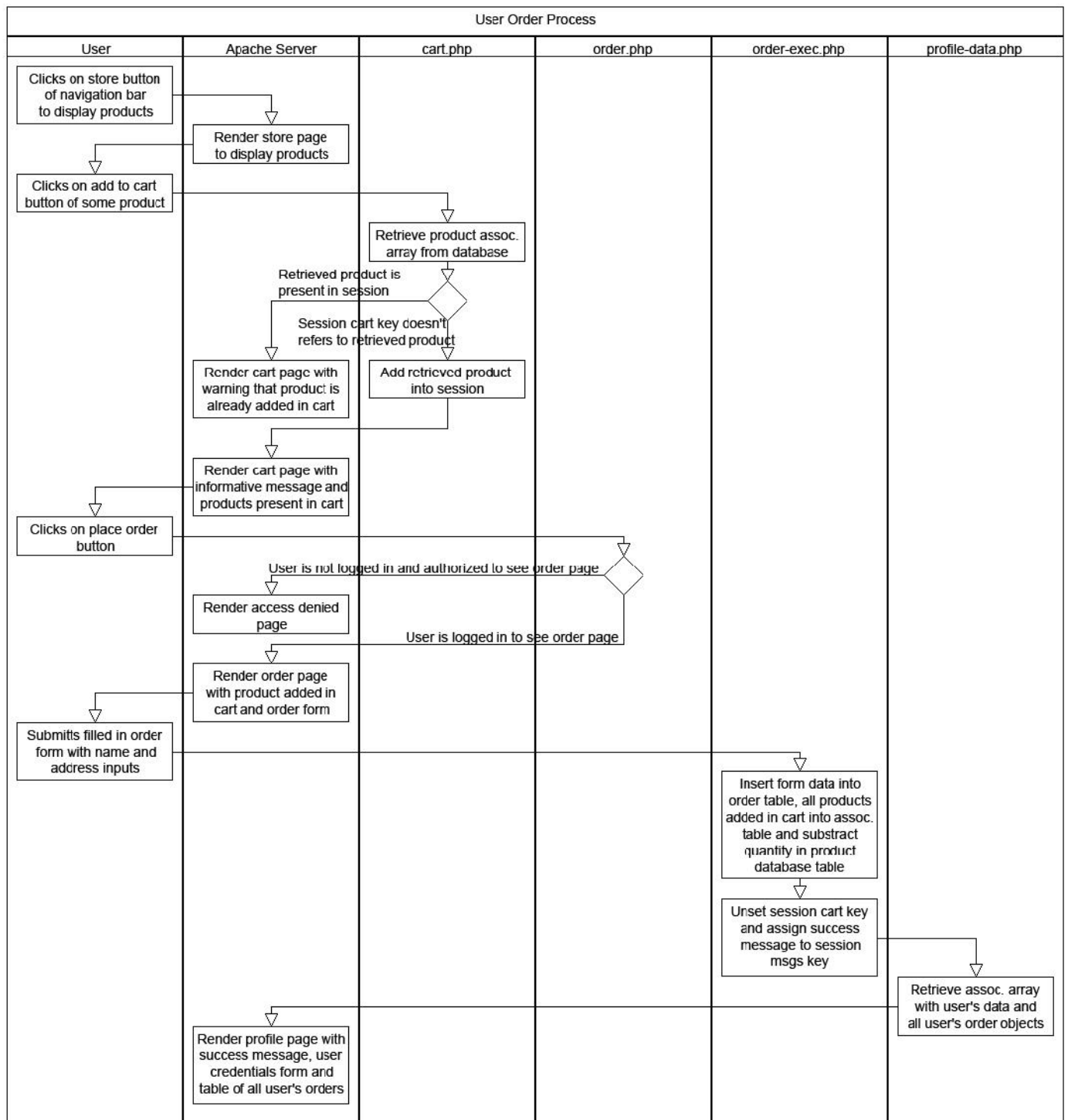


# Use Case Realization represented by Activity Diagrams

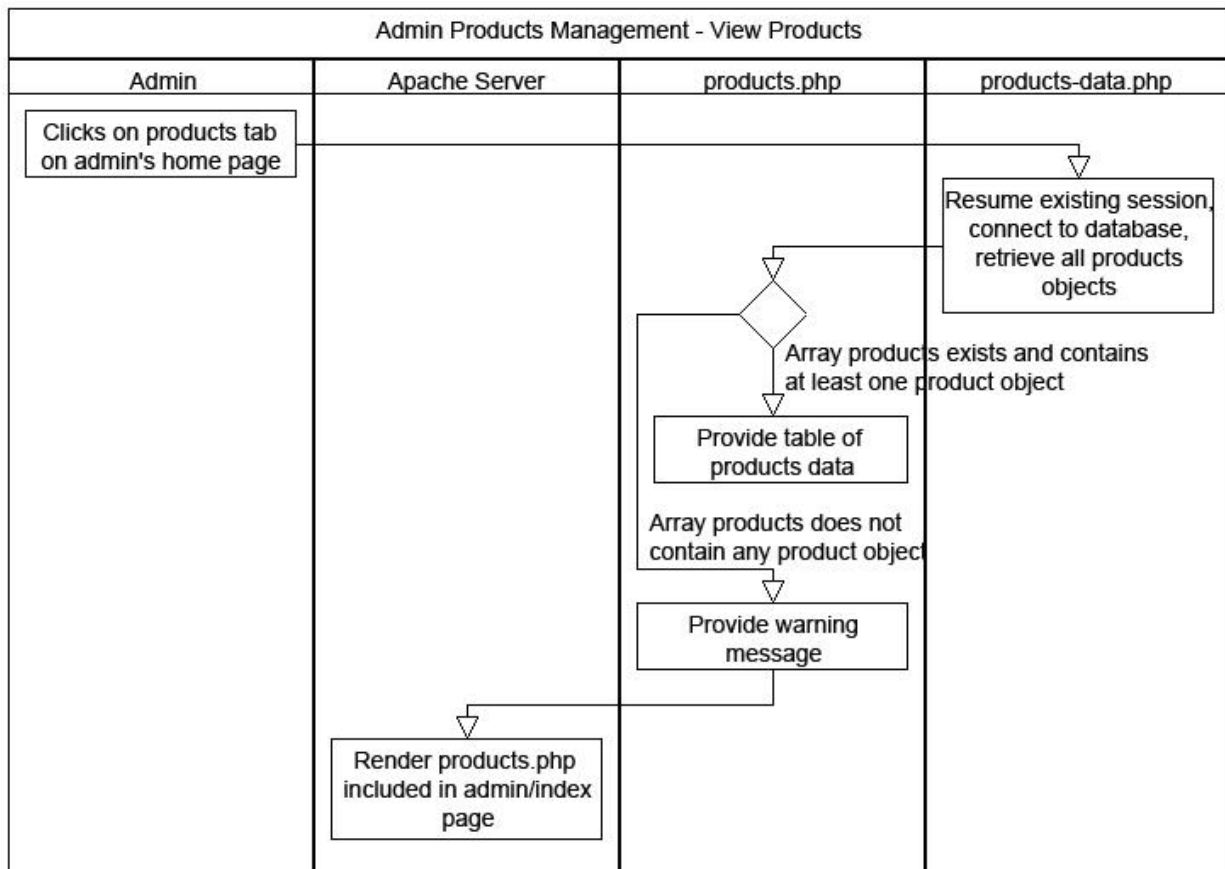
## User

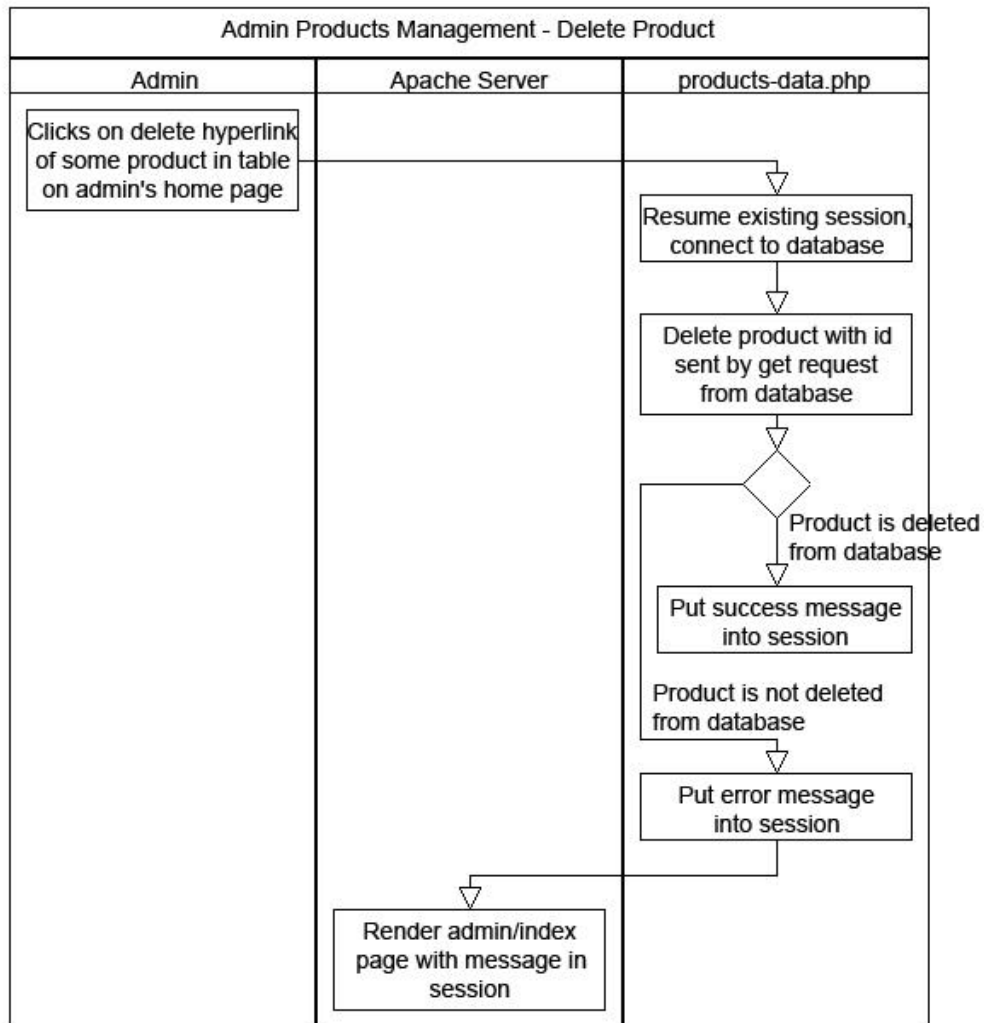
User in this case can represent customer and also administrator.

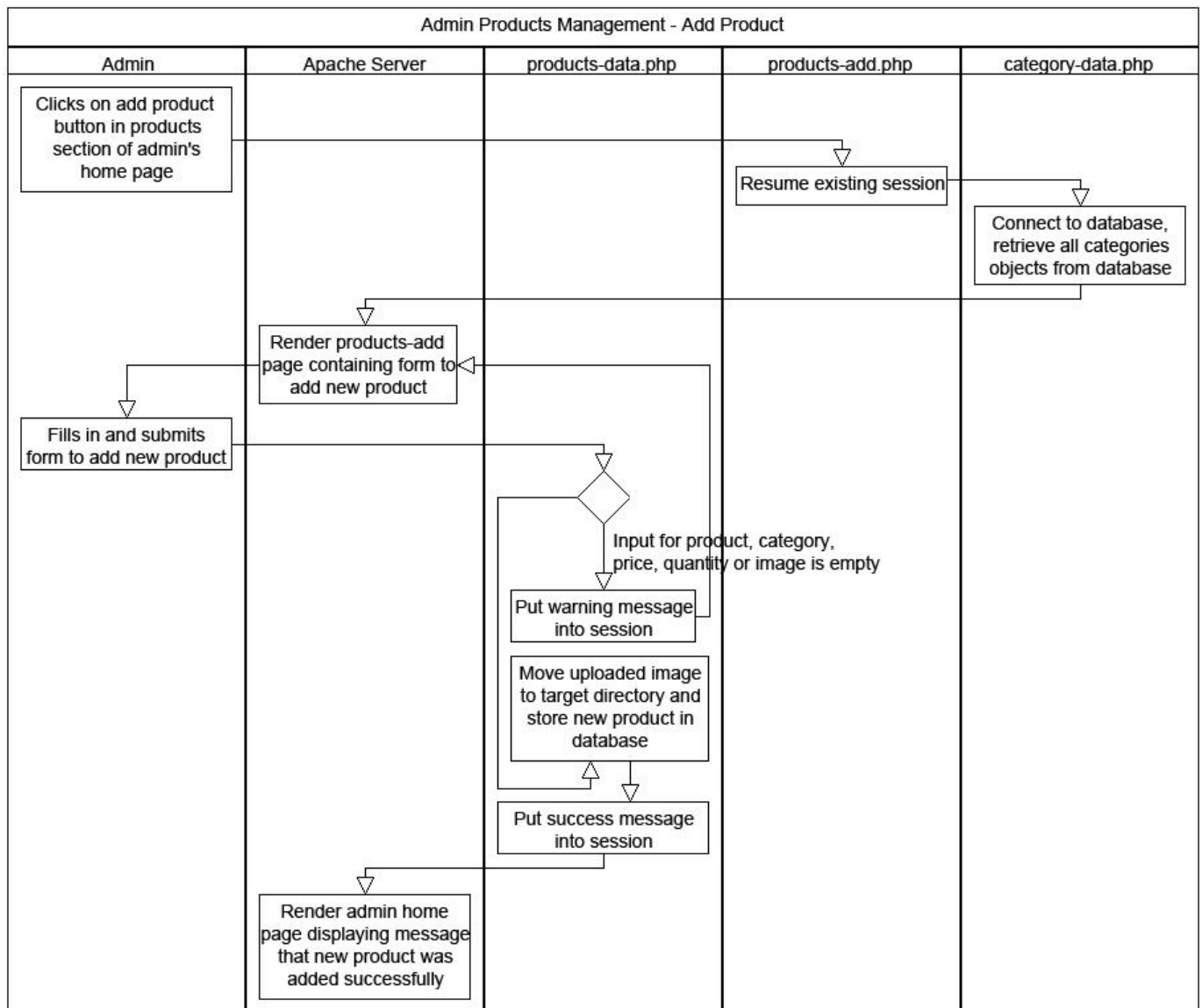




## Administrator









# Task Sheet

Project Ref. No.:		Project Title:	Activity Plan Prepared By:	Date of Preparation of Activity Plan:		
Semester 4		Online Sales System	Daniel Bene, Ivan Molcan, Juraj Gombkoto, Lubomir Konik	8 <sup>th</sup> March, 2014		
Sr.No.	Task	Actual Start Date	Actual Days	Team Mate Names	Status	
1.	Case study	8-March-2014	2	Bene, Molcan, Gombkoto, Konik	Completed	
2.	Tasks planning	9-March-2014	1	Bene, Molcan, Gombkoto, Konik	Completed	
3.	Web Server installing Database server installing	9-March-2014	1	Bene, Molcan, Gombkoto, Konik	Completed	
4.	Database designing	8-March-2014	2	Bene, Konik	Completed	
5.	Application designing User interface designing	8-March-2014	2	Bene, Konik	Completed	
6.	Application building Writing code with comments	9-March-2014	7	Bene, Konik	Completed	
7.	Code reviewing Adding comments	13-March-2014	2	Bene	Completed	
8.	Gathering database data	13-March-2014	2	Molcan, Bene	Completed	
9.	Application testing Final corrections	14-March-2014	3	Bene, Konik	Completed	
10.	Project Documentation	9-March-2014	7	Konik, Bene, Gombkoto	Completed	

## Checklist of Validations

Option	Validated
Is there no compile time or runtime error? Is code bug-free?	yes
Do all methods provide right functionality?	yes
Are all application components comprehensibly described by comments?	yes
Is database properly designed to provide all required data?	yes
Are used SQL facilities to protect data integrity?	yes
Are all the application outputs devoid of spelling mistakes?	yes
Is user interface designed consistently so that the application can be simply used?	yes
Does the application meets with requirements of the client?	yes
Are all important data included in the documentation?	yes

## Submission Checklist

Sr.No.	Particulars	Yes	No	NA	Comments
1.	Have all the modules been properly integrated and are they completely functional?	-			
2.	Does each unit meet its objective and purpose?	-			
3.	Have all design and coding standards been followed and implemented?	-			
4.	Is the GUI design consistent all over?	-			
5.	Are the codes working as per the specification?	-			
6.	Does the application's functionality resolve the client problem, and satisfy his/her needs completely?	-			
7.	Have the hardware and software been correctly chosen?	-			
8.	Additional features and utilities that give value addition to the entire project.	-			

# User Guide

## System Requirements

### *Software:*

Web Browser: Mozilla FireFox 27.1, Opera 12.11, Google Chrome 23.0, Internet Explorer 9

Database: MySQL Server 5.5.27

Web Server: Apache 2.4.3

PHP 5.4.7

### *Hardware:*

CPU: Intel Pentium 4 processor

Memory: 64 MB RAM (recommended)

750 MB free fixed disk

Display: 1024 x 768 or higher

## Install and Run Application

Step 1: Install software MySQL Server into the system

Step 2: Create appropriate database and tables as specified in sql\_script.sql file in root directory

Step 3: Install the Application into the system, make sure your database configuration is set correctly in config.php file in root directory

Step 4: Execute the application in your browser

## Logins

### *administrator:*

username: admin      password: 123456

### *customer:*

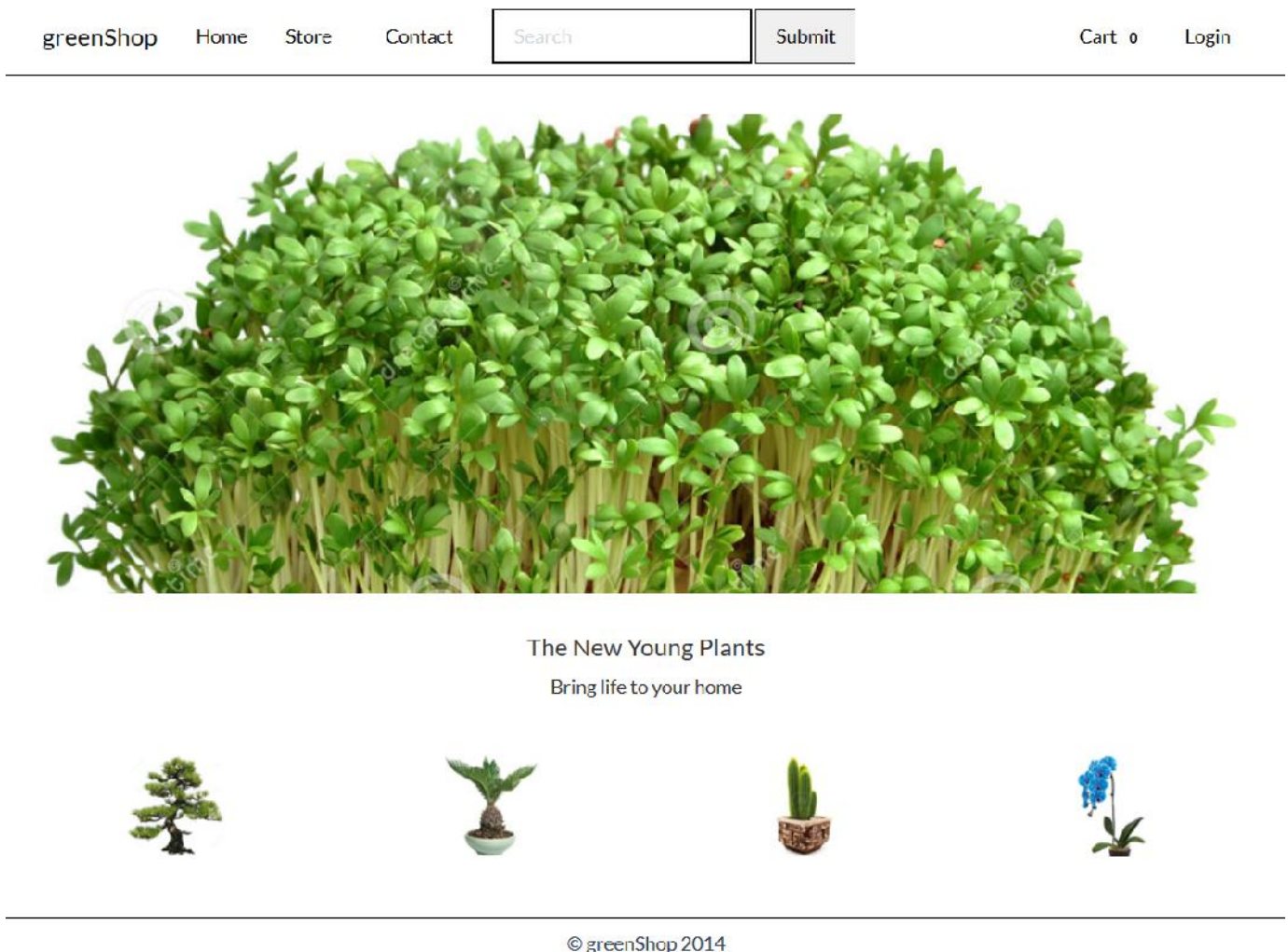
username: Ivan      password: 123456

username: dbene      password: 123456

## User Guide for Customer

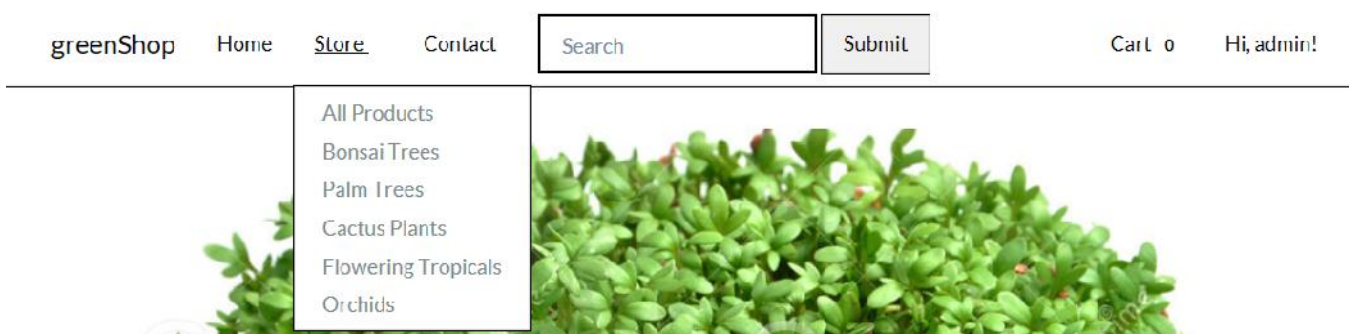
Welcome to our online sales system, please feel comfortable while browsing our website.

### Home page



On the top of home page is navigation bar. It allows user to go to every main section of the website. On the left of the navigation bar is logo of the company, this button redirects to the home page. Button next to it, home button, functions same way as logo button.

*Store* button servers to display all plants or filter them by category. After click on the button, the menu of all categories is displayed. On the top, menu item *All products* forwards to store displaying plants of all categories.

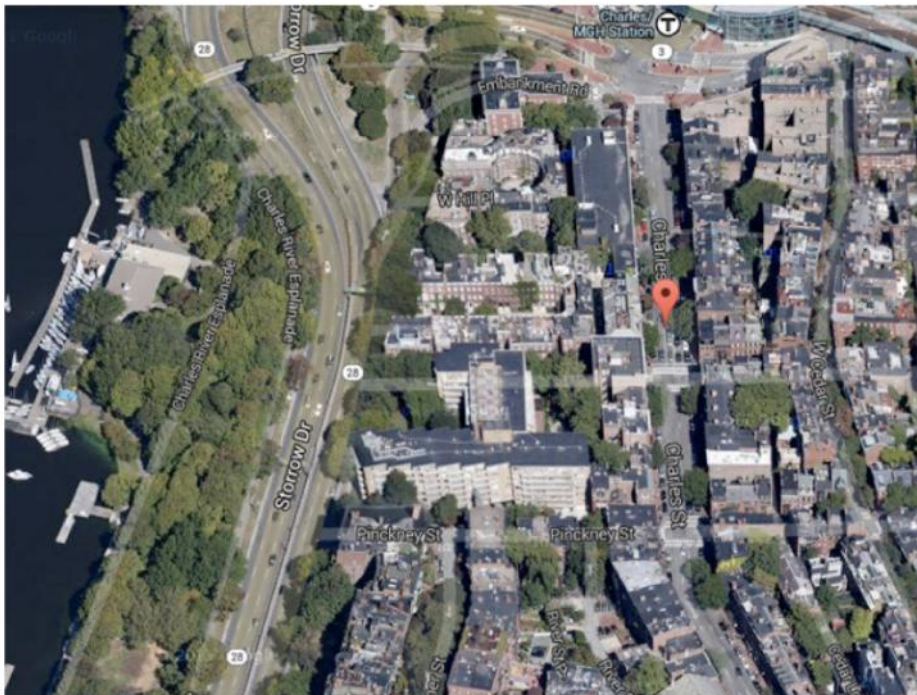


Contact button forwards to the contact page displaying map pointing to the place of company's headquarters, company's contact details and information about company.

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## Contact

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**greenShop, Inc.**  
94 Charles St, Suite 600  
Boston, MA 02114  
Ph: (617) 720-3588  
Fx: (617) 778-0859

**Customer Services**  
[customer.service@greenshop.com](mailto:customer.service@greenshop.com)

**Corporate Orders**  
[corporate.orders@greenshop.com](mailto:corporate.orders@greenshop.com)

**Online Shop Returns**  
[returns@greenshop.com](mailto:returns@greenshop.com)

**Opening Hours**  
M-F: 8:00 a.m. - 6:00 p.m.

## About Us

greenShop is one of the market leading on-line retailers of various types of plants.

Our customer base of more than 300,000 customers has used greenShop services over the last 5 years to deliver fresh and meaningful messages of love to special people.

greenShop has supply relationships with more than 3000 local florists in over 80 countries providing same day service for fresh plants deliveries.

You can choose from our standard catalogue on our web pages or speak to one of our consultants and we will help customize your special order.

greenShop consultants are available by phone or on-line in our state-of-the-art Call Centres. A local

User can search plants by *search* field next to the *contact* button. Searching is case insensitive. Only part of the name can be entered, those plants are displayed whose names contain entered characters.

*Cart* button forwards to the user cart and number next to it informs how many items are in the cart. User can log in by last button on navigation bar.

greenShop

[Home](#)

[Store](#)

[Contact](#)

[Cart 0](#)

[Login](#)

---



The row of four plants under large advertising picture forwards to the store filtering plants by corresponding category. It does same functionality as *store* button on the navigation bar with a difference that *store* button displays menu of all categories.



## Ordering process

User can start by clicking on the *store* button on the navigation bar and choosing the first option *all products* or one of the available categories. (Please see chapter Home page)

After that store page with offered plants is displayed.

greenShop

[Home](#)

[Store](#)

[Contact](#)



Cart 0

[Login](#)

## Store



Gongora cass 153.20 €

[View](#)

[Add to cart](#)



Mature Masde 99.99 €

[View](#)

[Add to cart](#)



Fragrant Sta 113.14 €

[View](#)

[Add to cart](#)



Dark red sma 94.26 €

[View](#)

[Add to cart](#)



Bauhinia Pur 62.13 €

[View](#)

[Add to cart](#)



White canna 83.75 €

[View](#)

[Add to cart](#)



Torch Ginger 49.50 €

[View](#)

[Add to cart](#)



Lagerstroemi 28.70 €

[View](#)

[Add to cart](#)

Plants are displayed as thumbnails consisting of picture, abbreviated name of plant, price, *view* button and *add to cart* button. *View* button forwards to the details page providing details of plant. On the top there are hyperlinks displaying under which category the plant belongs. User can display plants which belong to that

category or all plants. Under the hyperlinks are all elements included in thumbnail, description of the plant and number of items in stock.

[greenShop](#) [Home](#) [Store](#) [Contact](#)   Cart 0 [Login](#)

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[Store](#) / [Bonsai Trees](#) / [Cryptomeria japonica \(Japanese Cedar\)](#)



## Cryptomeria japonica (Japanese Cedar)

**Price: 71.50 €**

An evergreen conifer which is the national tree of Japan, often planted near temples for symbolic reasons. Makes an excellent bonsai tree as it is easily dwarfed and the foliage is dense which allows cloud pruning to enhance bonsai forms Height: up to 20 m (65 ft) but usually smaller in the UK. Can be kept dwarfed as a bonsai, Plant type: Evergreen conifer, Hardiness: Hardy to -15C (5F), Sun Exposure: Full sun to semi-shade, Soil: Moist and well-drained, fertile soils. Prefers deeper soils Propagation methods: Seeds and cuttings

Available Quantity: **45**

This page also allows to add plant to the cart. The plant can be added only once otherwise user is redirecting to the cart displaying warning message. Also only those plants can be added which are in stock.

[greenShop](#) [Home](#) [Store](#) [Contact](#)   Cart 1 [Login](#)

---

Item added to your cart.

## Cart

Name	Description	Category	Price	
Cryptomeria japonica (Japanese Cedar)	An evergreen conifer which is the national tree of Japan, often planted near temples for symbolic reasons. Makes an excellent bonsai tree as it is easily dwarfed and the foliage is dense which allows cloud pruning to enhance bonsai forms Height: up to 20 m (65 ft) but usually smaller in the UK. Can be kept dwarfed as a bonsai, Plant type: Evergreen conifer, Hardiness: Hardy to -15C (5F), Sun Exposure: Full sun to semi-shade, Soil: Moist and we...	Bonsai Trees	71.50 €	<a href="#">Remove</a>
			<b>Total:</b>	<b>71.50 €</b>

Item is added to the cart and *cart* button, on the navigation bar, displays that cart contains one item. Cart page displays list of added items with details. Item can be removed by *remove* hyperlink at the end of the

row. On the bottom of the list is displayed total price of all items. Under the total price there is *clear* button to remove all items included in the cart and *place order* button to move on the next page of the order process. User can add other items by going to the store by *store* button and repeating of whole process.

After going to the next step, the access denied page is displayed informing that user has no access to the *order* page and providing hyperlink to log in.

[greenShop](#) [Home](#) [Store](#) [Contact](#)   [Cart 1](#) [Login](#)

**Access Denied!**  
You do not have access to this page. Either you are not logged in or you do not have the privileges vieweing the requested page.

User can go to *login* page by provided hyperlink or by *login* button on the navigation bar.

[greenShop](#) [Home](#) [Store](#) [Contact](#)   [Cart 1](#) [Login](#)

---

### Please sign in

  
  
  
Haven't registered? Please go

If user is not registered the login page offers to go to the registration page by clicking on the *register* button under the form.

[greenShop](#) [Home](#) [Store](#) [Contact](#)   [Cart 1](#) [Login](#)

---

### Register Here

**Username**

**Email**

**Password**

**Confirm Password**



Registration form requires to enter some username which can not be in use, email that must in right form, password must contain at least 6 characters and must match with *confirm password* input.

## Register Here

Username

Email

Password

Confirm Password

After submitting and successful registration user is redirected to the home page. User goes again to the login page and log in by their user credentials. (*Please see instructions for the login*)

After successful login user is redirected to the home page. On the right of the navigation bar last button displays username. User can return to the cart by clicking on the *cart* button and can move on the order page by *place order* button. User can review their items included in the cart and remove items from the cart on the order page. In addition to that user is required to fill in the form to provide details of the order.

greenShop   Home   [Store](#) ▾   [Contact](#)         [Cart 1](#)   Hi, lubos!

## Order

### Review Order Items

Name	Price	
Cryptomeria japonica (Japanese Cedar)	71.50	<a href="#">Remove</a>
Total:		71.50

### Order Details

Name	<input type="text" value="Lubos Konik"/>
Address	<input type="text" value="Zahradnicka 26"/>
City	<input type="text" value="Bratislava"/>
PIN Code	<input type="text" value="81006"/>
<input type="submit" value="Order &amp; Checkout"/>	

When all inputs are correctly entered, the form can be submitted. The order is placed when user is successfully redirected to the profile page. There is message informing about created order. *Cart* button displays that there is no item in the cart since cart is emptied after placing of the order. Order is displayed on the last position of the order list placed on the right of the page. Initially order status is displayed as new. User can check whether the order status is not changed on this page. On the left of the page there is user credentials form displaying username and email. User can not change them, form allows only to change password. Password must be at least six characters long and *confirm password* input must match with password.

greenShop
Home
Store
Contact

Cart 0
Hi, lubos!

---

Your order has been placed.

### User credentials

Username

Email

Change password

Password

Confirm Password

### Orders

#	Order Date	Products	Order Status	Order Cost
14	2014-03-15	Cryptomeria japonica (Japanese Cedar)	New	71.50 €

The menu, under username button on the navigation bar, allows user to get to the profile page and also log out.

greenShop
Home
Store
Contact

Cart 0
[Hi, lubos!](#)

---



Profile
Logout

## User Guide for Administrator

Administrator's registration is similar to the customer's registration. Login button, on the navigation bar, redirects to the login form which has button to go to the registration form. *(Please see registration instructions for customer)*

Administrator's username must contain *admin* substring anywhere in the username. Email must have correct form. Password must be at least six characters long and must match with confirmation password.

### Register Here

Username

Email

Password

Confirm Password

Administration section is available for administrator in the menu under *username* button.

greenShop

Home

Store

[Contact](#)

Cart 0

Hi, [lubo\\_admin\\_1!](#)



- Administration
- Profile
- Logout

Administration section consists of three subsections: Categories, Products, Orders.

Categories section displays list of all categories in the system. The list contains category details, they are category name, category description and number of plants in each section. As last column of the list is delete action.

## Administration

[Back to site](#)

[Categories](#)   [Products](#)   [Orders](#)

Add Category

Category Name	Category Description	Products	
Bonsai Trees	Bonsai is a Japanese art form using miniature trees grown in containers. Similar practices exist in other cultures, including the Chinese tradition of penjing from which the art originated.	8	Delete
Palm Trees	Palm trees are a family of plants. This family is called Arecaceae. Palm trees are not true trees. They grow in hot climates.	4	Delete
Cactus Plants	Most cacti live in habitats subject to at least some drought. Many live in extremely dry environments, even being found in the Atacama Desert, one of the driest places on earth.	6	Delete
Flowering Tropicals	A flower, sometimes known as a bloom or blossom, is the reproductive structure found in flowering plants (plants of the division Magnoliophyta, also called angiosperms).	5	Delete
Orchids	Orchidaceae is a diverse and widespread family of flowering plants with blooms that are often colourful and often fragrant, commonly known as the orchid family. Along with the Asteraceae.	3	Delete

Please note that category can be deleted in case that it contains no items otherwise error message is displayed.

Please fix the following errors and try again.

**Changes didn't happen. Possible reasons include category still containing products, or database not being up.**

[Categories](#)   [Products](#)   [Orders](#)

Add Category

Category Name	Category Description	Products	
Bonsai Trees	Bonsai is a Japanese art form using miniature trees grown in containers. Similar practices exist in other cultures, including the Chinese tradition of penjing from which the art originated.	8	Delete

On the left of the categories list there is *add category* button. The button redirects to the page with form to add new category. Category name input is only required, category description input is restricted to 200 characters.

## Add Category

[Back](#)

Category name





Category description

Add

The next section is products section displaying all products ordered by category name. The products list contains product name, image, abbreviated product description, category name, price of the item and quantity, last column allows administrator to delete item.

[Categories](#) [Products](#) [Orders](#)

Add Product

Product Name	Image	Product Description	Category	Price	Quantity	
Artistic Japanese Bonsai Potted Tree		The term bonsai literally translated from Japanese means tray planting or tree in pot. The term refers specifically to the training and artistic visio...	Bonsai Trees	49.95 €	86	Delete
Bonsai Acer Palma		Acer palmatum , the Redleaf maple are known to make wonderful informal upright bonsai. Native to Japan, China and Korea. In nature, it is a small grow...	Bonsai Trees	32.80 €	33	Delete
Ficus Benjamina Weeping Fig Fabulous Bonsai		Originates from India evergreen tree green letahery leaves this makes a fantastic bonsai as you can see, sow the seed onto the surface of well drainin...	Bonsai Trees	65.00 €	66	Delete
		The Chinese Elm is one				

On the left of the products list there is button to redirect to the page with form to add new item.

## Add Product

[Back](#)

---

Category	<input type="text" value="----"/>
Product name	<input type="text"/>
Product Image	<div><input type="button" value="Prehľadávať..."/> Nie je zvolený súbor.</div>
Product Description	<div><div></div><div></div></div>
Price	<div><input type="text" value="00,00"/></div> €
Quantity	<input type="text" value="0"/>
<div><input type="button" value="Add"/></div>	

Category select option input allows administrator to choose from available categories in the system and is required. Product name, product image and product description are required inputs. Product image must be of jpeg, jpg, gif, png format. Price input must have maximum two numbers after decimal point and is required as well as quantity.



The last section is orders section displaying orders details. Details include ID of the order, date when order is created, products displays all names of items included in the order separated by the comma, status of the order shows actual status and administrator can update it from new to shipped, completed or cancelled. Name and address are details which customer enters on the order page before he places the order. Cost detail displays total price of the order and last column allows administrator to update status of the order.

Categories		Products	Orders				
ID	Date	Products	Status	Name	Address	Cost	
9	2014-03-15	Cryptomeria japonica (Japanese Cedar), Carpinus turczaninowii (Korean hornbeam), Euphorbia neohumbertii exotic madagascar palm cacti rare succulent	Completed ▾	Ivan Molcan	Ambroscho 26/B Bratislava 841 05	162.68 €	Update
10	2014-03-15	Brussels Ponytail Palm Bonsai, Aloe falcata - Cactus / Succulent / Exotic	Cancelled ▾	Ivan Molcan	Ambroseho 26/B Bratislava 841 05	108.49 €	Update
11	2014-03-15	Rare Black Spruce Bonsai Tree, Torch Ginger Etlingera elatior Seeds Flowering Tropical	Completed ▾	Daniel Bene	Adyho 28 Lucenec 984 01	202.7 €	Update
12	2014-03-15	Bonsai Acer Palma, Ficus Benjamina Weeping Fig Fabulous Bonsai, Japanese White Pine Bonsai Tree	Shipped ▾	Daniel Bene	Adyho 28 Lucenec 984 01	131.2 €	Update
13	2014-03-15	Brussels Sego Palm Bonsai, Bonsai Live Sago Palm Tree	New ▾	Daniel Bene	Adyho 28 Lucenec 984 01	82.21 €	Update
14	2014-03-15	Cryptomeria japonica (Japanese Cedar)	New ▾	Lubos Konik	Zahradnicka 26 Bratislava 810 06	71.5 €	Update

Please note when administrator deletes product which is included in some order, the name of product is displayed as *deleted product* in orders list.

13	2014-03-15	Brussels Sego Palm Bonsai, Bonsai Live Sago Palm Tree	New ▾	Daniel Bene	Adyho 28 Lucenec 984 01	82.21 €	Update
14	2014-03-15	deleted product	New ▾	Lubos Konik	Zahradnicka 26 Bratislava 810 06	71.5 €	Update

# Developer's Guide

In this project used technologies are PHP and JavaScript for business logic, Bootstrap framework is included in presentation layer.

Application has two tier architecture, business logic and presentation layer are stored on Apache web server, database data are stored on MySQL database server.

Application is divided to two main parts. Project root directory and /includes directory provide source code for index page, store page, cart and profile page, they are user by guest and customer. Directory /admin contains source code for administrator's section. CSS files and JavaScript files of bootstrap framework has separated directories, images included in application have /img directory which contains /img/uploads directory for images uploaded by administrator.

In application there are almost no classes, objects are created by retrieving data from database. Object oriented programming is used in database manager placed in /includes/dbManager.php file. This class uses object oriented singleton model to ensure that only one connection to the database exists in a time.

Business logic is included directly in presentation layer. In the root directory there are php files with this presentation layer and they represent all pages used by customer to access to store, order products and see orders in profile page. In /includes directory there are files containing only business logic (login-exec.php, order-exec.php, profile-data.php, register-exec.php). These files receive data from get or post methods, use corresponding methods mapped for particular request and processed data send to database or retrieve data to return to model layer which is rendered by presentation layer. In this directory are also php files used for presentation layer, they are fragments included in other php files of project root directory (header.php, nav.php, footer.php). The file nav.php included as fragment in other files contains source code to display the navigation bar on every page which provides functionality to get to almost every page of the application, to search for products, to display all products or only those under corresponding category, to get to login page or to log out.

Directory /admin includes php files which represent pages of administrator's section (index.php, category.php, products.php, orders.php) and their pages providing forms to add data to application (category-add.php, products-add.php), the last part are php files containing only business logic which contains methods mapping requests from clients and receive or send data to model layer which is rendered by presentation layer.

## Source Code

Please see attached Source Code files in PDF format.