



# Project in Computer Science

## Project Analysis Document -V 2.3



*Author:* Team 4

*Supervisors:* Ola Petersson, Ioseff Griffith

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*Subject:* 1DV508

## 1 Revision History

#	Date	Version	Description	Author
1	2016.04.04.	1.0	1. The 'Project Analysis Document' created as Word document.	Janty Azmat
2	2016.04.09.	1.1	1. Made in $\text{\LaTeX}$ 2. Modified structure 3. Modified requirements according to comments 4. Prepared document for team revision	Lamberg-Liszkay János
3	2016.04.12.	2.0	1. Reworked introduction 2. Added metatext for chapters 5, 5.1, and 5.2 3. Fixed layout sketches	Maxim Kravchenko
4	2016.04.14.	2.1	1. Made numbering of requirements continuous 2. Updated UML diagram to latest version	Lamberg-Liszkay János
5	2016.04.25.	2.2	1. Removed UML diagram 2. Updated Admin sketches: Product and Admin accounts pages	Maxim Kravchenko

#	Date	Version	Description	Author
6	2016.05.02.	2.3	<ol style="list-style-type: none"> <li>1. Added Use Cases section.</li> <li>2. Added 'Administrators Authentication Use Cases'.</li> <li>3. Added 'Administration Products Page Use Cases'.</li> <li>4. Added 'Administration Accounts Page Use Cases'.</li> <li>5. Added 'Administration Orders Page Use Cases'.</li> </ol>	Janty Azmat

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## **2 Introduction**

Consumption of goods is a big part of modern economy, and online shopping increases consumption drastically. Because of that, most of businesses either have a webstore, or look to establish it. Thus practical knowledge of how to create a web shop is extremely useful, since there is very likely to have a high demand in near future. For that reason, our team is developing an online shop.

## **3 Purpose**

The purpose of this project is to analyze, design and develop an online laptop web-shop. The final implementation of the project will handle selling laptops to end users online by the help of a client side that will use HTML/Javascript/CSS, and a server side that will use JavaServer Faces running on a Wildfly server, and a MySQL database.

## **4 Scope and core system functionalities**

Since the project will only provide the basic functionalities of a web-shop, and due to the not-yet-achieved knowledge in some fields (like security, payment, etc.), some features will not be included in this project. So, we can summarize what is in the scope of this project and what is not.

### **4.1 What is in the project scope (Core System Functionalities)**

The following general functionalities will be covered in this project:

- All functionalities that are related to normal browsing of a web-shop
- All functionalities that are related to purchasing (except for money transaction)
- Management of administrators' accounts
- Management of orders
- Management of products

### **4.2 What is not in the project scope**

- Actual form of handling money transactions
- Registering customer accounts
- Automatic handling of order status
- Providing secure connections between parts or actors
- Any form of customization of the website

## **5 Requirements**

For the purpose of testing and clarity between the customer and implementers, we outline the requirements in this section.

### **5.1 Functional Requirements**

Functional requirements are those that deal with how the functionality of the web shop

#### **5.1.1 General Requirements**

1. The webshop shall contain any number of products
2. All information about the products shall be stored
3. Each product shall have the following information:
  - (a) Name: name of the product
  - (b) Category: the category the product belongs to
  - (c) Quantity: availability of the product
  - (d) Price: price of the product
  - (e) Description: A text describing the product
  - (f) Image: An image of the product
4. The products shall be grouped into a number of pre-defined categories

#### **5.1.2 Customer mode requirements**

5. The customer shall be able to browse the products in the following ways:
  - (a) Show all available products
  - (b) Search for a product
  - (c) Show products in a selected category
6. It shall be possible to click on a product to see more details about it
7. The customer shall be able to put a product in a Shopping Basket
8. The customer shall be able to view the products in the Shopping Basket
9. It shall be possible to change the quantity of a product in the Shopping Basket, or remove a product
10. The customer shall be able to place an order
11. When placing an order, a form shall be shown where the customer enters his/her contact details (first name, last name, address, email, phone number)
12. When an order is finalized the customer shall receive an autogenerated order number
13. The customer shall be able to check the status of his/her order from the order number

### **5.1.3 Administrator mode requirements**

14. The webshop shall have an Admin system where an administrator can log in
15. Admin accounts and passwords shall be stored
16. An admin shall be able to change the status of an order
17. In the Admin system it shall be possible to:
  - (a) Add a new product
  - (b) Remove a product
  - (c) Change information about a product
  - (d) Update the quantity of items
  - (e) Add a new administrator account
  - (f) Remove an administrator account
  - (g) Add a new product category
  - (h) View all orders

## **5.2 Non-functional Requirements**

Non-functional requirements are those that deal with what tools will be used to establish the web shop and what we expect from the web shop.

### **5.2.1 Reliability**

18. The system should not crash if user input is different than expected
19. The system should always produce the same expected result of an action
20. An already placed order should not get lost if the system crashes

### **5.2.2 Implementation**

21. Server side of the project will be implemented using Java.
22. Client side of the project will be implemented using HTML/JavaScript/CSS
23. Data storage will be implemented using a MySQL database.

## 6 Use Cases

### 6.1 Administrators Authentication Use Cases

#### 6.1.1 Admin Login

Actors	Website Administrator (will be called Admin)
Initiation	The Admin visit administration-pages.
Pre-condition	The Admin is not logged in.
Post-conditions	<ol style="list-style-type: none"><li>1. The Admin is logged into administration-pages.</li><li>2. The Admin login is refused and the Admin not logged in.</li></ol>
Primary Flow	<ol style="list-style-type: none"><li>1. The Admin visit administration-pages.</li><li>2. He/She enters their credentials.</li><li>3. Login-Bean collects credentials and forwards request to Interact-Database object.</li><li>4. Interact-Database object connects to database and checks if there is a credential match.</li><li>5. Interact-Database finds a valid match and responses with approval to Login-Bean.</li><li>6. Login-Bean forwards Admin to administration-pages.</li><li>7. The Admin logged into administration-pages.</li></ol>
Alternative Flow	<ol style="list-style-type: none"><li>5. Interact-Database does not find a valid match and responses with disapproval to Login-Bean.</li><li>6. Login-Bean prepares access denied message and display it to Admin.</li><li>7. The Admin not logged into administration-pages.</li></ol>



### 6.1.2 Admin Logout

Actors	Website Administrator (will be called Admin)
Initiation	The Admin clicks 'Logout' button.
Pre-condition	The Admin is logged into administration-pages.
Post-conditions	The Admin is not logged into administration-pages.
Primary Flow	<ol style="list-style-type: none"><li>1. The Admin clicks 'Logout' button.</li><li>2. Login-Bean clears session saved credentials (just in case) and invalidates the session.</li><li>3. Login-Bean forwards the Admin to 'Login' page.</li><li>4. The Admin is not logged into administration-pages.</li></ol>

## 6.2 Administration Products Page Use Cases

### 6.2.1 Display All Product

Actors	Website Administrator (will be called Admin)
Initiation	'Products' section button is pressed by Admin.
Pre-condition	No product is displayed in the 'Products' section.
Post-conditions	A table of products is displayed in the 'Products' section.
Primary Flow	<ol style="list-style-type: none"><li>1. 'Products' section button is pressed by Admin.</li><li>2. Admin-Bean directs to and shows the 'Products' section.</li><li>3. Admin-Bean request a list of all products from Interact-Database.</li><li>4. Interact-Database connects to database and retrieves the list and send it back to Admin-Bean.</li><li>5. Admin-Bean prepares the list to be displayed.</li><li>6. A table of products is displayed in the 'Products' section.</li></ol>

### 6.2.2 Search Products

Actors	Website Administrator (will be called Admin)
Initiation	Admin chooses a search criteria and hits search.
Pre-condition	A previous table of products (that does not match search criteria) is displayed.
Post-conditions	A table of search results is displayed.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin chooses a search criteria and hits search.</li><li>2. Admin-Bean collects search criteria and forwards search request to Interact-Database.</li><li>3. Interact-Database connects to database and retrieves the list according to search criteria and send it back to Admin-Bean.</li><li>4. Admin-Bean prepares the list to be displayed.</li><li>5. A table of search results is displayed.</li></ol>

### 6.2.3 Add Product

Actors	Website Administrator (will be called Admin)
Initiation	Admin fills new product 'A' form and hits save.
Pre-condition	Product 'A' is not in database.
Post-conditions	Product 'A' is in database.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin fills new product 'A' form and hits save.</li><li>2. Admin-Bean collects product 'A' info and forwards add request to Interact-Database.</li><li>3. Interact-Database connects, checks and adds product 'A' to database.</li><li>4. Product 'A' is in database.</li><li>5. (trigger 'Display All Product' use case when needed).</li></ol>

#### 6.2.4 Edit Product

Actors	Website Administrator (will be called Admin)
Initiation	Admin hits edit near product 'B' and changes product data.
Pre-condition	New product 'B' data not saved.
Post-conditions	New product 'B' data are saved.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin hits edit near product 'B' and changes product data.</li><li>2. Admin-Bean collects product 'B' new info and forwards the update request to Interact-Database.</li><li>3. Interact-Database connects and updates product 'B' data in database.</li><li>4. New product 'B' data are saved.</li><li>5. (trigger 'Display All Product' use case when needed).</li></ol>

#### 6.2.5 Delete Product

Actors	Website Administrator (will be called Admin)
Initiation	Admin hits edit near product 'C' and then hits delete.
Pre-condition	Product 'C' is in database.
Post-conditions	Product 'C' is not in database.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin hits edit near product 'C' and then hits delete.</li><li>2. Admin-Bean collects product 'C' ID and forwards the delete request to Interact-Database.</li><li>3. Interact-Database connects and deletes product 'C' from database.</li><li>4. Product 'C' is not in database anymore.</li><li>5. (trigger 'Display All Product' use case when needed).</li></ol>

### 6.3 Administration Accounts Page Use Cases

#### 6.3.1 Display All Admins

Actors	Website Administrator (will be called Admin)
Initiation	'Admins' section button is pressed by Admin.
Pre-condition	No admin is displayed in the 'Admins' section.
Post-conditions	A table of Admins is displayed in the 'Admins' section.
Primary Flow	<ol style="list-style-type: none"><li>1. 'Admins' section button is pressed by Admin.</li><li>2. Admin-Bean directs to and shows the 'Admins' section.</li><li>3. Admin-Bean request a list of all Admins from Interact-Database.</li><li>4. Interact-Database connects to database and retrieves the list and send it back to Admin-Bean.</li><li>5. Admin-Bean prepares the list to be displayed.</li><li>6. A table of Admins is displayed in the 'Admins' section.</li></ol>

#### 6.3.2 Search Admin (By full or part of name)

Actors	Website Administrator (will be called Admin)
Initiation	Admin types a full or part of some Admin's user-name in search box and clicks search.
Pre-condition	A previous table of Admins (that does not match search criteria) is displayed.
Post-conditions	A table of search results is displayed.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin types a full or part of some Admin's user-name in search box and clicks search.</li><li>2. Admin-Bean collects search criteria and forwards search request to Interact-Database.</li><li>3. Interact-Database connects to database and retrieves the list according to search criteria and send it back to Admin-Bean.</li><li>4. Admin-Bean prepares the list to be displayed.</li><li>5. A table of search results is displayed.</li></ol>

### 6.3.3 Add Admin

Actors	Website Administrator (will be called Admin)
Initiation	Admin fills new admin 'A' form and hits save.
Pre-condition	Admin 'A' is not in database.
Post-conditions	Admin 'A' is in database.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin fills new admin 'A' form and hits save.</li><li>2. Admin-Bean collects new admin 'A' info and forwards add request to Interact-Database.</li><li>3. Interact-Database connects, checks and adds new admin 'A' to database.</li><li>4. Admin 'A' is in database.</li><li>5. (trigger 'Display All Admins' use case when needed).</li></ol>

### 6.3.4 Edit Admin Password

Actors	Website Administrator (will be called Admin)
Initiation	Admin hits edit near admin 'B' and changes its password.
Pre-condition	Admin 'B' has the old password.
Post-conditions	Admin 'B' has the new password.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin hits edit near admin 'B' and changes its password.</li><li>2. Admin-Bean collects admin 'B' new password and forwards the update request to Interact-Database.</li><li>3. Interact-Database connects and updates admin 'B' password in database.</li><li>4. Admin 'B' has the new password.</li><li>5. (trigger 'Display All Admins' use case when needed).</li></ol>

### 6.3.5 Delete Admin

Actors	Website Administrator (will be called Admin)
Initiation	Admin hits edit near admin 'C' and then hits delete.
Pre-condition	Admin 'C' is in database.
Post-conditions	Admin 'C' is not in database.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin hits edit near admin 'C' and then hits delete.</li><li>2. Admin-Bean collects admin 'B' user-name and forwards the delete request to Interact-Database.</li><li>3. Interact-Database connects and deletes admin 'C' from database.</li><li>4. Admin 'C' is not in database anymore.</li><li>5. (trigger 'Display All Admins' use case when needed).</li></ol>

## 6.4 Administration Orders Page Use Cases (note: Admins do not create orders)

### 6.4.1 Display All Orders

Actors	Website Administrator (will be called Admin)
Initiation	'Orders' section button is pressed by Admin.
Pre-condition	No orders is displayed in the 'Orders' section.
Post-conditions	A table of Orders is displayed in the 'Orders' section.
Primary Flow	<ol style="list-style-type: none"><li>1. 'Orders' section button is pressed by Admin.</li><li>2. Admin-Bean directs to and shows the 'Orders' section.</li><li>3. Admin-Bean request a list of all Orders from Interact-Database.</li><li>4. Interact-Database connects to database and retrieves the list and send it back to Admin-Bean.</li><li>5. Admin-Bean prepares the list to be displayed.</li><li>6. A table of Orders is displayed in the 'Orders' section.</li></ol>

### 6.4.2 Search Orders

Actors	Website Administrator (will be called Admin)
Initiation	Admin chooses a search criteria and hits search.
Pre-condition	A previous table of orders (that does not match search criteria) is displayed.
Post-conditions	A table of search results is displayed.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin chooses a search criteria and hits search.</li><li>2. Admin-Bean collects search criteria and forwards search request to Interact-Database.</li><li>3. Interact-Database connects to database and retrieves the list according to search criteria and send it back to Admin-Bean.</li><li>4. Admin-Bean prepares the list to be displayed.</li><li>5. A table of search results is displayed.</li></ol>

### 6.4.3 Edit Order

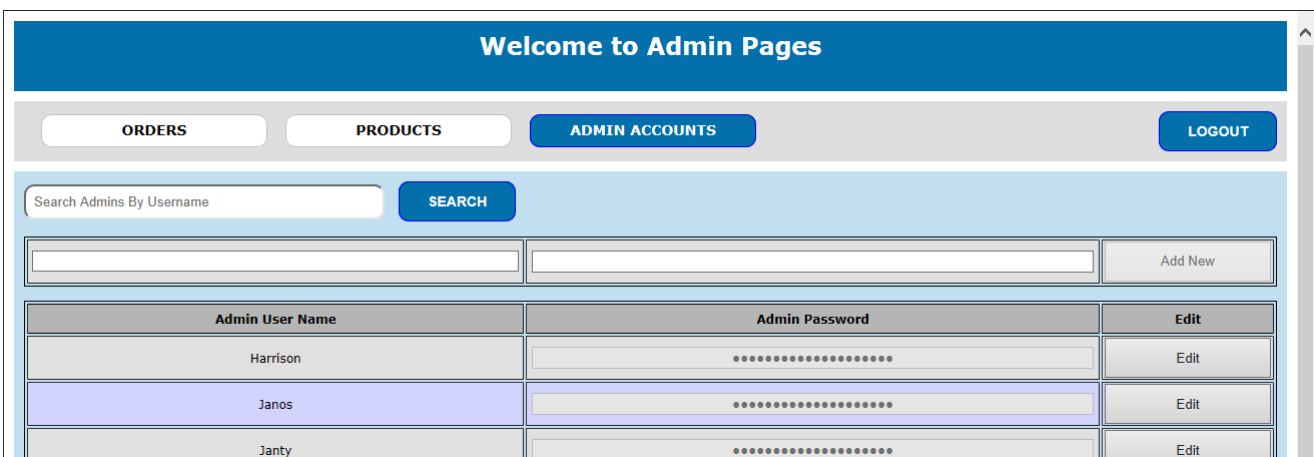
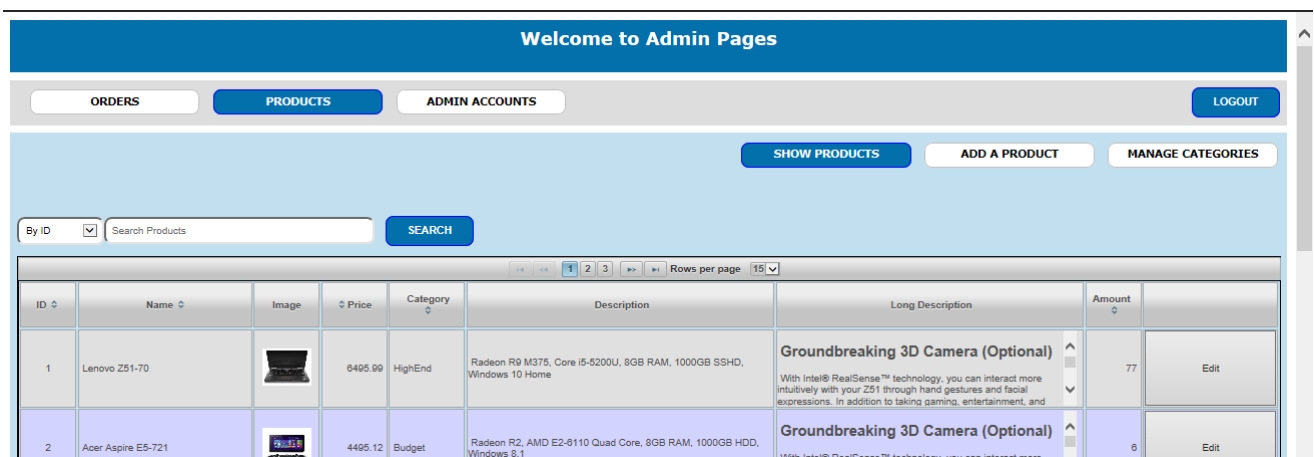
Actors	Website Administrator (will be called Admin)
Initiation	Admin hits edit near order 'A' and changes order data.
Pre-condition	New order 'A' data not saved.
Post-conditions	New order 'A' data are saved.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin hits edit near order 'A' and changes order data.</li><li>2. Admin-Bean collects order 'A' new info and forwards the update request to Interact-Database.</li><li>3. Interact-Database connects and updates order 'A' data in database.</li><li>4. New order 'A' data are saved.</li><li>5. (trigger 'Display All Orders' use case when needed).</li></ol>

#### 6.4.4 Delete Order

Actors	Website Administrator (will be called Admin)
Initiation	Admin hits edit near order 'B' and then hits delete.
Pre-condition	Order 'B' is in database.
Post-conditions	Order 'B' is not in database.
Primary Flow	<ol style="list-style-type: none"><li>1. Admin hits edit near order 'B' and then hits delete.</li><li>2. Admin-Bean collects order 'B' ID and forwards the delete request to Interact-Database.</li><li>3. Interact-Database connects and deletes order 'B' and all included products in it from database.</li><li>4. Order 'B' is not in database anymore.</li><li>5. (trigger 'Display All Orders' use case when needed).</li></ol>



# 7 Layout Sketches



Welcome to Admin Pages

ORDERS

PRODUCTS

ADMIN ACCOUNTS

LOGOUT

By Order Number

Search Products

SEARCH

1

Rows per page

15

Num	Customer First Name	Customer Last Name	Customer Phone Number	Customer Email	Customer Address	Order's Data & Time	Order's Products	Total Order Price	Order Status	
1607006	Nart	Badanoka	0700700700	aa@bb.cc	The Old story land. Third avenue.	29-05-2016 21:35:26	[19 : 1] : GIGABYT [22 : 1] : Linx 1010 [29 : 1] : HP Pavili	16900.99	Shipped	Edit
9179097	Thord	Moller	4543576	sdf@sdf.com	sdfsdf	29-05-2016 19:01:12	[4 : 1] : Apple MacBo	28490.01	New	Edit
							[18 : 12] : Lanton To D			

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## Welcome to Awesome Computers

### HP ProBook 430

This is our latest computers


ASUS ROG

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Shopping Cart 0

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



## Budget

7 results.

1

Items per page

15

Name	Description	Price
 Acer Aspire E5-721	Radeon R2, AMD E2-6110 Quad Core, 8GB RAM, 1000GB HDD, Windows 8.1	4495.12 
 Laptop To Delete 1	Radeon R2, AMD E2-6110 Quad Core, 6GB RAM, 500GB HDD, Windows 8.1	2399.99 
 Laptop To Delete 2	Radeon R2, AMD E2-6110 Quad Core, 6GB RAM, 500GB HDD, Windows 8.1	2399.99 
 Laptop To Delete 3	Radeon R2, AMD E2-6110 Quad Core, 6GB RAM, 500GB HDD, Windows 8.1	2399.99 
 Sony Vaio Duo	Touchscreen Laptop Convertibl 13.3" 4GB Windows 8 Intel Core i5 3rd Gen.	6666.98 
 Toshiba P50T-C-10Q Touchscreen	15.6-inch 16GB RAM 6th Gen Intel Core i7-6500U, 2.50 / 3.10 Turbo GHz	8888.99 
 Fujitsu Lifebook A514	15.6-inch 4GB RAM Windows 10 Intel Core i3-4005U	3850.69 

1

Items per page

15

Information

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## Acer Aspire E5-721



 Available

4495.12 SEK 

**Description:**

**Groundbreaking 3D Camera (Optional)**

With Intel® RealSense™ technology, you can interact more intuitively with your Z51 through hand gestures and facial expressions. In addition to taking gaming, entertainment, and video chats to another dimension, the built-in 3D Camera gives you greater control.

**Crisp, Vivid Visuals**

The Lenovo Z51 doesn't compromise on display resolution with a Full HD (1920 x 1080) display coming standard. Keep more windows open at the same time, watch your games pop in high res, or kick back to enjoy a movie at the end of the day.


**Customizable Graphics**

Information

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**AWESOME  
COMPUTERS**

Shopping Cart <sup>5</sup>

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## Your Shopping Cart

1

10

Rows per page

10




Lenovo Z51-70

1

6495.99

Remove




SuperLaptop ProGo 5000

1

59999.99

Remove




Lenovo Yoga 3

1

6990.00

Remove




Laptop To Delete 3

1

2399.99

Remove



Asus X550CA-XX957H

1

4000.00

Remove

1

10

Rows per page

10

Total Price: 79885.97 SEK

Checkout

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