SKJOLD BURNE

Database sollution for an e-shop - Skjold Burne

CLmil-v11e - Multimedia Design – 3.semester 1. project
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THA / IRF

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This report describes our first project for the second year in the Multimedia Design & Communication programme. Our assignment was to create a database (e-shop solution) for the well-known e-shop.

We chose as our fictional cutomer :
Skjold Burne Vinhandel - *http://www.skjoldburne-hjoerring.dk/*

We created a database to store the data, refer to a collection of related pieces of information stored on a server, retrieve and update desired pieces of information.

We analysed fully the document and developed a functioning database that can support a business in the future.
In this project we should learn to be aware of the importance of a well-defined and documented analysis before developing a product and to understand the use of documentation for development and maintenance various activities.

In this project we did not focus on the aspects of design and layout of the website.
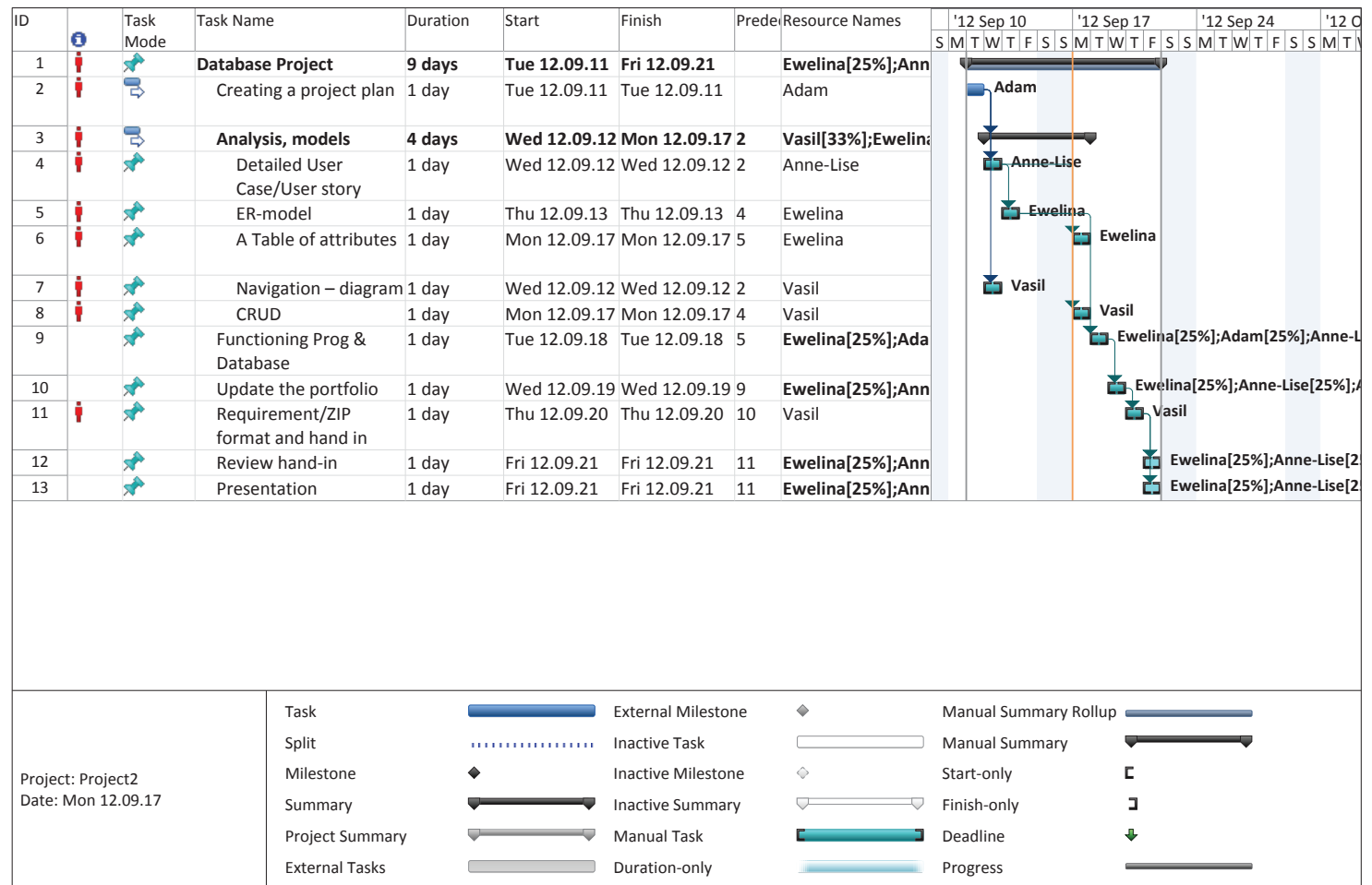
Project Plan

Our first step was to create a project plan, which shows us the how far we are, how much time we can spend on different tasks, and to define our goals to reach in time.

As a second main step, we made an analysis and models related to the project, such as User Story, ER-model, Table of attributes, Navigation-diiagram and CRUD.

We divided all parts so that each of us had different tasks. Nevertheless we always made things together, checked errors and agreed on how things should be.

The programming of our database started with some practice, and afterwards we started creating our own database.

And as our last steps, we uploaded our portfolio, fullfiled all the requirements, checked if everything was going on the right way and we finally handed-in.
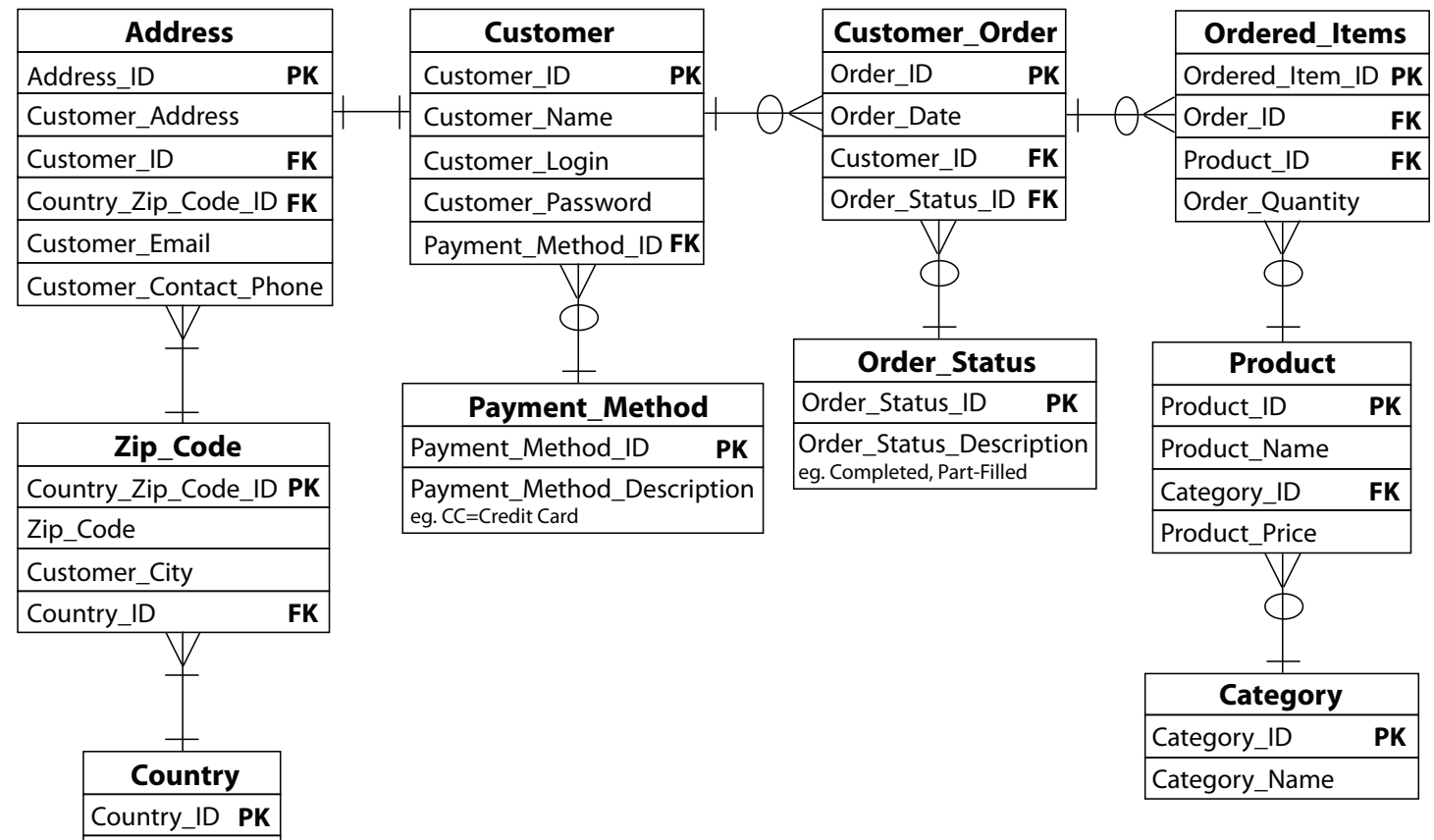
ID	Task Mode	Task Name	Duration	Start	Finish	Prede	Resource Names
1		**Database Project**	**9 days**	**Tue 12.09.11**	**Fri 12.09.21**		**Ewelina[25%];Ann**
2		Creating a project plan	1 day	Tue 12.09.11	Tue 12.09.11		Adam
3		**Analysis, models**	**4 days**	**Wed 12.09.12**	**Mon 12.09.17**	2	**Vasil[33%];Ewelina**
4		Detailed User Case/User story	1 day	Wed 12.09.12	Wed 12.09.12	2	Anne-Lise
5		ER-model	1 day	Thu 12.09.13	Thu 12.09.13	4	Ewelina
6		A Table of attributes	1 day	Mon 12.09.17	Mon 12.09.17	5	Ewelina
7		Navigation – diagram	1 day	Wed 12.09.12	Wed 12.09.12	2	Vasil
8		CRUD	1 day	Mon 12.09.17	Mon 12.09.17	4	Vasil
9		Functioning Prog & Database	1 day	Tue 12.09.18	Tue 12.09.18	5	**Ewelina[25%];Ada**
10		Update the portfolio	1 day	Wed 12.09.19	Wed 12.09.19	9	**Ewelina[25%];Ann**
11		Requirement/ZIP format and hand in	1 day	Thu 12.09.20	Thu 12.09.20	10	Vasil
12		Review hand-in	1 day	Fri 12.09.21	Fri 12.09.21	11	**Ewelina[25%];Ann**
13		Presentation	1 day	Fri 12.09.21	Fri 12.09.21	11	**Ewelina[25%];Ann**

Project: Project2
Date: Mon 12.09.17

Task		External Milestone	Manual Summary Rollup
Split		Inactive Task	Manual Summary
Milestone		Inactive Milestone	Start-only
Summary		Inactive Summary	Finish-only
Project Summary		Manual Task	Deadline
External Tasks		Duration-only	Progress

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Project Plan
Critical path

Here is the version of the Project Plan that shows
the critical path, where we could not have any delay,
if we wanted to finish the project in time.

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Task	▬▬▬	Inactive Task	▭	Start-only	⊏
Split	··············	Inactive Milestone	◇	Finish-only	⊐
Milestone	◆	Inactive Summary	▽▽	Deadline	⬇
Summary	▬▬▬	Manual Task	▬▬▬	Critical	▬▬▬
Project Summary	▽▽	Duration-only	▬▬	Critical Split	··············
External Tasks	▬▬▬	Manual Summary Rollup	▬▬▬	Progress	▬▬▬
External Milestone	◆	Manual Summary	▬▬▬		

Project: Project2
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Entity Relation Diagram
on 3rd normal form

To model a data, our group has used one of the most widely used technique – Entity Relationship Diagram. Data modeling is an essential component of database design and development.

Before creating the ER Diagram on 3rd Normal Form, we determined what needs to be done, we clarified the scope and we analyzed all the requirements that are needed for the system. We started the database design with a creation of conceptual design, for which the ER model is useful.

After modeling the entities with their relationships, we normalized the model. Normalization of data is a process of adjusting relations to have several desirable characteristics. This process eliminates certain types of data redundancy, avoids some update anomalies and in the result we have a clearer data model. The last step involves creating the relational database. The Data is loaded into the database, and the system is thoroughly tested.

After the system is in production, the maintenance phase begins. In this phase, problem are corrected, and enhancements are implemented.

Address
Address_ID	**PK**
Customer_Address	
Customer_ID	**FK**
Country_Zip_Code_ID	**FK**
Customer_Email	
Customer_Contact_Phone	

Zip_Code
Country_Zip_Code_ID	**PK**
Zip_Code	
Customer_City	
Country_ID	**FK**

Country
Country_ID	**PK**

Customer
Customer_ID	**PK**
Customer_Name	
Customer_Login	
Customer_Password	
Payment_Method_ID	**FK**

Payment_Method
Payment_Method_ID	**PK**
Payment_Method_Description	
eg. CC=Credit Card	

Customer_Order
Order_ID	**PK**
Order_Date	
Customer_ID	**FK**
Order_Status_ID	**FK**

Order_Status
Order_Status_ID	**PK**
Order_Status_Description	
eg. Completed, Part-Filled	

Ordered_Items
Ordered_Item_ID	**PK**
Order_ID	**FK**
Product_ID	**FK**
Order_Quantity	

Product
Product_ID	**PK**
Product_Name	
Category_ID	**FK**
Product_Price	

Category
Category_ID	**PK**
Category_Name	

Table of attributes

In order to describe the previous Entity-Relationship Diagram in a more detailed way, we created a table of attributes.

In a first column we have put entities – objects that are involved in the enterprise and that be distinguished from other objects.

After – the attributes which describe one aspect of an entity type. Attributes are a single valued and they are indivisible. We defined values of the attributes, notes and data type.

This kind of description allows us to create a properly working database.

ENTITY	ATTRIBUTES	VALUE	NOTES	DATA TYPE
Address	Address_ID	1 - X	Unique no.	N
	Customer_Address	All char.	Max. 50 char.	AN
	Customer_ID	1 - X	Unique no.	N
	Zip_Code	1000 – 9999	Number	N
	Customer_Email	All char.	Max. 50 char.	AN
	Customer_Contact_Phone	10000000 – 99999999	Max. 50 char.	N
Zip_Code	Country_Zip_Code_ID	1 - X	Unique no.	N
	Customer_City	A – Å	Max. 50 char.	AN
	Country_ID	1 - X	Unique no.	N
Country	Country_ID	1 - X	Unique no.	N
	Country_Name	A – Å	Max. 50 char.	AN
Customer	Customer_ID	1 - X	Unique no.	N
	Customer_Name	A – Å	Max. 50 char.	AN
	Customer_Login	All char.	Max. 10 char.	AN
	Customer_Password	All char.	Max. 8 char.	AN
	Payment_Method	A – Å	Max. 50 char.	AN
Payment_Method	Payment_Method_ID	1 - X	Unique no.	N
	Payment_Method_Description	All char.	Max. 20 char.	AN
Customer_Order	Order_ID	1 - X	Unique no.	N
	Order_Date	yyyy-mm-dd hh:mm:ss	Max. 14 char.	N
	Customer_ID	1 - X	Unique no.	N
	Order_Status	A – Å	Max. 20 char.	AN
Order_Status	Order_Status_ID	1 - X	Unique no.	N
	Order_Status_Description	A – Å	Max. 30 char.	AN
Ordered_Items	Ordered_Item_ID	1 - X	Unique no.	N
	Order_ID	1 - X	Unique no.	N
	Product_ID	1 - X	Unique no.	N
	Order_Quantity	1 - X	Number	N
Product	Product_ID	1 - X	Unique no.	N
	Product_Name	All char.	Max. 30 char.	AN
	Product_Category	A – Å	Max. 30 char.	AN
	Product_Price	Currency	-	Currency
Category	Category_ID	1 - X	Unique no.	N
	Category_Name	A – Å	Max. 30 char.	AN

User Story
buyer

The following user story depicts a scenario in which the user purchases (attempts to purchase) wine bottle(s) on Skjold Burne's website.

It explains how the user is going to interact with the website, while going through the Buying process and the registration process or Log in process - if the user is known in order to make purchase an order.

Buying process

1. The user selects a category of wine, and by clicking on "Buy" it saves it into the cart.

2. The user wants to be able to buy at least one item in the e-shop.

3. When the user goes to its cart, he/she will find the list of all the items he/she wants to buy.

4. From then on, the user can delete the items he/she does not want to buy by ticking the box next to the item.

5. The user can add the quantity of ordered items clicking on '+' or '-' near the number of quantity.

6. Below the list of items, the user will find out the amount of money he/she will need to pay for buying all these items before purchasing the buying process.

Registration process

1. From this point, the user will be asked to register or to log in.

2. For a registration – an unknown user – the user needs to fill in the registration form:

• Name
• E-mail
• Login
• Password
• Address
• City
• Country zip-code
• Country
• Phone number

3. After filling in the form, the user will be asked to save/submit his registration.

4. If any error in the registration, the user will get an allert telling him which fields he should correct or complete.

5. By finalizing the registration – when all the fields are completed, the user will get an e-mail and a message on the website saying that he will get a confirmation e-mail. By clicking on the link the user will get in the e-mail, he will be redirected to its cart - on the website - and its order and profile will be saved.

Log in process

1. For 'log in' – known user – The user needs to fill-in its login and password and press the button "Log in".

2. From then, the user will get a message if the password or email is not correct.

3. The user can now finalize the order by clicking BUY in its cart.

4. The user will have to choose payment method – VISA / Paypal.. - and how he wants to get it delivered – Post / Fedex..

User Story
seller

The following user story depicts a scenario in which the seller acesses to the e-shops data and database.

It shows how the seller is going to interact with the website's data and its database, meaning dealing with the buyer's order.

E-shop

1. The seller wants to provide and have an access to a current catalog of product offerings.

• create new categories
• add new products
• change data
• erase products or categories

2. The seller allows eventual buyers to analyze and evaluate items by saving selected items.
3. The seller provides an electronic shopping card where buyers can store their purchases.

Selling process

1. The seller verifies a customer's order and approves the customer's purchase.
2. Process orders (back-end services).
3. The seller arranges for product delivery.
4. The seller provides possibility of registration.

E-shop development

1. The seller wants to provide and have an access to a current catalog of product offerings.
2. The seller wants to analyze purchases in order to customize customer's experiences.
3. The seller wants to analyze and measure the traffic on the site to modify and maintain the various applications.

Description of User Stories

These descriptions of user stories are made of basic mock -ups to explain with pictures how the user can use the system, what are his possibilities and how the website should respond to his requests.

The mock-ups are not showing how the website's design should be in reality, but it is just to give an idea of how it should look like. That is why here, the Shopping cart is just showing 3 different, fictional and random kinds of wine.
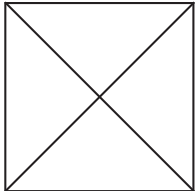
We chose to explain 3 essential steps of the Buyer's user story : The Buying process, the Registration process and the Log in process.

Buying process

4. **From then on, the user can delete the items he/she does not want to buy by ticking the box next to the item.**

Your Shopping Cart
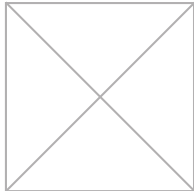
Chardonnay 2008
Chateau Lacombe

Pinot gris 2001
Chateau Ducomte

St Emilion 1998
Domaine Basillac

Qt ▬ 3 ➕   Qt ▬ 1 ➕   Qt ▬ 1 ➕

Quantity	Product	Price	Total
3	Chardonnay 2008 Chateau Lacombe	280 dkk	340 dkk
1	Pinot gris 2001 Chateau Ducomte	160 dkk	
1	St Emilion 1998 Domaine Basillac	95 dkk	

Shop more

Purchase

By clicking on the - and + signs, the user can change the quantity of bottles of this kind he/she wants to order

By ticking or unticking this box, you can add or delete products from the cart and that makes the total of the order change
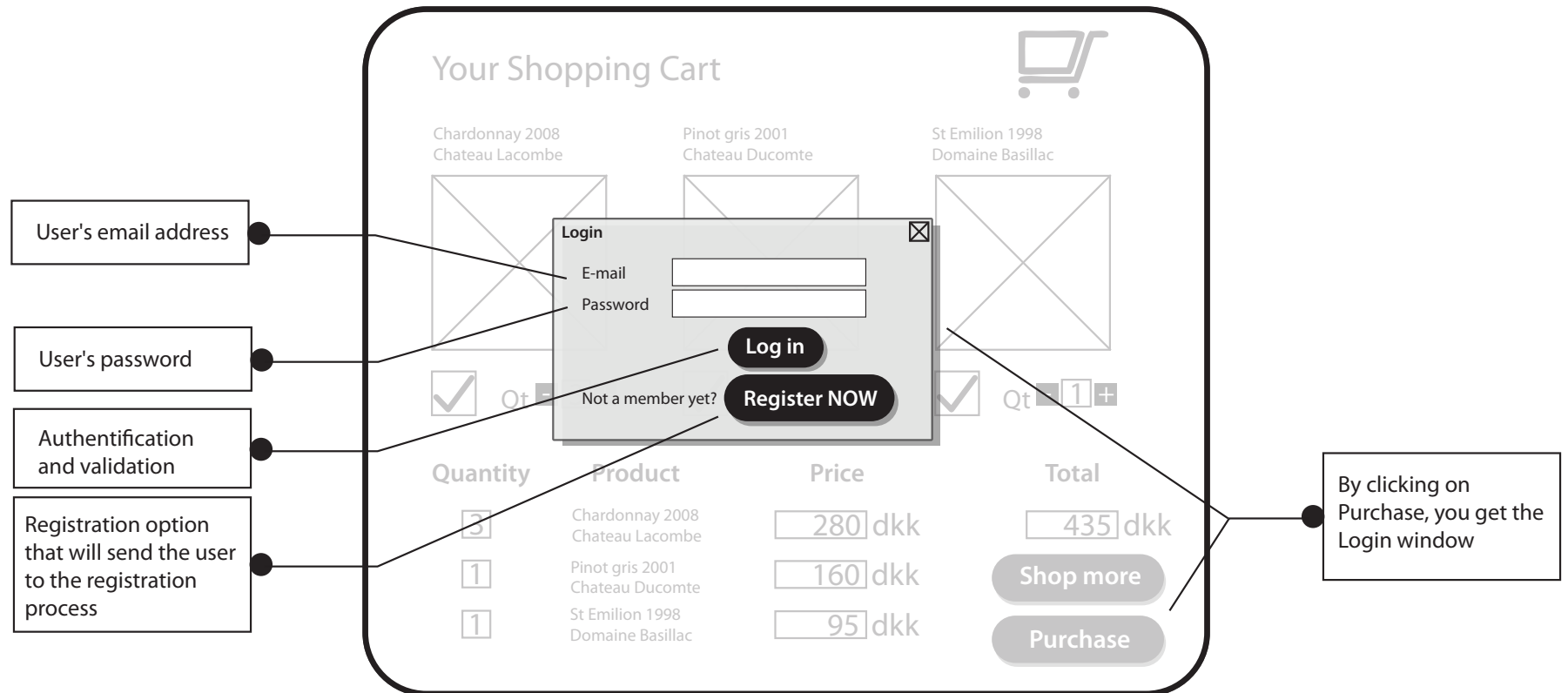
The user can go back to the catalogue by clicking on Shop more, but its cart will be saved in the database even if not registered

By clicking on purchase, the user will access to the registration or login process depending if he/she is a known user or not
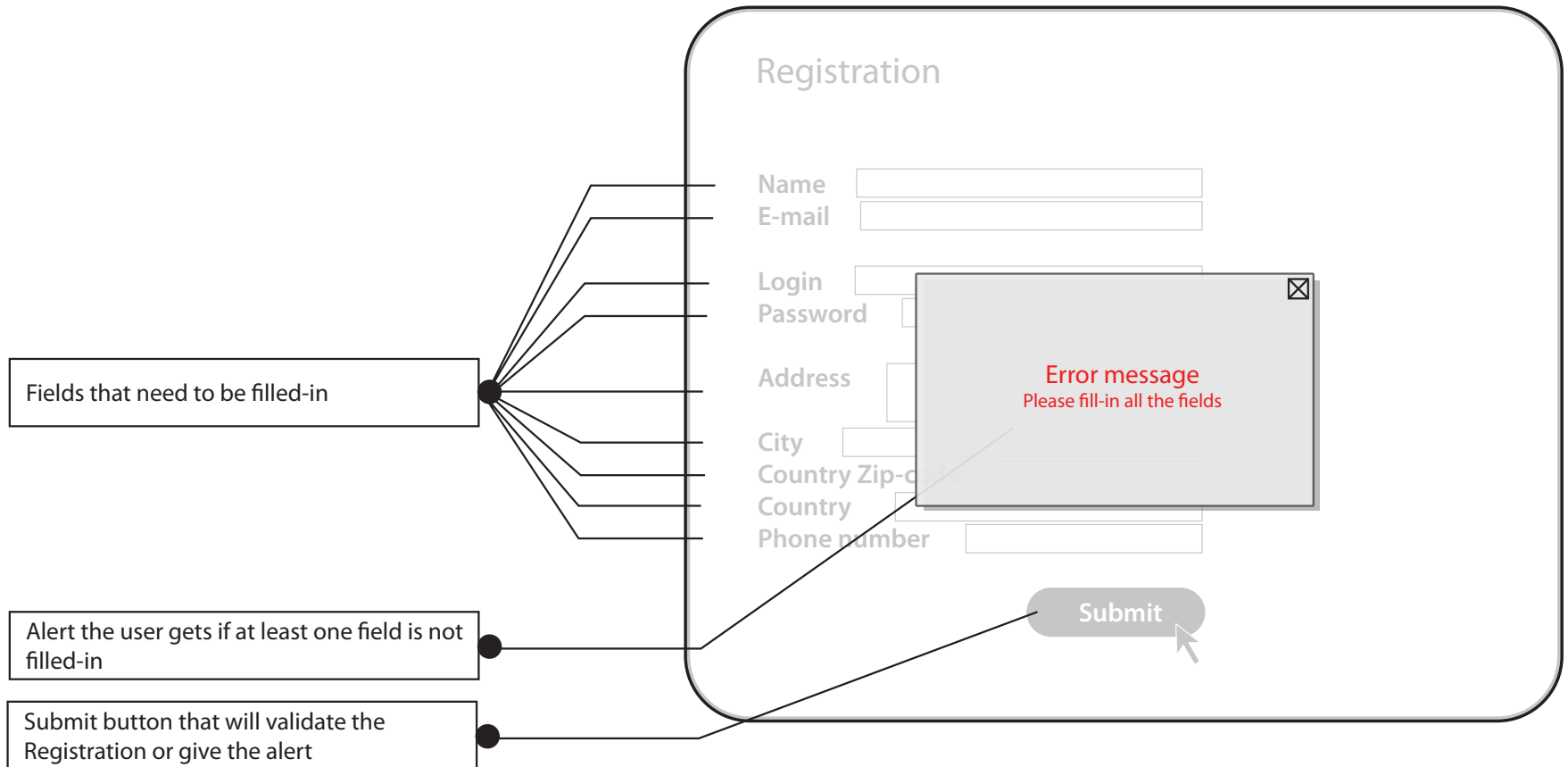
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Description of User Stories

Log in process

1. **For 'log in' – known user – The user needs to fill-in its login and password and press the button "Log in"**

Your Shopping Cart

Chardonnay 2008
Chateau Lacombe

Pinot gris 2001
Chateau Ducomte

St Emilion 1998
Domaine Basillac

User's email address

Login

E-mail

Password

User's password

Log in

Authentification
and validation

Qt

Not a member yet?   **Register NOW**

Qt   1

Registration option
that will send the user
to the registration
process

Quantity	Product	Price	Total
3	Chardonnay 2008 Chateau Lacombe	280 dkk	435 dkk
1	Pinot gris 2001 Chateau Ducomte	160 dkk	**Shop more**
1	St Emilion 1998 Domaine Basillac	95 dkk	**Purchase**

By clicking on
Purchase, you get the
Login window

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Description of User Stories

Registration process

4. **If any error in the registration, the user will get an allert telling him which fields he should correct or complete.**
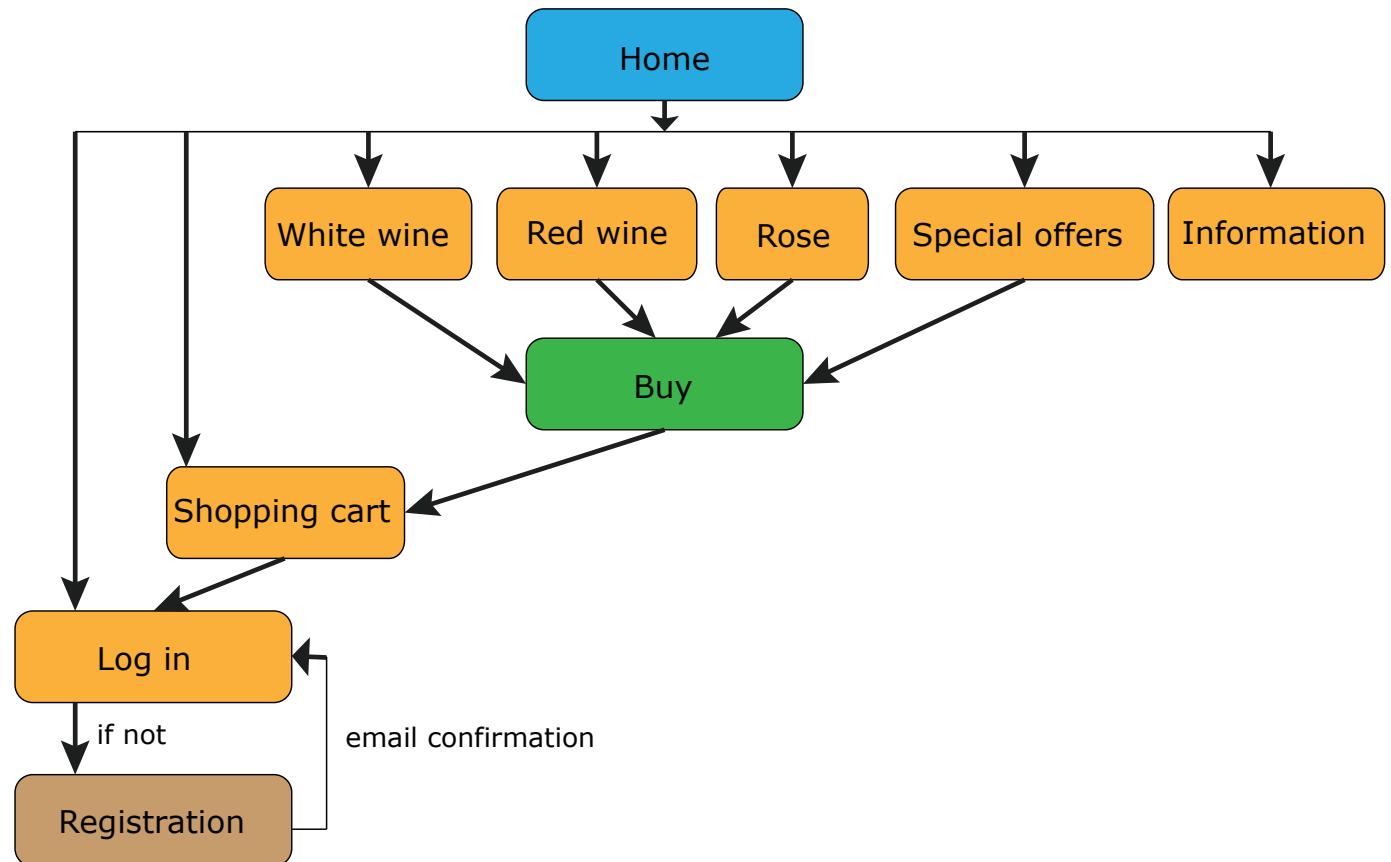
Registration

Name
E-mail

Login
Password

Fields that need to be filled-in

Address

⊠

Error message
Please fill-in all the fields

City
Country Zip-c
Country
Phone number

Submit

Alert the user gets if at least one field is not filled-in

Submit button that will validate the Registration or give the alert

...

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Navigation Diagram

Our web shop has an easy and simple navigation. It contains a main home page, subpages and registration/buying process.

There are few categories, about kinds of wine – white, red and rosé. It is more comfortable for the customer to search on that way because there are so many different brands and types, and if all of them were in one place it would be messy.

We have a directory of "Special Offers" where the customer can buy wine on discount price. There is an Information page also.

If the customer doesn't understand something or is confused here he can find a full explanation or can just contact the service in case.

Home

White wine   Red wine   Rose   Special offers   Information

Buy

Shopping cart

Log in

if not

email confirmation

Registration

CRUD matrix

In the CRUD matrix, we are showing the activities of the customer and the administrator in our system. The customer (with black color) can create account. So it is a new user with address. After the registration the customer can "log in"/"log out" and the system can read already created account.

The customer can search for products from different categories, and the system reads already exist products and categories. The user can add a product to the basket, in this moment the system reads the product from the order and from which category is. When it is done, the system creates order.

When the user goes to the basket, he can add or delete products, so the system updates the order.

The administrator (with green color) can also log in/ log out and the system read the administrator account. He can create many products from different categories, also can make changes or delete them. In this moment, the system creates, reads, updates or deletes products and categories.

When the order is made and administrator open it, the system reads the order, client, address, products and their categories.

The administrator can delete user and in this moment the system delete the client and the address.

CUSTOMER/ ADMINISTRATOR	Client	Address	Order	Product	Categories
Create user	C	C			
Log in	R R				
Search for product				R	R
Add product to basket			C	R	R
Finish/buy			U		
CRUD product				CRUD	CRUD
Read order	R	R	R	R	R
Delete user	D	D			
Log out	R R				

This project has been very interesting for all the members of the group, because we all learnt something new and tried to work together as much as possible.

The team was pretty involved and is pretty proud of the result as long as the database is functional and reaches the goals we expected to reach.

We have experienced some problems regarding the creation of the database and its validation, due to errors we didn't know about linked to small mistakes here and there in the code.