

User Requirements Specifications 2021



CB03 – Group 5

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1. Agreements with client

We have had two meetings with our client so far during which we discussed the functionalities that need to be included in the system. We agreed with the client that our priority in terms of functionalities are employee administration and stock administration included in the Windows form application. We agreed not to do the website application during the first stage of the project. The client wants us to include both automatic and manual scheduling functionality. We agreed to include statistics about employees and stock. We also agreed that the HR employees must be able to create, edit, view and delete employees. The client also wants us to include a login page as employees from different departments have access to different parts of the software. We will also include a stock management system in our software solution that will allow the users to add new products, edit and see current stock and products as well as delete a product completely.

During the second phase of the project, the website for the employees to view their schedules will be implemented. In the 3rd phase of the project, we will implement the option to view and update their personal information.

The information above is outdated at the point of writing this. At this moment we just started iteration 3. After our previous meeting with the client, we have gotten some new points of improvement and possible new implementations. This iteration will be about the UX, updating some old functionalities and adding 2 new ones. The new functionalities added in this iteration will be the option for employees to give a preference about the schedule and the option to view 2 different types of schedules on the employee website. One is the personal schedule of the logged in person, the other is the schedule of everyone.

The requirements and use cases have been updated according to the last meeting we had with the client. The version for iteration 3 will be finalized after the kick-off meeting with our client.

2. Functional requirements

General Application:

Must:

- FR-G-01: User can login to the app with specific login details.

Only for HR, managers and depot workers.

- FR-G-02: User can login to the website with specific login details.

Application Employee Management:

Must:

- FR-EM-01: HR and management can create new employees by giving their personal information.
- FR-EM-02: HR and management can search for an employee and read the related information.
- FR-EM-03: HR and management can update information of an employee.
- FR-EM-04: HR and management can set employees as inactive.
- FR-EM-05: Management can see statistics about employees.
- FR-EM-06: HR and management can see all past (inactive) employees.
- FR-EM-07: HR and management can accept/decline personal information change requests.

Won't:

- FR-EM-08: HR can track employees' attendance.

Application Schedules:

Must:

- FR-S-01: HR and management can assign, update or delete shifts for employees.
- FR-S-02: HR and management can assign and delete employees to/from shifts.
- FR-S-03: HR and management can view and set the minimum employees in a certain shift.
- FR-S-04: HR and management can see the number of hours an employee works during a week.

Application Stock management:

Must:

- FR-SM-01: Depot workers can add new products by giving an id, product name, quantity in store and warehouse, the location in store and warehouse, the cost price, selling price, minimum stock required and additional information.
- FR-SM-02: Depot workers can see current stock.
- FR-SM-03: Depot workers can change information about current stock.

- FR-SM-04: Depot workers can see when to order new stock.
- FR-SM-05: Depot workers can sell an amount of item.
- FR-SM-06: Depot workers can delete old stock.
- FR-SM-07: Management can see statistics about stock.
- FR-SM-08: Management and depot workers can view inactive stock.

Website:

Must:

- FR-W-01: Employees can see their personal information on the website.
- FR-W-02: Employees can make requests to change their personal information on the website.
- FR-W-03: Employees can view their schedule on a website.
- FR-W-04: Employee can view general schedule on the website.
- FR-W-05: Employees can give a preference about the schedule and request days off.

3. Use cases

Use case 01: Login to the application. (FR-G-01)

Actor: HR/manager or depot worker.

Main success scenario:

1. User opens the application.
2. Application asks for username and password.
3. User enters personal login credentials.
4. System checks credentials in database.
5. Login is confirmed by system.
6. User can access the application.

Extensions:

4a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to MSS step 2.

4b: Login credentials are incorrect.

1. Application notifies user that the credentials are incorrect.
2. Return to MSS step 2.

Use case 02: Login on the website. (FR-G-02)

Actor: Employees.

Main success scenario:

1. User opens the web application.
2. Application asks for username and password.
3. User enters personal login credentials.
4. System checks credentials in database.
5. Login is confirmed by system.
6. User can access the application.

Extensions:

4a: Login credentials are incorrect.

1. Application notifies user that the credentials are incorrect.
2. Return to MSS step 2.

Use case 03: Create a new employee. (FR-EM-01)

Actor: HR/manager.

Main success scenario:

1. User goes to “add employee” page.
2. System asks for personal information about employee.
3. User fills in personal information about employee.
4. System checks if employee does not exist in the database.
5. System confirms that new employee is created.

Extensions:

4a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 3. of MSS.

4b: Employee already exists.

1. Application notifies user that the employee already exists.
2. User indicates the notification was read.
3. Return to step 3. of MSS.

Use case 04: Search and read an employee's information. (FR-EM-02)

Actor: HR/manager.

Main success scenario:

1. User searches for an employee by searching his/her name.
2. System checks if employee exists in the database.
3. System shows the employees found.
4. User selects the employees he wants to read.
5. User goes to "edit employee" page.
6. User able to see employee's information.

Extensions:

2a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

2b: No employees found.

1. System notifies user that no employees have been found.
2. User indicates the notification was read.
3. Return to step 1. of MSS

6a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 5. of MSS.

Use case 05: Update employee information. (FR-EM-03)

Actor: HR/manager.

Main success scenario:

1. User performs use case 03. till step 5
2. System asks for new personal information about employee.
3. User updates information about employee
4. System updates in database and confirms.

Extensions:

4a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 3. of MSS.

Use case 06: Set employee as inactive. (FR-EM-04)

Actor: HR/manager.

Main success scenario:

1. User performs use case 03. till step 3.
2. User chooses employee to deactivate.
3. System asks for deactivation reason.
4. Users gives reason and confirms.
5. System sends changes to database.
6. System confirms the employee has been deactivated.

Extensions:

5a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 4.

Use case 07: See statistics about employees. (FR-EM-05)

Actor: Manager.

Main success scenario:

1. User goes to "statistics" page.
2. User selects the option to show employee statistics.
3. System shows statistics.
4. User analyzes statistics.

Extensions:

2a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

Use case 08: See all past (inactive) employees. (FR-EM-06)

Actor: Manager/HR.

Main success scenario:

1. User goes to "Employee" page.
2. System shows active employees.
3. User chooses inactive employees from a combo box.
5. System shows past employees.

Extensions:

2a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

Use case 09: HR and management can accept/decline personal information change requests. (FR-EM-07)

Actor: Manager/HR

Main success scenario:

1. User opens the page for the requests of personal information changes.
2. User accepts or declines the request.
3. The information update is communicated to the database.
4. Request is removed from the requests list.

Extensions:

1a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

Use case 10: Assign, update or delete shifts for employees. (FR-S-01)

Actor: HR/manager.

Main success scenario:

1. User goes to “schedules” page and selects ‘see schedule for an employee’.
2. System shows all employees in schedule table (see GUI 3. schedule page).
3. User selects specific day for specific employee.
4. System shows time slots.
5. User selects timeslot for employee on the selected day.
6. System will display timeslot on this day for the employee.
7. User saves changes by clicking the save button.

Extensions:

2a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1 of MSS.

5a: Time is already selected.

1. User selects new time to update the schedule.
2. Continue with step 6 of MSS.

5b: User wants to delete timeslot.

1. User selects “No time selected”.
2. System will display “-” for selected day.
3. Continue with 7 of MSS.

Use case 11: Assign and delete employees to/from shifts. (FR-S-02)

Actor: HR/manager.

Main success scenario:

1. User goes to “schedules” page and selects ‘create schedule’.
2. System shows each shift of a week with the scheduled employees.
3. User selects specific day and timeslot.
4. System shows new window for assigning and deleting employees.
5. User selects employees to add/remove and clicks corresponding button.
6. System will display updated information on the page.
7. User saves changes by going back to the schedule page.

Extensions:

2a: No connection to the database available.

4. Application notifies user there is no connection to the database.
5. User indicates the notification was read.
6. Return to step 1 of MSS.

Use case 12: HR and management can view and set the minimum employees per shift. (FR-S-03)

Actor: HR and management.

Main success scenario:

1. User goes to "Schedules" page.
2. User chooses the option to update the minimum number of employees needed.
3. System opens new page and shows a table containing all days and shifts.
4. User indicates the minimum amount of people per shift and saves.
5. System saves changes to database and confirms changes to user.
6. Changes will be shown on schedule page.

Extensions:

5a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
1. Return to step 4. of MSS.

Use case 13: See the number of hours an employee works during a week. (FR-S-04)

Actor: Manager/HR.

Main success scenario:

1. User goes to "Schedule" page.
2. System shows a schedule for a chosen week.
3. User can view how many hours are assigned to each employee that week.

Extensions:

2a: No schedules available

1. System shows empty page.
2. End of use case.

Use case 14: Add new products. (FR-SM-01)

Actor: Depot worker/manager.

Main success scenario:

1. User goes to “Add Stock” page.
2. System asks for information about product.
3. User fills in information about product.
4. System checks if product does not already exist in the database.
5. System confirms that new product is created.

Extensions:

4a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

4b: Product already exists.

1. Application notifies user that the product already exists.
2. User indicates the notification was read.
3. Return to step 3. of MSS.

Use case 15: See current stock information. (FR-SM-02)

Actor: Depot worker/manager.

Main success scenario:

1. User goes to “Stock” page
2. User searches for product by name or id.
3. System checks for matches in database.
4. System shows all products matching search.
5. User can select the right product.
6. User can see all current stock information by clicking the “edit” button.

Extensions:

3a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 2. of MSS.

3b: No matches found in database.

1. System notifies there are no matches.
2. User indicates the notification was read.
3. Return to step 2. of MSS.

Use case 16: Change current stock information. (FR-SM-03)

Actor: Depot worker/manager.

Main success scenario:

1. User performs Use case 09. to see all information
2. User can update the information about the current stock and proceed.
3. System will update information about current stock in database and confirms.

Extensions:

3a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

Use case 17: See when to order new stock. (FR-SM-04)

Actor: Depot worker/manager.

Main success scenario:

1. System notifies an item must be ordered.
2. User confirm to order new stock of the item.
3. System informs the database about the new order.
4. System confirms the stock order has been successful.

Extensions:

3a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

Use case 18: Sell an item (FR-SM-05)

Actor: Depot worker/manager.

Main success scenario:

1. User goes to “stock” page.
2. System shows all stock.
3. User selects a specific product.
4. User clicks “sell product” button.
5. System shows sell product page.
6. User input the amount of item to sell.
7. System informs the database about the new selling.
8. System confirms that selling has been successful.

Extensions:

2a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

7a: Amount of item higher than availability in stock.

1. Application notifies user there is not enough quantity.
2. User indicates the notification was read.
3. Return to step 6. of MSS.

Use case 19: Delete old stock. (FR-SM-06)

Actor: Depot workers.

Main success scenario:

1. User goes to “stock” page.
2. System shows all stock.
3. User searches a specific product.
4. System shows that product.
5. User deletes the product.

Extensions:

2a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

3a: Product not found.

1. System notifies user that product does not exist in the database.
2. User indicates the notification was read.
3. Return to step 3. of MSS

Use case 20: See statistics about stock. (FR-SM-07)

Actor: Manager.

Main success scenario:

1. User goes to “statistics” page.
2. User selects the option to show stock statistics.
3. System shows statistics about stock.
4. User analyzes statistics.

Extensions:

3a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

Use case 21: See inactive stock. (FR-SM-08)

Actor: Manager.

Main success scenario:

1. User goes to “stock” page.
2. User clicks “Show inactive stock”.
3. System shows inactive stock.
4. User can perform use case 11 if needed.

Extensions:

3a: No connection to the database available.

1. Application notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to step 1. of MSS.

Use case 22: Employees can see their personal information on the website. (FR-W-01)

Actor: Employee.

Main success scenario:

1. User performs use case 2. to login on the website
2. System shows menu options.
3. User chooses option to see their personal information.
4. System displays their personal information.

Extensions:

4a: No connection to the database available.

1. System notifies user there is no connection to the database.
2. User indicates the notification was read.
3. Return to MSS step 2.

Use case 23: Employees can make request to change their personal information on the website. (FR-W-02)

Actor: Employee.

Main success scenario:

1. User performs use case 9 to see their personal information.
2. User chooses option to update their personal information.
3. System asks for information to be changed.
4. User fills in information and confirms.
5. System stores updates to be confirmed.
6. Systems tells actor action was successful.

Extensions:

5a: No connection to the database available.

4. System notifies user there is no connection to the database.
5. User indicates the notification was read.
6. Return to MSS step 3.

Use case 24: Employees can view their schedules on a website. (FR-W-03)

Actor: Employee.

Main success scenario:

1. User performs Use case 2.
2. System shows schedule for chosen week.

Extensions:

2a: No schedules available

2. System shows empty page.
3. End of use case.

Use case 25: Employee can view general schedule on the website. (FR-W-04)

Actor: Employee.

Main success scenario:

1. User performs Use case 2.
2. System shows general schedule for chosen week.

Extensions:

2a: No schedules available

3. System shows empty page.
4. End of use case.

Use case 26: Employees can give a preference about the schedule and request days off. (FR-W-05)

Actor: Employee.

Main success scenario:

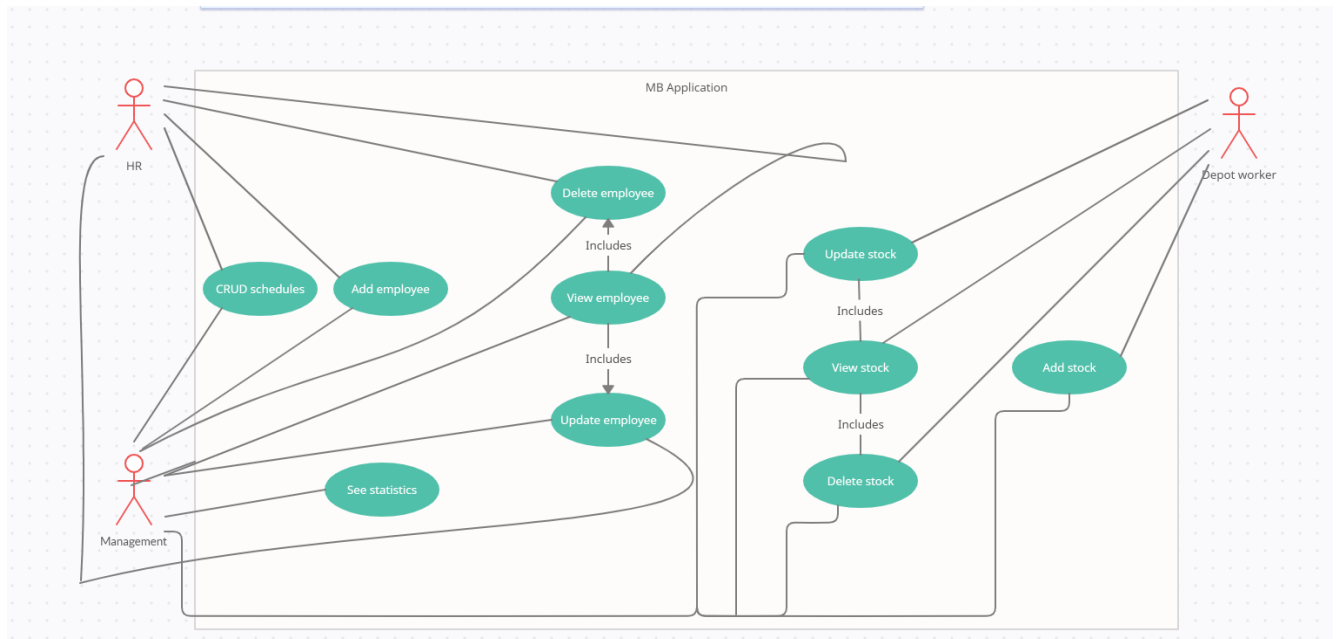
3. User signs into the website.
4. System shows main page.
5. User goes to Personal schedule.
6. System shows personal schedule.
7. User enters preferences about shifts.
8. System saves their preferences.
9. User requests days off.
10. System saves their requested days off.

Extensions:

2a: No schedules available

5. System shows empty page.
6. End of use case.

4. Use case diagram



5. GUI (Wireframes/sketches)

1. Login page

When the application is first started or when the user logs out the login page opens. The user is required to enter their existing login credentials that are stored in the database and click the login button. When the credentials are correct, the user is logged into the application and page 2. Employees is opened. When the credentials are incorrect the user is asked to enter their credentials again.

The login page wireframe features the MB MEDIA BAZAAR logo at the top. Below the logo are three input fields: Username, Password, and a Login button.

2. Employees' page

When the user successfully logs in the Employees' management page opens where all the employees are displayed. The user can search for specific employee and view information about them, edit their information or remove them. The user can also add a new employee or edit an existing employee. Page 3. Add/Edit employee opens when adding and editing an employee.



First name	Second name	Username	Email address	Date of birth	Join date	Phone number	Position
Employee1	Red	RedE1	red@mb.com	01/01/1998	25/04/2020	0613123456	Stock taker
Employee2	Orange	OrangeE2	orange@mb.com	02/01/1998	25/05/2020	0613234567	Cashier
Employee3	Yellow	YellowE3	yellow@mb.com	03/01/1998	25/06/2020	0613345678	Delivery
Employee4	Green	GreenE4	green@mb.com	04/01/1998	25/07/2020	0613456789	Stock taker
Employee5	Blue	BlueE5	blue@mb.com	05/01/1998	25/08/2020	0613567890	Cleaner
Employee6	Indigo	IndigoE6	indigo@mb.com	06/01/1998	25/09/2020	0613678901	Delivery
Employee7	Violet	VioletE7	violet@mb.com	07/01/1998	25/10/2020	0613789012	Cleaner

Add employee

Edit selected

Delete selected

3. Add/edit employee page

When the “Add employee” button is clicked on the Employee page the user is redirected to the page below where the user can enter the information about the new employee. All textboxes must be filled except for “additional information” textbox. When all the information is filled in the user can click the “add employee” button and the changes will be stored in the database. The same screen is used for editing an employee. The “add employee” button will change to a “confirm changes” button and the textboxes will already be filled in (see second picture).

First name	<input type="text" value="John"/>	Phone number	<input type="text" value="0612345678"/>
Second name	<input type="text" value="Doe"/>	ICE number	<input type="text" value="0623456789"/>
BSN	<input type="text" value="123456789"/>	ICE relationship	<input type="text" value="Mother"/>
Date of birth	<input type="text" value="DD"/> <input type="text" value="MM"/> <input type="text" value="YYYY"/>	Position	<input type="text" value="Cashier"/>
Additional Information	<input type="text"/>		

Cancel

+ Add employee

First name	<input type="text" value="John"/>	Phone number	<input type="text" value="0612345678"/>
Second name	<input type="text" value="Doe"/>	ICE number	<input type="text" value="0623456789"/>
BSN	<input type="text" value="123456789"/>	ICE relationship	<input type="text" value="Mother"/>
Date of birth	<input type="text" value="01"/> <input type="text" value="01"/> <input type="text" value="1999"/>	Position	<input type="text" value="Cashier"/>
Additional Information	<input type="text"/>		

Cancel

✔ Confirm changes

4. Delete employee

When the user selects an employee to delete and presses the “delete employee” button the system will show this screen. In here the user can select the reason for deleting the employee and can confirm it.

Are you sure you want to remove Employee?

Reason for removal

Type something here...

Cancel

Remove

5. Schedules page

When “Schedules” button is clicked, the user is redirected to the schedules page. They can choose between viewing the schedule for a specific employee (first picture) or creating a new schedule (second picture). The user can assign a time slot for a specific day to a specific employee or can edit and delete their shift in the first one. The second window is used to assign employees to shifts.

[Employees](#)[Schedules](#)[Stock](#)[Statistics](#)

Mon, 1 March - Sun, 7 March 2021

First name	Second name	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Employee1	Red	08:00-12:00	12:00-16:00	16:00-20:00	—	12:00-16:00	12:00-16:00
Employee2	Orange	—	16:00-20:00	08:00-12:00	12:00-16:00	08:00-12:00	—
Employee3	Yellow	12:00-16:00	08:00-12:00	—	16:00-20:00	12:00-16:00	16:00-20:00
Employee4	Green	08:00-12:00	08:00-12:00	16:00-20:00	12:00-16:00	—	08:00-12:00
Employee5	Blue	16:00-20:00	—	12:00-16:00	16:00-20:00	08:00-12:00	12:00-16:00
Employee6	Indigo	12:00-16:00	12:00-16:00	08:00-12:00	—	12:00-16:00	16:00-20:00
Employee7	Violet	12:00-16:00	16:00-20:00	12:00-16:00	08:00-12:00	16:00-20:00	—

Save as new preset

Import preset

Preset 1 ▾

[Employees](#)[Schedules](#)[Statistics](#)

Saturday, 20 March 2021

	08:00 - 12:00	12:00 - 16:00	16:00 - 20:00
Monday	E1 E2 E3 E4	E3 E4 E5 E6	E6 E7 E8
Tuesday	E4 E5 E6 E7	E2 E3 E4 E5	E1 E2 E3
Wednesday	E1 E2 E3 E4	E2 E3 E4 E5	E5 E6 E7
Thursday	E4 E5 E6 E7	E2 E3 E4 E5	E1 E2 E3
Friday	E1 E2 E3 E4	E3 E4 E5 E6	E5 E6 E7
Saturday	E4 E5 E6 E7	E2 E3 E4 E5	E1 E2 E3
Sunday	E1 E2 E3 E4	E3 E4 E5 E6	E6 E7 E8

Sick or Vacation

Remove selected

Edit selected



6. Stock management

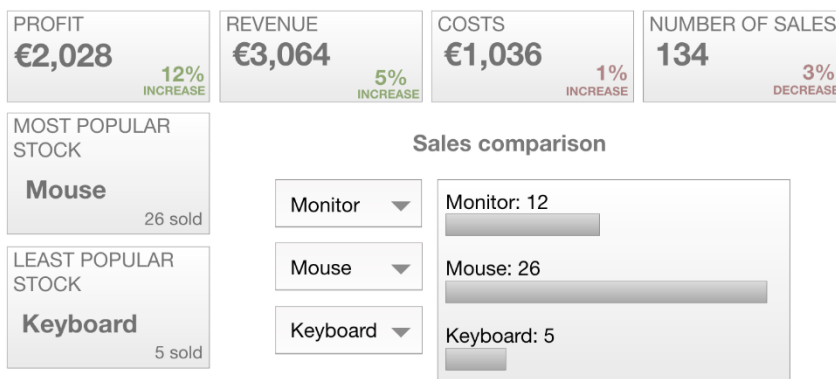
When “stock” button is clicked, the user is redirected to the stock page where all the products and details about them are listed. The user can add stock, edit products or delete products. When adding a new product the user is required to fill in all the information about the product.

Stock ID	Stock name	Quantity(S)	Quantity(WH)	Location	WHLocation	Cost price	Selling price	Number of times sold
1	Monitor	9	30	Store+WH	A-C3	€40	€60	12
2	Mouse	15	55	Store+WH	A-K8	€5	€8	26
3	Keyboard	8	0	Store	B-G1	€15	€23	5
4	Trackpad	11	100	Store+WH	A-F2	€2	€3	13
5	Microphone	6	20	Store+WH	B-D4	€10	€15	8
6	Headphones	8	0	Store	B-H9	€12	€18	32
7	Speakers	0	20	Warehouse	A-E5	€18	€27	10

+ Add stock
 Edit selected
 Delete selected
Search

7. Statistics

When the “statistics” button is clicked, the user is redirected to the statistics page where the user can analyze the sales.



8. Website login

When the user opens the website, they will be presented the following login page.



Employee Login

9. Website schedules

After logging in the website redirects the user to the schedule of the current week. In here they can see the schedule for the current week or change the view to display another week.


Test Account (TesAco1)

Week 1 < >

1 March 2020 - 7 March 2020

	MON	TUE	WED	THU	FRI	SAT	SUN
Luca P	AM		PM	AM	MID	MID	
Alessandro B		AM		PM	AM	MID	MID
Maarten H			AM		PM	AM	MID
Nikola K	AM		MID	AM		PM	AM
Test A	MID	AM		MID	AM		PM

AM → Morning (08:00-12:00)
MID → Afternoon (11:30-15:30)
PM → Evening (15:00-19:00)

6. Version history

Date	Author of modification	Modified content
20/04/211	Maarten	Modification of functional requirements: FR-EM-04, FR-EM-06, FR-EM-07, FR-EM-08
20/05/21	All	Gone over all requirements to update for iteration 3.