Quarantivity Requirements Specification

Version 1.0

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1. Executive Summary

1.1   Project Overview

Companies are always trying to make their work easier and more efficient. Considering that distribution companies can face some difficulties in dealing with their job in their working daily life, an online distribution management system would be a solution. What the distribution management system would do is that it would give the business a more clear sight when it comes to inventories, monitoring of the operation in the field, financial issues, sales and management.

What we will do to reduce these kind of difficulties, is that through our online system we provide an easier way to deal with tasks, to keep track of every move through GPS system so we can see the route's an employee takes to deliver goods because this way would also help us to find which route is faster and consumes less fuel, to automate and optimize the day-to-day transactions. We also found convenient to use a batch tracking that would allow us to group and monitor a set of stock that share similar properties, quickly track and trace all the products with ease and also to keep an eye on expiry dates at a quick glance in order to act quickly. The use of ABC analysis gives us a view of the most important to least important items.

Our system will consist of an admin page who will be the one responsible for dealing with the agents. He will have a full view of everything happening in the system. He will have a more precise view of the inventory; will deal with assigning the tasks, check reports and all the performances of the everyday operations, update the system to make it more efficient and to manage its structure.
As for the employees we will have another one, which will show every step of their operation, from the minute they take the order until the deliver it to the right address.

1.2   Purpose and Scope that of this Specification

The Online Distribution management system has the purpose to track workforce performance and automate workforce scheduling in order to have more accurate results and to help the business in their operations and management.

Through this system will be easier to find out if the products have arrived in their destination in the right time or if there are any delays in reaching the product destination. It will improve the reliability levels; have more efficient results and managing the distribution of the products in a safer way.

2. Product/Service Description

Our Online Distribution Management System is for a company known as Egema Shpk, a distribution company which delivers mostly products like snacks in stores and supermarkets. As they face different problems in their operations as most of the businesses do, our online system would make their work easier and more accurate. We are offering a system that gives more visibility to the business.
So keeping in track of the employee's route, using a batch tracking system for the products to have a view at the expiry dates, having a real time inventory would help and reduce the business' work, giving them better results in their performance. Our service would make their distribution more efficient so that they manage their business operation in a better way.

2.1   Product Context

The system will be an independent one which will be accessible from the, admin, employees. Admin will have the main access in the system. It will also include information about employees, sales, inventories and financial issues.

2.2   User Characteristics

The system will have admin, user and sales profile:

- The admin interface will manage everything its structure and contents, update the system when needed to increase its efficiency and install the latest extensions.
- The user interface or staff interface we will keep everything simple and create consistency, we will also use common UI elements.
- As for the sales agent we will have another interface which will show the moment the take the order until it delivered to the address. Also, to find as many new clients as possible and fill out the report for better tracking performance of our deliveries.
- We will have a inventory supervisor who will notify when we need to make new orders and also see all the shipping costs, holding costs etc. He can also add and delete new products.

- The delivery employee which will be responsible for delivering products to the corresponding address.

2.3 *Assumptions*

- We assume that our system will be compatible with most of the operating systems because some are faster at handling apps for example Mac OS.
- We assume that the delivery employee will find the fastest route and deliver the products on time and not face any problems.
- We assume that all of our employees will be able to use the application we provide them.\
- We assume that our software will have the proper billing and receipt format for our delivery employees.

2.4 *Constraints*

We think our system will face constraints like:

- By internet connection as it might get disconnected.
- All of the employees must be equipped with smartphones.
- It might not be compatible with older versions of OS and smartphones
- The need for fast internet connection.
- The client can access the application by a pre-registered account by a manager.

2.5 *Dependencies*

- Because our application will be web-based one it will require a fast internet connection preferably 10mpbs or higher.

- The client needs to be identified by their NIPT to see if they exist in the market or not based on QKB.
- All devices should be compatible with the application.
- The accounts for the employees will be provided by the administrator.

3. Requirements

3.1   Functional Requirements

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_01	The system is implemented as web application. It will be accessed by the administrator or owner, agents, economist and manager.	Each login will have a different view and not the same access to different options of business operations. Only administrator will have full access.	2	4/21/20	
BR_02	A database should be connected with the interface in order to hold and access all the data.	The data should be easy to edit and maintain.	1	4/21/20	
BR_03	Each of the users will have unique ID and their own passwords.	Each ID will be given by the owner who will have full access to their accounts.	1	4/21/20	

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_04	Administrator will have full access to the program, with options like online tracking the agents going to their destination, graphs to express orders monthly, bills, cash flows etc.	This option and other options will be managed by administrator.	1	4/21/20	
BR_05	The Administrator will have the option to register new agents and to add them to the system.	This help the owner know their employees better with their personal info added by themselves.	2	4/21/20	
BR_06	Administrator will have access to the warehouse option which has all the accounting operations managed also by the economist.	Through warehouse they can check the amount of the product, price of the product, amount sold and the reorder option.	~~1~~	4/21/20	
BR_07	Administrator will have access to the itinerary planning for sales agents.	They track their itinerary online and plan new itineraries for new days	~~3~~	4/21/20	
BR_08	Administrator will have access on clients by looking at their personal info, order, due to date etc.	They will also be an option of adding new clients	~~1~~	4/21/20	

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_09	The web application will have the option to reset the password by email confirmation.	This option is for every user of the application	~~1~~	4/21/20	
BR_10	The administrator can manage the whole information on the application by updating and changing every information needed easily.	Only the admin account has this option.	~~2~~	4/21/20	
BR_11	The administrator will be able to add new products that he is willing to buy.	Also check their price, order the amount and have the reorder option.	~~1~~	4/21/20	
BR_12	The administrator can delete the products no longer available.	He can delete the products he no longer want to buy.	~~1~~	4/21/20	
BR_13	The administrator should be able to delete employees.	The administrator will be the only user to possess this right.	~~3~~	4/21/20	
BR_14	The administrator can check the task history of sales agents.	This makes it easier for admin to keep track of the sales and to know which sales agent is working harder and deserves a bonus.	~~2~~	4/21/20	

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_15	The administrator will be able to check the stock status in the warehouse.	This option will be showed on the administrator page	~~1~~	4/21/20	
BR_16	They will also have the reports option which shows the business activity and its performance through months. Orders and sales orders, bills, machineries and visits will be some other options where he can check anytime.	The data will be saved and updated monthly.	~~1~~	4/21/20	
BR_17	Agents will have the option to fill in some information about themselves and a profile picture.	Sales agent accounts will have limited access.	~~3~~	4/21/20	
BR_18	Agent can make orders.	Products will display before making the order	~~2~~	4/21/20	
BR_19	Agent can check their tasks and next itineraries in order to accomplish them.	Tasks and new itineraries will be displayed in the home page of their accounts.	~~1~~	4/21/20	
BR_20	Agent has to mark the task if it is completed.	No comment	~~2~~	4/21/20	

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_21	Agent uploads bills online in real time.	After making the purchase and delivery or vice versa he uploads the bill in the moment.	1	4/21/20	
BR_22	Agent can upload profile photos.	The option is easily done.	3	4/21/20	
BR_23	Agents will have access to the map and its marked locations by administrators to accomplish their job.	The itinerary will automatically show in the map	2	4/21/20	
BR_24	To protect the system from spam and abuse, re-captcha will be used.	To prove that you are human you must fill the captcha.	3	4/21/20	
BR_25	Inventory will show the current stock anytime.	It will be updated daily.	1	4/21/20	
BR_26	The manager will also be able to manage the transportation of goods where they are stored to the destination online.	They will have the same right as the administrator for itinerary tracking.	2	4/21/20	
BR_27	Manager will be responsible and have access to inventory.	Their job is checking the raw materials and machineries so through this option it will be easier for them.	1	4/21/20	

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_28	Managers must have access to bills, inventory and warehouse so they can keep track of shipments.	No comment.	~~2~~	4/21/20	
BR_29	The manager will create weekly schedules.	These weekly schedules are tasks for agents.	~~1~~	4/21/20	
BR_30	Manager will be responsible for making orders.	Manager will have to mark the order.	~~1~~	4/21/20	
BR_31	Alert!	Ensure all tasks are completed on time by automating alert to remind the manager of the deadline	~~1~~	4/21/20	
BR_32	Manager keeps on track of the labor hours of agents.	Calculates the payroll depending on labor hours	~~1~~	4/21/20	
BR_33	Economist will keep track of money moving in and out.	The revenue and expenses will be automatically calculated.	~~1~~	4/21/20	
BR_34	Economist will take care of the payroll part.	He will take care of the amount of payroll that will be added to the business expenses.	~~1~~	4/21/20	

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_35	Economist will have access to financial reports.	He will see the business reports that will show the business performance, in that way he can make his conclusions of how the business is going.	1	4/21/20	
BR_36	Economist will have his own ID and password.	He can reset his password any time.	1	4/21/20	
BR_37	Economist will upload his own picture and fill his own personal information.	He will do this when he firsts log in in the application.	1	4/21/20	
BR_38	Economist will access warehouse.	He will have access and oversee the sales, purchases and bills.	1	4/21/20	
BR_39	Economist will take care of the legal financial part.	He will take care of the taxes and other governmental liabilities.	1	4/21/20	
BR_40	Economist will edit the employee's payroll records.	He will be able to edit the payments done.	1	4/21/20	
BR_41	The system will be connected with google maps.	To keep track of the itinerary of employees on real time and on the field.	1	4/21/20	

3.2 Non-functional Requirements

3.2.1 Product Requirements

3.2.1.1 User Interface Requirements

- Clear interface helps prevent user errors, makes important information obvious.

- Simple layout to maximize functionality and maintain simplicity.

- User-Controlled interface so the user initiates and controls all actions.

- Real time notifications to provide feedback.

- Easy to use and user-friendly structure.

3.2.1.2 Usability

- Our application will have an intuitive design, a nearly easy understanding of the architecture and navigation.

- When the application is updated it will have all the latest functionalities.

- Information in our application should be navigable and locatable.

3.2.1.2.1 Accessibility and availability

Our system will be designed to support multiple users at the same. To make the application work properly, it will require a strong internet connection and it will be available any time of the day. Our application is going to be a web-based there is no need for memory occupation in smartphones. Multiple users will use the application at any time, being said that the database will not be very complex but we will make sure that it is capable enough to store everything that is needed. Also it will be designed in Albanian language. Different type of users will have different availability.

3.2.1.2.2 Flexibility

We will design our system in a way that it will be very easy and organized to be managed and understood by others who are going to use it. It will also have an error detection process, in order to handle any error quickly. In this way it will be easier for the employees to use it without any problem and difficulties.

3.2.1.3 Efficiency Requirements

The system's purpose is to be efficient and make the daily tasks of the employees easier. Every one logging into our system will have their own account and access their own personal information. Also the economist job will be easier because he will have the reports in shorter time. And in a shorter time, manager will be able to see how the business is going.

3.2.1.3.1 Performance and Space Requirement

As it is said earlier our system will depend on how good the internet connection is. Since it is a web-based application it will require the minimum of the requirements for the computer in order to run it properly and in a faster way.

Processor (CPU): Intel Core i3 (sixth generation or newer)

Memory: at least 4 GB

Simultaneous users: 50.

3.2.1.3.2 Latency

Latency is to be expected if users don't have a strong and fast internet connection, thus causing the loading time of the application late. TTFB refers to the time browsers need to wait before getting data from the server. Our web-application will have a fast TTFB so the requests can be delivered to the browser faster. We should be aiming for TTFB that's less than 200ms.

3.2.1.4 Dependability Requirements

3.2.1.4.1 Manageability/Maintainability

3.2.1.4.1.1 Monitoring

The user's interface as we said above is going to be simple and easy to be used. It will need two inputs, a username and a password which will redirect the user by its type to the corresponding page. In case that these inputs are not found in the database an error message will be displayed. Every user's page will include the functionalities mentioned before. The admin will have privilege access among all other users that are followed by the management and so on followed by the employees depending on their duties.

3.2.1.4.1.2 Maintenance

PhpMyAdmin will provide an ease for maintaining the database. The application will consist on simple and well-organized modules in order to create a simple and easy user-experience to our users. If there are going to be any errors simply refresh the page and you are good to go.

A user will be responsible for these operations:

- Log-in
- Create/Remove users (admin, manager)
- Check and create reports
- Assign tasks and schedules (manager)
- Make orders (orders)
- Complete orders (delivery employee)
- Check real-time in inventory

The economist will be responsible for:

- Access to financial reports.
- Access the warehouse.
- Take care of the legal financial part.
- Edit the employee's payroll records.

3.2.1.5 Security

3.2.1.5.1 Protection

To make sure that the data in our system is safe from malicious or accidental access, destruction, modification, disclosure or misuse, the system will require:

- Each user to enter their email address and password.
- Before logging in, the system will have a captcha test to make it more secured.
- A phone number or email back up will be required.
- Every activity made by the user will be tracked.
- Encryption of important information, like password using hashing methods.

3.2.1.5.2 Authorization and Authentication

- Every user of the system will have access only to their information.
- Every one of them will put their email address and password to have access to their account.
- We will use cookies to provide authentication.
- Admin will have access on the information of every user, meanwhile manager only to employees.

3.2.1.6 System Interface/Integration

The system is going to operate as long as it has a database in PhpMyAdmin platform. Once the application is finished building it is its duty to avoid any possible error occurrence. The admin and also the manager who have the most system access can go to the database and make changes if needed.

3.2.1.6.1 Network and Hardware Interfaces

As we said before our application is going to be a web-based one meaning that it will be stored in an HTTP server. A TCP connection will be created between the user and the server using HTTP protocol. The screen size will be dynamic this way it will be accessible by any device that has an internet connection.

3.2.1.6.2 Systems Interfaces

There will be 4 main view interfaces:

1) Admin view

2) Manager view

3) Employee view (Sales Agent, Delivery Employee)

4) Client view

5) Economist view

The administrator, manager, employees, and client will be to authenticate with the methods username and password. The Administrator will have privileged access having more access and usability in the system. While the employee additional fields like name surname, username and a passport ID. The economist will have access to financial report, in order to show the business performance so he can conclude how the business is going.

The required field for the client will be:

- NIPT Number

- Address

- Category

- Area

- Password

3.2.1.6.3 Portability

Our system will be developed using PHP programming language. Using PHP we will have many portability opportunities. It will be built in such a way that it will be suitable for different types of devices such as: mobile phones, pc etc.

Internet connection should be provided, otherwise the system won't work.

3.2.1.7 Data Management

- Specific data will be accessed by users depending on the task they have.

- Validation of some information should be provided.

- We will use MySQL for the tables.

  Databases included in this system are:

  a. Users (id, username, name, password, email address, phone number)

  b. Client (id,clientName, orders, date, preferences, location)

  c. Agents (agentName, total order, assigned clients, total bill)

  d. Itinerary (date, agentName)

  e. Order (id, clientName, date, quantity, description, price)

f. Bill (id, orderId, clientId, date, quantity, totalPrice)

g. Product (id, name, price, quantity, description, availability)

h. Economist(name, username, password, email, phone number, photo)

i. Supplier(id, name, email, phone number, supProducts)

3.2.2 Organizational Requirements

3.2.2.1 Environmental Requirements

Our system will be web based, and it will be stored in a server. The server needs to be maintained so it can work in a proper way and also by updating it time after time and fixing any possible bug the system may have. We will also make sure that our system is safe from outside attacks, malwares, injections and will security it with antivirus.

3.2.2.2 Operational Requirements

3.2.2.2.1 Operations

Specify any normal and special operations required by the user, including:

● Periods of interactive operations:

Our web application will be available 24/7

● Backup and recovery operations:

There will be a backup server ins case our server isn't working for any circumstances

● Safety considerations and requirements:

Each user has its own address with an unique ID and password and only he can log in to its page. For security reasons, we will apply the 2 Golden Rules (filter external input and escape output). We will also use a good encryption key so every data is encrypted and safe.

● Disaster recovery and business resumption:

We are using PhpMyAdmin for the database and Apache for the server. Everything will be saved in case of any fatal crashes of the system.

3.2.2.2.2 Threat

3.2.2.2.2.1 Security Threats

● Injection:

Injection attacks are a common threat to be on the lookout for. These types of attacks come in a variety of different injection types and are primed to attack the data in web applications since web applications require data to function. The more data is required, the more opportunities for injection attacks to target.

To combat this, business owners are advised to implement input validation techniques and robust coding.

● Malware:

The presence of malware is another common threat. Upon downloading malware, severe repercussions like activity monitoring, access to confidential information, and backdoor access to large scale data breaches can be incurred. To combat this problem, we will make sure to install and keep firewalls up to date.

● Brute Force:

Then there's also brute force attacks, where hackers attempt to guess passwords and forcefully gain access to the web application owner's details. We can deter this form of attack by limiting the number of logins one can undertake.

3.2.2.2.2.2 Emerging Technologies

The developers should be aware of the emerging technologies and try to improve the system time by time. Every new technology that improves the efficiency of our software we will implement. For example there is a tool called CSS-Tidy which is an open source application that parses, fixes, and optimizes CSS code to reduce file size and also to standardize CSS code formatting automatically. It also finds and removes redundant styles and properties.

3.2.2.3 Development Requirements
3.2.2.3.1 Client-Side Programming (Front-end)
- Hypertext Markup Language HTML
- Cascading Style Sheet CSS
- JavaScript JS
- Bootstrap

3.2.2.3.2 Server-Side Programming (Back End)
- Programming language PHP
- Database MySQL

- Server Apache

3.2.3 External Requirements

3.2.3.1 Regulatory and Legislative Requirements

3.2.3.1.1 Privacy policy

Our system will be web based, so for sure it is going to have a privacy policy, where will be explained what kind of information we gather from employees, how we use this kind of information and how we keep it safe.

3.2.3.1.2 Accounting Requirements

Based on the Law No. 25/2018 "PËR KONTABILITETIN DHE PASQYRAT FINANCIARE " , it defines the general principles and rules for the design and components of financial statements, setting applicable accounting standards, and maintaining accounting.

For the bill format we will act in accordance with Law No. 92/2014 "PËR TATIMIN MBI VLERËN E SHTUAR" on value added tax (VAT). It is a general consumption tax on goods that must be represented and has a value of 20%.

3.2.3.2 Ethical Requirements

3.2.3.2.1 Software

Our systems will be developed in a way that provides truthfulness and confidentiality to our client and employees. It should act on the basis of a well-informed conscience; act appropriately and in a professional manner.

3.2.3.2.2 Developers

The developers should work in a way that they respect the privacy of confidential information. They should be honest when stating the basic characteristics of the system. They should also give proper credit to the client's property and always act based on their knowledge.

3.3 Domain Requirements

Our system will make possible to track and trace every move of the distribution process and make the work easier for the business. The business will be more organized and will have a more accurate report of the daily actions. Tasks will be made in this system: employee's tracking, checking for the products, information regarding the client, management of the employees, inventory. With the help of the database information will be stored.

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4. Software design

4.1   User Scenarios/ Use Cases

1. Admin checks everything online.
    - Admin clicks on the menu in the right side.
    - Clicks the ''Dashboard'' from there and there he can see everything possible from bills, cash flows, graphs that express orders monthly, agents, visits etc.

2. Admin registers new agents.
    - Admin logs in.
    - Admin can click on the menu and then ''Agents''.
    - There a page with all the current agents will be displayed.
    - There will be a button that reads ''Register new agent'' and after he clicks it he fills in the information form.
    - After the new agent is created he is stored in the database with an encrypted password.

3. Admin updates agents.
    - Admin clicks on the ''Agents'' option.
    - After the page displayed will be a table with all the agent's names.
    - In the end of each row of agent's names there will be an update button and a delete button.
    - By clicking the update button the admin will be able to update any information that he is willing to.

4. Admin can read agent's personal information.
    - Admin logs in.
    - After clicking on the menu and then on ''Agents'', the table with agent's names will show up.
    - Clicking on one of their names will show their personal information to the admin.

5. Admin deletes agents.

- Admin logs in.
- Clicks on the menu button and then ''Agents''.
- After showing up the tables with the names, in the end of each row will be the delete option where the admin can delete the agents who no longer work there anymore.

6. Admin will plan the next itineraries for agents.

- Admin logs in.
- Clicks on the menu and then ''Itinerary planning''.
- After clicking on the itinerary planning option he can fill in the name of the agent that has to do the next task, marks the destination on the map, the day and the category of products.
- Admin clicks on the ''Add new itinerary'' option and a new task is added to the tasks table.

7. Admin will be able to check the itinerary history of agents.

- Admin logs in.
- He clicks on the ''Agents'' on the menu.
- After he clicks on the agents' option a table with the names of the agents will show.
- Clicking on one of their names will open a page with the personal information for that agent, and an option ''Agent's History''.
- Agent's history option will show the itinerary history of them.

8. Admin will be able to add new products.

- Admin logs in.
- Admin clicks on the menu and then ''Warehouse''.
- After clicking warehouse the page that will be displayed will have many functions and options and one of them will be ''Add new product''.
- Admin clicks on the Add new product option and starts filling up a little information about that product like name, category etc.

9. Admin will be able to delete products.

- Admin clicks on the menu and then ''Warehouse''.

- After he goes to ''Products'' and clicks on the right at the end of the product row to the ''Delete'' option.

10. Admin will check agent's performance.

- After logging in and clicking ''Agents''.
- Another option will be ''Performance'' where he will be able to see their monthly orders done, kilometres done etc.

11. Admin can check stock.

- Admin logs in.
- After going to the menu and clicking ''Warehouse'' option, he may see the stock of his products from there.
- The option ''Stock'' will show all the products which are stock, name, type, category, price, quantity etc.

12. Admin can check bills.

- Admin logs in.
- ''Bills'' option will be in the warehouse page.
- After clicking bills, a page with bill history will display, dates and detailed information for bills.

13. Admin checks outgoing orders.

- Admin is logged in successfully in the system.
- Checks outgoing orders of the day and their locations .

14. Admin checks incoming orders.

- Admin logs in the system successfully.
- Checks incoming orders of the day.

15. Admin creates manager.

- Admin logs in.
- Admin clicks on the menu and then ''Manager''.

- A list of current managers will be shown and a button in the corner of that page reading ''Register new manager'' will do it.
- The information for the new manager is updated with an encrypted password.

16. Admin updates manager.

- Admin logs in.
- Admin clicks on the manager option and after the page displayed will be a table with all the manager's names.
- In the end of each row of manager's names there will be an update button and a delete button.
- By clicking the update button the admin will be able to update any information that he is willing to.

17. Admin can read manager's personal information.

- After clicking on any name a page will be displayed with their personal info, history and performance.

18. Admin will be able to delete manager.

- The deleting option will be next to the updating button.

19. Admin will do the same with the economist and clients.
20. User updates its account:

- User is logged in the system
- Pressing "My account" button shows user details
- Updates details
- By pressing "update" it also updates information in the database

21. User successful login:

- Enter email and password
- Press "Sign in" button
- If the information matches to the database the user is redirected to the homepage

22. User failed login:

- Enter email and password

- Press "Sign in" button

- If the information is not matched in the database it will display an error message

23. Manager creates scheduled task for employee:

- Presses the "schedule" button from the navigation bar

- Task assignment form is shown and also the assigned task of the day is displayed

- Fills the information in the form: Area, the name of the employee, category, day of the week

- The newly added task is stored in the database

24. Manager checks Inventory:

- Manager is logged in

- Manager presses "Inventory"

- It displays Product details (Name, description, category, price, image quantity)

25. Manager checks bill:

- Manager is logged in

- Manager presses "Bills"

- A table is shown with Bill History witch each bill detail

26. Manager makes orders:

- Manager is logged in

- Manager presses "Orders"

- A table is shown with all the current orders

- Manager inputs details for a new order and then press "add order"

- The newly added order is stored in the database

27. Manager keeps track of the labor hours of agents:

- Manager presses "labor hours"

- A table is displayed containing all agents and their labor hours

- Manager can press "Calculate Payroll" and it displays the payroll depending on the labor hours

28. Manager checks assigned task history for each employee:

- Manager presses the "Task History" in the navigation bar

- A table is shown with all of the employee's names and their task history

- The table shows all of the previous tasks assigned to that employee

29. Manager manages the transportation of goods:

- Manager has the same right as the admin for tracking

- Manager receives a delivery confirmation

- Manager than uses a checkbox to confirm the delivery

30. Manager updates the stock daily:

- Manager is logged in

- Manager presses "Inventory"

- With all the products being displayed manager can press "Update Stock"

- Inputs the new information of the newly added products

- The newly added product is added in the database

31. Manager must complete all tasks:

- Manager has a deadline to complete the tasks

- He must ensure all tasks are completed in time

- An "Alert!" message will appear to remind the manager of the task before the deadline

32. Economist updates its account

- Economist is logged in the system.

- He will have access to his personal information, using his own ID and password.

- He can change his personal information by clicking in My Account button.

- He also reset his password.

- Updates his own data by clicking in the Update button.

33. Economist manages Inventory

- Economist is logged in the system.

- Clicks in the Warehouse button and then presses the "Inventory" button.

- Inventory includes "Flete Dalje" and "Flete Dalje".

- Clicking in "Flete Dalje" and "Flete Dalje" a table with Product name, Amount, Price and value is shown to provide him with necessary information on the movements of the products, purchases and bills.

34. Economist checks Arka

- Economist is logged in the system.

- Arka contains "Purchases" and "Sales".

- Clicking "Purchases" button shows all the purchases that have been made with their respective bills.

- Clicking "Sales" button shows all the sales that have been made along with their bill details.

35. Economist checks Banka

- Economist is logged in the system.

- When clicking into the "Banka" button, a "Report" button will be shown.

- When selecting the "Report" button, economist will be assured to have a look at the current state of the money available.

36. Economist checks Transfers

- Economist is logged in the system.

- Clicks "Transfers" button.

- A table will be displayed with the income statement which will show the revenues and expenses, to keep track of the money moving in and out.

37. Economist checks Reports

- Economist is logged in the system.

- Pressed "Reports" button.

- A table with Orders, Bill, Machineries, Visits and Sales Order will be shown.

- He receives information about the orders that have been and will be made.

- By clicking "Bills" a table with all the bills and the details of each bill will be shown.

38. Economist manages Payrolls

- Economist is logged in the system.

- Economist clicks in "Transfers" button.

- He calculates the employee's payment based on the hours worked and deals with the payment of each employee.

- Economist will edit the payments that are done.

39. Agent checks the itinerary assigned for the day

- Agent is logged in

- Agent presses "itinerary"

- The table that is going to pop up will show all the itinerary planned by the administrator

40. Agent checks the task

- If the agent completes a task, they will have to check that task in the system

- This will make possible for the administrator and manager to keep track of the work

41. Agent can see the personal labor hours

- Agent presses labor hours

- A table is displayed containing the labor hours of the agent

- Agent can also check his payroll by pressing "Calculate Payroll"

42. Agent makes a new order

- Agent goes to "orders"

- There will be a table which can be filled with input details for the order

- The newly added order will be stored in the order history

43. Agent keeps track of the orders history.

- Again in the "orders" menu there will be "order history" option

- When the agent presses it the history of his orders will show

44. Agent uploads bills online

- After the new order step is finished the agent goes to "bill"

- The system automatically calculates the order value and prints the bill online in real-time.

45. Agent can check the map for the marked locations

- Agent clicks "itinerary"

- The map will open automatically the moment the page loads

46. Agents update their information

- Agent can make changes to their profile with limited access

- They can upload a profile picture with the button "add a photo"

4.2 Use cases extended

4.3.1 Admin

Name	User login (UC_01)
Summary	Users enter their credentials to login in their personal accounts.
Actor	Admin, Manager, Agents, Economist
Description	Ig their id and password is correct they will be able to login in their accounts.
Precondition	Every user must be accepted and given id by the admin first and then login the page.
Alternative	If the information given is incorrect they can give their information again.
Post Condition	Users are logged into their accounts.

Name	Register/Delete agents (UC_02)
Summary	Admin can register or delete the employees anytime possible. "Register new agent" will be the button to register new employees and "delete" will be the one to delete them.

Actor	Admin
Description	The way to register new agents is very easy for the admin, after he gives them their id and a temporary password. Deleting them is done even faster by not doing anything else.
Precondition	The admin must log in the system and after going to the dashboard and then agents option he can either register a new agent or delete a previously registered agent.
Alternative	There will be an option to cancel any undesirable action by showing the table asking the user if he is sure for the action that he is taking or not.
Post Condition	The agent has been registered or deleted depending on what admin chooses to do.

Name	User can change password (UC_03)
Summary	Users can change passwords anytime they want.
Actor	Admin, Manager, Agents, Economist
Description	The actors must enter email address and will get a confirmation and then put in the new one.
Precondition	The actors must have a valid email address to get the confirmation.
Alternative	No alternatives.
Post Condition	Password is changed.

Name	Update agents (UC_04)
Summary	Admin can update agent.
Actor	Admin
Description	Admin logs in the system and goes through dashboard and agents option after. After showing the whole page with their names on it next to the delete button there will be an update button, which updates the latest information about that particular agent.
Precondition	Admin must log in and take all the previous steps.
Alternative	No alternatives.
Post Condition	Agent is updated.

Name	Read agent's personal information (UC_05)
Summary	Agent can read agent's personal information.
Actor	Admin
Description	Each agent will fill in some personal information while registering which only admin can see
Precondition	The admin must be logged in first.
Alternative	No alternatives.
Post Condition	Admin will read the personal information.

Name	Check the itinerary of the agents live (UC_06)
Summary	Admin can check their agents while they are going to their assigned destination.
Actor	Admin, Manager
Description	They can track agents via google maps where they can see the path that agents are taking from itinerary planning option.
Precondition	The users must be logged in first.
Alternative	No alternatives.
Post Condition	Agents are tracked to their destination.

Name	Check/plan the next itineraries assigned (UC_07)
Summary	They can check next itineraries assigned to the agents.
Actor	Admin, Manager
Description	The actors are able to check and plan agent's next itineraries. Manager will plan their next itineraries in the itinerary planning option of the menu and both of these actors can check the next itineraries planned.
Precondition	The actors must be logged in first.
Alternative	No alternatives
Post Condition	They can plan and check every itinerary that they

	are willing to do.

Name	Add/delete product (UC_08)
Summary	These users will be able to add or delete products.
Actor	Admin, Manager
Description	The users will be able to add a new product or delete it by going through menu and then warehouse. Then user can check the product part where all products will be shown and in the system will have two options: add or delete.
Precondition	The actors must be logged in first and then go to the products page.
Alternative	There will be an option to cancel any undesirable action by showing the table asking the user if he is sure for the action that he is taking or not.
Post Condition	The product is added or deleted from the database.

Name	Check agent's performance (UC_09)
Summary	Admin can check agent's performance
Actor	Admin
Description	Admin will check agent's performance by going to agent's page. He will have the ''See performance'' button for each of the agents

	registered.
Precondition	The actors must be logged in first.
Alternative	No alternatives.
Post Condition	Admin has seen the agent's performance

Name	Create client (UC_10)
Summary	Admin can create clients.
Actor	Admin
Description	Admin will go from dashboard menu to the clients and from there he can create new clients that their company is operating with.
Precondition	The admin must be logged in first.
Alternative	He can go back and cancel the action anytime.
Post Condition	Client has been created.

Name	Register/delete economist/manager(UC_11)
Summary	Admin will be able to register or delete economists or managers.
Actor	Admin
Description	The admin will be able to register or delete economists or managers by going to their own pages and do what everything from there.

Precondition	The actors must be logged in first.
Alternative	There will be an option to cancel any undesirable action by showing the table asking the user if he is sure for the action that he is taking or not.
Post Condition	A new economist/manager has been registered. Economist or manager has been deleted from the database.

Name	Check bills (UC_12)
Summary	The users will be able to check bills
Actor	Admin, Manager, Economist, Agents
Description	The actors are able to check bills from the bills option in the warehouse page. Bill's page will contain detailed information about the amount, price and history of bill.
Precondition	The actors must be logged in first.
Alternative	No alternatives.
Post Condition	Everything from bills is checked.

Name	Check incoming/outgoing orders (UC_13)
Summary	Actors can check orders anytime.
Actor	Admin, Manager, Economist, Agent

Description	Actors can check incoming and outgoing orders anytime in the system and also their locations.
Precondition	The actors must be logged in first.
Alternative	No alternatives.
Post Condition	Orders are checked.

4.3.2 Economist

Name	View/Manage Inventory (UC_14)
Summary	Economist can access and manage information regarding the inventory in the Warehouse section.
Actor	Economist
Description	Economist logs in the system and in the Warehouse section he can have access to the inventory including "Flete Dalje" and "Flete Hyrje", where he can manage the information regarding the quantity of the products available and purchased products.
Precondition	Economist must be logged in into the system.
Alternative	No alternatives.
Post condition	After changing what is necessary, the changes are saved in the database.

Name	Add product (UC_15)
Summary	Economist can add a new product in the inventory section.
Actor	Economist
Description	After the economist is logged in the system, he registers a new product by filling the necessary details for the new product.

Precondition	Economist must be logged in into the system.
Alternative	No alternatives.
Post condition	New products are added to the database.

Name	Checks Arka (UC_16)
Summary	Economist is logged in the system and he can check the information in Arka section.
Actor	Economist
Description	All the information of Arka will be checked by the economist, where by clicking in the "Purchases" and "Sales" button he can control everything regarding their respective bill details.
Precondition	Economist must be logged in into the system.
Alternative	No alternatives.
Post condition	The economist may access other functionalities after this task.

Name	Checks Banka (UC_17)
Summary	Banka will show general information on the amount of money.
Actor	Economist
Description	Once the economist is logged into the system, he can check Banka section. Banka will include a "Report" button, which will give details about the current state of the money available.
Precondition	Economist must be logged in into the system.
Alternative	No alternatives.
Post condition	No Post Condition.

Name	Checks/Manage Transfers (UC_18)
Summary	The income statement will show the current financial

	report of the business.
Actor	Economist
Description	The monthly revenue and expenses will be shown. Economist will be responsible to manage the income statement with the appropriate information regarding revenues and expenses, in order to show the business performance.
Precondition	Economist must be logged in into the system.
Alternative	No alternatives.
Post condition	He can access other functions of the system, after finishing this task.

Name	Check Reports (UC_19)
Summary	Economist can check reports with their information.
Actor	Economist
Description	Pressing the "Reports" button he can have access to Orders and Bills. He will have general information of the orders that have been and will be made. He can also access the bills along with their respective details.
Precondition	Economist must be logged in into the system.
Alternative	No alternatives.
Post condition	No Post Condition

Name	Manage Payrolls (UC_20)
Summary	Economist has the right to view and manage the payrolls.
Actor	Economist
Description	In the "Transfers" button he will deal and calculate the employee's payment according to their working hours. He will edit if a payment is done or not.
Precondition	Economist must be logged in into the system.
Alternative	No alternatives.

Post condition	No Post Condition

4.3.3 Manager

Name	Create scheduled task for employee (UC_21)
Summary	Actor can assign task to employees and fill out an information form
Actor	Manager
Description	The actor adds a task in the assignment form also the task of the day is shown
Precondition	The actor must be logged in first
Alternative	No alternatives
Post Condition	The information can be read from the database

Name	Check Inventory (UC_22)
Summary	Actor can check inventory for newly added products
Actor	Manager
Description	The actor can check product details by pressing the button responsible for this function
Precondition	The actor must be logged in first
Alternative	No alternatives
Post Condition	This information is stored in the database

Name	Check Bill (UC_23)
Summary	Actor must have access to bills
Actor	Manager
Description	The actor can check bills with each detail by pressing the button responsible for this

	function
Precondition	The actor must be logged in first
Alternative	No alternative
Post Condition	All bills are stored in the database safely with all of their details dates, amount, etc.

Name	Making Orders (UC_24)
Summary	Actor can check all current orders also add new ones
Actor	Manager
Description	The actor can see the table displaying all orders and by pressing the button responsible for this function also can add new orders and fill their information.
Precondition	The actor must be logged in first
Alternative	No alternatives
Post Condition	The newly added information is stored and can be read in the database

Name	Labor Hours (UC_25)
Summary	Actor can keep track of labor hours of all the agents
Actor	Manager
Description	The actor can check the labor hours of all the agents and also calculate their payroll depending to their labor hours by pressing the button responsible to this function
Precondition	The manager
Alternative	No alternatives
Post Condition	All labor hours can be read and stored in the

	database

Name	Assigned Task History (UC_26)
Summary	Actor can check the assigned task history of all current employee what work did they do in the past
Actor	Manager
Description	The actor can display the task history of employees by pressing the button responsible to this function also see previous task assigned
Precondition	The actor must be logged in
Alternative	No alternatives
Post-Condition	The information is stored in the database

Name	Transportation Of Goods (UC_27)
Summary	The actors can keep track of the goods being delivered
Actor	Admin, Manager
Description	The actors receive a deliver confirmation and by using a checkbox confirm the delivery
Precondition	All actors must be logged in first
Alternative	No alternatives
Post-Condition	The delivery date is stored in the database

Name	Updating the Stock (UC_28)
Summary	The actor can check the stock also update it daily
Actor	Manager

Description	The actor can update the stock by pressing the button responsible for this function and adding the new products by filling the information
Pre-Condition	The actor must be logged in
Alternative	No alternative
Post Condition	The newly added product information is stored in the database

Name	Complete all Tasks (UC_29)
Summary	The actor must complete all task before deadline
Actor	Manager
Description	The actor is instructed to complete all task before the deadline, right before the deadline an alert message is displayed to remind the actor to complete the remaining tasks
Pre-Condition	The actor must be logged in
Alternative	No alternatives
Post Condition	No post condition

4.3.4 Agent

Name	Updating personal information (UC_30)
Summary	Agent can update the personal information
Actor	Admin, Manager, Economist, Agent
Description	The agent will limited access to updating his/her personal information including uploading a profile picture
Precondition	The agent should log in first
Alternative	No alternatives
Post condition	The agents will be identified by their information

Name	Check tasks (UC_31)
Summary	Check the completed tasks
Actor	Agent
Description	If the agent completes any task, they will have to check that task as completed in order for the manager and admin to keep track of the work
Precondition	The agent should be logged in to make any changes
Alternative	If the agent has problems during this process he should contact the manager for help
Post condition	The manager will have more information on agents work

Name	Check itinerary (UC_32)
Summary	Agents can read their personal itinerary
Actor	Agent
Description	Agents will have their own itinerary planned by the admin or/and manager
Precondition	The agent should log in first
Alternative	No alternatives
Post condition	Agent can check the itinerary whenever they want, every day.

Name	Making a new order (UC_33)
Summary	Agent can make a new order
Actor	Agent
Description	The agent can make a new order online making the job easier, by putting the information in the "orders" section and completing the order
Precondition	The agent must be logged in
Alternative	No alternatives
Post condition	The order will be stored in the order history and the agent will be able to make new orders too

Name	Uploading bills (UC_34)
Summary	Agent can upload bills online
Actor	Agent
Description	After completing the order, the agent will upload the bill which will be calculated automatically by the system for each order
Precondition	The agent must be logged in and the order must be completed
Alternative	No alternatives
Post condition	The bill is stored with the order which corresponds to

Name	Keep track of labor hours (UC_35)
Summary	The agent can keep track of his labor hour
Actor	Agent
Description	The agent will see his labor hours and also

	will be able to calculate the payroll by clicking "Calculate Payroll"
Precondition	The agent must log in first
Alternative	No alternative
Post condition	Agent will have transparency