

“Superly”

Requirements specification

# Functional Requirements

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ID | Module | Description | Priority | Risk | Status | Feasable |
|  | HR | The system **MUST** support management of employees only by the HR manager.  Creation: Employee can be 1 of any employee type  Updatable information: Name, Salary, Bank Details, Certifications. | MH | Low | Done | Yes |
|  | HR | The system **CANNOT** allow creation of 2 employees with the same ID. | MH | Low | Done | Yes |
|  | HR | The system **MUST** support management of licenses for carriers only by HR Manager. | MH | Low | Done | Yes |
|  | HR | The system **MUST** store employee information on a DB | MH | Low | Done | Yes |
|  | HR | The system **MUST** support management of shifts only by HR Manager. Updatable information: shift manager, counts, assigned employee IDs . | MH | High | Done | Yes |
|  | HR | The system **CANNOT** allow creation of shifts with no shift manager | MH | Low | Done | Yes |
|  | ~~HR~~ | ~~The system~~ **~~SHOULD~~** ~~be allow setting of how many workers of each type each shift needs~~ | ~~NTH~~ | ~~Low~~ | ~~Done~~ | ~~Yes~~ |
|  | HR | The system **CANNOT** allow creation of shifts with no carriers, cashiers, storekeepers or sorters | MH | High | In Progress | Yes |
|  | HR | The system **MUST** show which employees are available for each shift when scheduling | MH | High | Done | Yes |
|  | HR | The system **SHOULD** show how many shifts each available employee has done the past month for each shift type | NTH | High | Done | Yes |
|  | HR | The system **MUST** store shift history in DB | MH | Low | Done | Yes |
|  | HR | The system **SHOULD** notify about upcoming incomplete shifts | NTH | Low | In Progress | Yes |
|  | HR | The system **Must** require from the user to Login when it opens. | MH | Low | In Progress | Yes |
|  | Suppliers | The system **MUST** support 3 kinds of suppliers (routine, by order, not transporting) | MH | Low | Done | Yes |
|  | Suppliers | The system **MUST** save the supplier's information (id, bank account, paying agreement, contacts and contact's information) | MH | Low | Done | Yes |
|  | Suppliers | The system **MUST** support management of supplier cards only by storekeeper and store manager. | MH | Low | Done | Yes |
|  | Suppliers | The system **MUST** save if the supplier has fixed supplying days and when they are. | MH | Low | Done | Yes |
|  | Suppliers | The system **MUST** save details about the supplied items (cost per item, cost when buying in bulk) | MH | Low | Done | Yes |
|  | Suppliers | The system **MUST** show what items are purchased from each supplier | MH | Low | Done | Yes |
|  | Suppliers | The system **MUST** give the ~~corporate management~~  storekeeper and the store manager the ability to edit the agreement's details (supplying days, prices, changing items) | NTH | Low | Done | Yes |
|  | Inventory | The system **MUST** store the following product info: product ID, item name, category, price, weight, and manufacturer | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** store the following information about stock per each product: product ID, amount in each storefront, amount in each store warehouse, and each store’s min amount | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** store the following information about sales per each product and category: active sales, passed sales, future sales, percent off in sale | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** send an alert to the storekeeper when product is getting under the minimum amount in a certain branch. specifying product ID and store ID | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** allow only the storekeeper to change the minimum and maximum value of each product in a branch. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to produce a report of all products in all branches that are below their minimum amount. The report should include the following: store ID, product ID, product name, product current amount in store, product current amount in warehouse, product current amount in the branch (store+warehouse), product minimum amount in the branch, product maximum amount in the branch | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** track amounts of product left in each location (each store and each warehouse), including: 1) buying product 2) removing damaged/expired products 3) moving products from the warehouse to the store 4) product has been returned to the store from a customer 5) product has been arrived from supplier. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to produce a report of all products in a chosen branch based on categories. The report should include the following: store ID, **product ID**, product name, category, product current amount in store, product current amount in warehouse, product current amount in the branch (store+warehouse), product minimum amount in the branch, product maximum amount in the branch. | MH | Low | Done | Yes |
|  | Inventory | The system **SHOULD** be able to produce the history of the completed purchases from the suppliers, for a certain product. The history should include the following: StoreID, Supplier, Date, Amount, before discount price, after discount price, description. | NTH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to produce the history of the completed purchases from the suppliers, for a certain product that was bought with a discount. The history should include the following: StoreID, Supplier, Date, Amount, before discount price, after discount price, description. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to create/cancel sales that apply to certain products and/or categories to specified dates. Sales include: sale ID, percentage, start date, end date, Products IDs, categories IDs. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to produce the history of the sales to customers by product or by category. The history should include the following: sale ID, percentage, start date, end date, Products IDs, categories IDs. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to manage category (create, read, update, delete) only by storekeeper: update: change parent category, change name, change products in category | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to manage product (create, read, update, delete) only by storekeeper: update: change category, change name, change price, add to a certain store, remove from a certain store, add new supplier to product, remove supplier from product | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** allow employees to report about damaged/expired products. The user will insert the following information: store ID, product ID, amount, user ID, description. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to supply a report of damaged/expired products needs to be able to be sorted by store, product, category. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to produce a report of damaged products/expired products/both products which were reported on certain range of dates. The report must include the following information: product ID, store ID, amount, user ID, description, date, expired/damaged. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** be able to add and to remove branches to and from the chain. | MH | Low | Done | Yes |
|  | Suppliers & Inventory | The system **MUST** support automatic orders, initiated whenever stock running low. | MH | Low | Done | Yes |
|  | Suppliers & Inventory | The system **MUST** support automatic orders in fixed times (routine). | MH | Low | Done | Yes |
|  | Suppliers & Inventory | The system **MUST** support that orders cannot be edited in the last 24 hours before the order's planned deliveries. | MH | Low | Done | Yes |
|  | Suppliers & Inventory | The system **MUST** support choosing the best supplier for a specific order, choosing the cheapest one. | MH | Low | Done | Yes |
|  | Suppliers & Inventory | The system **MUST** store the following order information: order id, store id, Supplier id, arrival and creation time, status, Products ids, Products amounts, original price, discount and final price. | MH | Low | Done | Yes |
|  | HR & Transport | The system **MUSN’T** allow carrying out transport when no storekeepers are present at the transport arrival time. | MH | High | In Progress | Yes |
|  | Transport | The system **MUST** support management of a transports documents in the transport management database only by the logistics manager. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** provide to the carrier a destination document for each destination. | MH | Low | In Progress | Yes |
|  | Transport | The system **MUST** warn the logistics manager if the actual weight exceeds the maximum weight. | MH | Low | Done | Yes |
|  | HR & Transport | The system **MUSN’T** allow placement of a carrier without a proper license for the truck selected for transportation. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** store the following transport info: transport ID, date, time of departure, truck number, driver name, weight of the truck, source and destinations. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** store the following destination document info: document ID, transport ID, list of products provided in this destination. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** store the following site info: site ID, address, phone number and name of the contact person. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** store the following truck info: license number, model, net weight, maximum capacity weight. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** support redesign the route in case of weight deviation only by the logistics manager. | MH | High | In Progress | Yes |
|  | Transport | The system **MUST** update the transport document about the redesign of the route only by the logistics manager. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** support manage and order the transports only by the logistics manager. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** store the following transport document info: date, time of departure, truck number, driver name, weight of the truck, source, destinations and about redesign if done. | MH | Low | Done | Yes |
|  | Transport | The system **MUST** support the redesign of downloading or replacing one of the destinations, or replacing a truck, or removing some of the products from the truck only by the logistics manager. | MH | High | In Progress | Yes |
|  | Transport | The system **MUST** provide delivery of a product when there is a shortage. | MH | High | Backlog | No |
|  |  | NEW Requirements |  |  |  |  |
|  | Suppliers  &Transport | The system **MUST** match for every new Order a transport. | MH | High | Done | Yes |
|  | Suppliers  &Transport | The system **MUST** schedule the transport for the nearest appropriate date. | MH | High | In Progress | Yes |
|  | Transport  & HR | The system **MUST** alert the HR manager if there is no appropriate date for the execution of transport in the coming week. | MH | High | In Progress | Yes |
|  | Suppliers  & HR | The system **MUST** allow cancelation of an order only by HR-manager or Storekeeper or Logistic manager | MH | Low | In Progress | Yes |
|  | Inventory | The system **MUST** allow only the storekeeper to confirm arrival of orders to the warehouse. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** allow only the storekeeper to update quantities of products in stock according to the arrived order. | MH | Low | Done | Yes |
|  | Inventory | The system **MUST** allow only the storekeepers to report defective / expired / missing products in an order that has arrived (the report will be documented, and the rest of the products will be updated in the inventory system). | MH | Low | Done | Yes |
|  | Suppliers | The system **MUST** allow ordering a product from a supplier according to it's supplier ID. | MH | Low | In Progress | Yes |
|  | HR & Inventory | The system **MUST** allow inventory management only by  storekeeper. | MH | Low | Done | Yes |
|  | HR &  Suppliers | The system **MUST** allow only the storekeeper to order from suppliers. | MH | Low | Done | Yes |
|  | HR&  Transport& Suppliers& Inventory | The system **MUST** allow the store manager to  Produce reports and view all the data. | MH | Low | In Progress | Yes |
|  | System | The system MUST support multiple users at the same time. These users may log in from different physical locations | MH | Low | In Progress | Yes |
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# Non-Functional Requirements

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| --- | --- | --- | --- | --- | --- | --- |
| ID | Module | Description | Priority | Risk | Status | Feasible |
|  | Inventory | The system **MUST** support each product belonging to exactly one category, and each category having exactly one parent category or none, but can have any number of sub-categories. (sub-category and parent category are in a two-way connection) | MH | Low | Done | Yes |
|  | Transport | The system **MUST** support weigh of the truck before the truck leaving the source. | MH | Low | Done | Yes |
|  | System | The system CAN support interaction through graphical user interface | NTH | Low | In Progress | Yes |

1. Terms

Table 1: Terms

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| --- | --- | --- |
| **#** | **Term** | **Description** |
|  | Management | Set of action which include creation, reading, editing (information) and removal of defined class. |
|  | Employee | Person with work contract for working for ‘Superly’ |
|  | Employee information | ID, Name, Bank details, Salary, Employment conditions, Starting date, Certifications |
|  | Employee types | Cashier, Storekeeper, Carrier, Sorter, HR Manager, Logistics Manager, Transport Manager |
|  | Shift | Concept used to describe a fixed work period. |
|  | Shift Information | Date, Shift Type, Shift Manager’s ID, Count of Employees Needed for each Employee Type, Assigned Employee ID’s for each Employee Type |
|  | Shift types | Morning shift, Evening shift |
|  | Constraint | Concept used to describe when an Employee is available for work |
|  | Constraint Information | Date, Shift Type, Available Employees for the Shift |
|  | Target amount | The number of items needed for certain product in a specific store after it gets under its minimum amount. |
|  | License types | B, C, C1, C + E |
|  | Truck model | Van, Semi-Trailer, Double-Trailer, Full-Trailer. |
|  | Shipping areas | South, North, East, West, Southwest, Southeast, Northwest, Northeast. |
|  | Transport | Delivering products from supplier to destination. |
|  | Redesign | When the transport exceeds the possible weight for it the transport returns to redesign. |
|  | Transport Document | A document describing the transport after it is completed. |
|  | Destination Document | A document describing the products delivered in a particular shipment to the destination. |
|  | Shortage | When inventory runs out and exceeds the minimum quantity set for the product. |
|  | Appropriate date | The closest date that possible according to the supply days of the supplier and to the carrier's schedule. |
|  | Supplier card | Contains: name, address, bank number, contacts, manufacturers, paying agreement. |
|  | Product supplier ID | The ID this product has at the supplier system. |

1. Open Questions

Table 3: Questions

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| **#** | **Topic** | **Issue** |
|  | Document | Will there be an additional need for the documents? |
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1. Assumptions

Table 2: Assumptions

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| --- | --- | --- |
| **#** | **Topic** | **Assumption** |
|  | Suppliers | The contact's info is only phone number and name. |
|  | Suppliers | We can't change orders from by order suppliers in the last 24 hours before the shipment. |
|  | Suppliers | A supplier has only one type of agreement, from : by order, routine, not transporting. |
|  | Suppliers | When stocks running low, we choose the cheapest supplier to order from, not considering his arrival time. |
|  | Suppliers | We can add new supplier for the system without agreement. (Maybe we want just to save his information for future deals). |
|  | Suppliers | We assume that when adding an item to agreement, the supplier manager knows both the id this item has at the supplier catalog and the id this item has at inventory. |
|  | Inventory | There is predefined target amount per product per store which is above the min amount, such that when creating an order because of low stock the order amount should be target-min |
|  | Suppliers+Inventory | The System is shut down at the end of each workday, and turned on at the beginning of the day. At the beginning of each day we send the suppliers the updated amounts for the next day’s orders if needed. |
|  | Suppliers+Inventory | When a delivery arrives at the warehouse, the orderID and supplierID is known (attached to the driver’s receipt) |
|  | Suppliers+Inventory | Each supplier can have different ID for the same product (For example: Bamba can have ID 1 in Superly, ID 5 in supplier 1 and ID 1 in supplier 2) |
|  | Suppliers | The "best" supplier is the cheapest one regardless to arriving time. |
|  | Suppliers+Inventory | Printing an order on screen equals to sending the order to the corresponding supplier. |
|  | Suppliers+Inventory | Sending an order that has already been sent to a supplier equals to informing the supplier about updating the order. |

Version History

Table 3: Version History

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| --- | --- | --- |
| **Date** | **Author** | **Remarks** |
| 25/04/2022 | Roi Tiefenbrunn | First draft |
| 09/05/2022 | Yonatan Diga | Added suppliers & Inventory requirements and suppliers assumptions. |
| 11/05/2022 | Yonatan Diga | Improved requirements |
| 14/05/2022 | Tomer Ravkaie | Improved Requirements and Assumptions |
| 15/05/2022 | Roi Tiefenhbrunn | Deleting of non-functional reqs for HR-module Adding term ‘Employee’, ‘Employee Information’, ‘Employee types’, ‘Shift’, ‘Shift Information’, ‘Shift Types’ Adding requirements 12, 42 |
| 15/05/2022 | Roi Tiefenbrunn | Completing Requirements 1, 4, 5, 11 Adding Requirement 2 Adding the terms ‘Constraint’, ‘Constraint Information’ Removed Requirement 7 |
| 15/05/2022 | Chai-Shalev Hadad | Add transport requirements.  Fix the incorrect requirements.  Add terms and open question. |
| 02/06/2022 | Yonatan Diga | Added requirements for assignment 3 |
| 03/06/2022 | Yonatan Diga | Updated permissions. |
| 11/06/2022 | Yonatan Diga | Updated requirements. |
| 12/06/2022 | Roi Tiefenbrunn | Added multi-user and GUI requirements as they are requested by the client |