Software Requirements Specification

for

Entre Hilos & Algodón Management Software

Version 2.0 approved

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01/12/22

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This Software is aimed at a small textile business. Its main function is to help better organize all products, materials used and orders. These will be organized in data tables.

The product organization will inform us of the name, its price and how much it is in stock. In addition, with a maximum of 5 products in stock we can show a single data table.
In the organization of orders, we will be informed of the name of the client, the delivery date and if it was delivered or not. In addition, we can show only pending orders or only orders that have already been delivered. In each of them we can add, modify or delete what is needed.

Our Software will also calculate the cost of the product; This will be done with some data that the User will enter, which would be: Current salary, hours worked on the product and the cost of the materials used in the manufacture of the product.
It will also generate 3 Reports; the General Report, the Agenda Report and the Inventory Report. These reports may be printed by the User.

The Agenda Report will have pending and completed orders; the Inventory Report will include the products in stock and in shortage; The General Report will be the union of the previously mentioned reports.

Finally, the client will have a Username and Password that we will deliver, this in order that there are no security problems, this data may be modified by the client at any time.

1.2 Document Conventions

The previously mentioned requirements have their own priority for the client and therefore for us who are the Product Developers, in this way we will satisfy the needs of our client.
The priority is because with all the information that the software will provide, it will facilitate the organization of our client with respect to their business.

1.3   Intended Audience and Reading Suggestions

This document is intended for our testers and for us as developers.
The rest of the document includes the General Description of the product, the Specification of the Requirements and finally the Appendices of the document.

1.4   Product Scope

This Software is for Management, which will help the User to have a good management with his Textile Products Business.

Its purpose is to help the client reduce the organization time of the business, being easy to understand and manage; You can print reports that will help you keep up to date with products that are in short supply, pending orders, and others. It will also facilitate the calculation of the final price of each product.

1.5   References

Reference	Title	Link	Date	Author
Robert Cecil Martin.(2008).Clean Code: A Handbook of Agile Software Craftsmanship (1st ed.).Pearson	Clean Code: A Handbook of Agile Software Craftsmanship	https://dokumen.pub/clean-code-a-handbook-of-agile-software-craftsmanship-0132350882-9780132350884.html	August 1 of 2008	Robert Cecil Martin
CrissUD.(September 30 of 2020). Proyecto Interfaz Gráfica.GitHub.https://github.com/CrissUD/ProyectoFrontendJava	Proyecto Interfaz Gráfica	https://github.com/CrissUD/ProyectoFrontendJava	September 30 of2020	CrissUD

1.6   Summary

In the rest of the document we have important information that describes the functions that our product will have, what are the requirements, and an appendix where we can find meanings for various words or acronyms that are used throughout the document.

2. Overall Description

2.1 Product Perspective

This Software product will be the first one our client acquires "Entre Hilos & Algodon" and is independent, it works only with MongoDB. This is used to save all the data.
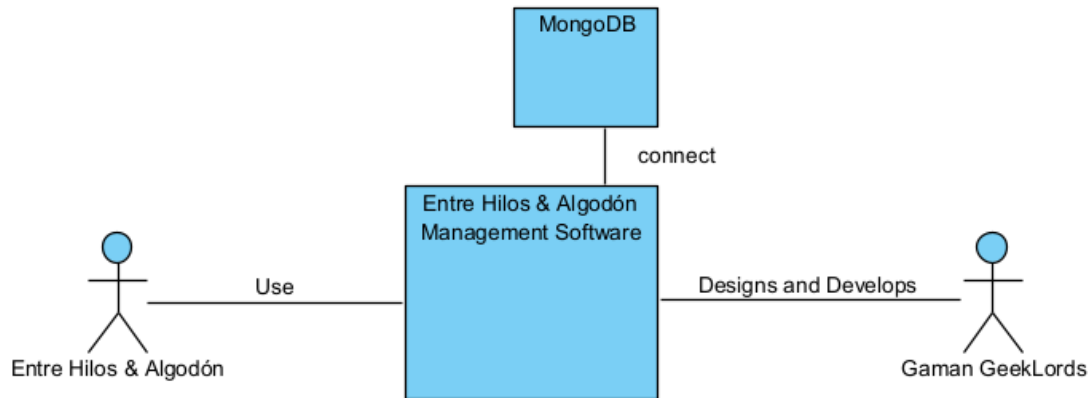
2.2 Product Functions

The following are the functions that the product must perform:
- *The system must allow the user to login.*
- *The system must allow the user to update their data.*
- *The system must allow Organizing products and orders in data tables.*
- *The system should calculate the selling price of the products.*
- *The system must allow, search, add, modify and update products and orders.*
- *The system must generate 3 Reports, General, Agenda and Inventory.*
- *The system must allow the printing of reports.*

2.3 User Classes and Characteristics

User Type	User
Position	Administrator
Activities	He can modify his data. He can add, search, modify and delete information. He can view inventory and order reports. He can print the reports

2.4 Operating Environment

The user uses the product on a Laptop as hardware with a Windows 10 Operating System.

2.5   Design and Implementation Constraints

One problem that limits our product is that currently there is technology so advanced that it overshadows our system.

2.6   User Documentation

- *PDF with Help Guide*
- *Online accessory*

2.7   Assumptions and Dependencies

The factors that could affect the product is that there is a failure with the MongoDB database, this is because all the data that is required by the product and by the client is stored there, if this data is lost, the Software It would be practically useless.

3.   Specific Requirements

Requirement number	1.0	
Requirement name	Log In	
Requirement description	When the software opens, it should ask for the username and password.	
Type	Requirement	
Requirement souce	Customer	
Requirement prority	Medium/Desired	

Requirement number	1.1
Requirement name	Update User
Requirement description	The software must allow updating the username and password whenever the User wishes.
Type	Requirement
Requirement souce	Developers Conclusion
Requirement priority	Medium/Desired

Requirement number	2.0
Requirement name	Organize Inventory
Requirement description	The software must organize all the products that the user enters.
Type	Requirement
Requirement souce	Customer
Requirement priority	High/Essential

Requirement number	2.1
Requirement name	See the products
Requirement description	The software allows me to see all the products, those that are in stock and those that are in short supply.

Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	2.2
Requirement name	Add New Product
Requirement description	The software allows me to add new products with the necessary information and they will be saved in the inventory organizer.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	2.3
Requirement name	Update Product
Requirement description	The software allows me to update the data of a product.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	2.4
Requirement name	Delete Product
Requirement description	The software allows me to delete a product.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	2.5
Requirement name	Search Product
Requirement description	The software allows me to search for a product from all the inventory by means of the id or its name,
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	2.6
Requirement name	Materials Organizer
Requirement description	The software organizes the materials used in the products.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	2.7
Requirement name	Add New Material
Requirement description	The software allows me to add new material with your information.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	2.8
Requirement name	Update Material

Requirement description	The software allows the user to modify the material information.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	2.9
Requirement name	Delete Material
Requirement description	The software allows the user to delete material.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	3.0
Requirement name	Product calculated price
Requirement description	The software calculates the price of the product with the entered information.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	4.0
Requirement name	Organize Orders
Requirement description	The software organizes all orders in an agenda.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	4.1
Requirement name	See the Orders
Requirement description	The software allows the user to view all orders, orders placed and orders pending.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	4.2
Requirement name	Search Order
Requirement description	The software allows the user to search for orders by name or by ID.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	4.3
Requirement name	Add New Order
Requirement description	The software allows the user to add new orders with your information.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	4.4
Requirement name	Update Order
Requirement description	The software allows the user to modify the order information.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	4.5
Requirement name	Delete Order
Requirement description	The software allows the user to delete orders..
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	5.0
Requirement name	Reports
Requirement description	The software will generate 3 Reports; Agenda Report, which includes the pending and completed orders; Inventory Report, which includes the products in stock and in shortage; and the General Report, which includes the Agenda Report and Inventory Report.
Type	Requirement
Requirement souce	Customer
Requirement prority	High/Essential

Requirement number	5.1
Requirement name	Report Printing
Requirement description	The software allows the user to print the reports with the help of a printer
Type	Requirement
Requirement souce	Customer
Requirement prority	Medium/Desired

3.1 External Interface Requirements

3.1.1 User Interfaces

- **Log In**
  Here we will have a place where the username and password will be entered. In addition to a LogIn button that will allow us to enter the Software menu, this button will not give access until the username and password match.

- **Menu**
  Here we will have the menu with which we are going to move through all the software, it is made up of the Entre Hilos & Algodón Profile, Profile Menu, Inventory Menu, Agenda Menu, Materials Organizer Menu, Reports Menu and Help Menu.

- ***Entre Hilos & Algodón Menu***
  Here we will have the Main Panel, About, which will have the information of the creators of the software, to whom it is directed and the version of the software.
  In addition, an alert appears and informs us which products are in short supply, as long as these products are 5 or less in stock.

- ***Profile Menu***
  Here we will have a Panel where we can see our user, email and the Current Salary. In addition, they will include 3 buttons; Update will allow me to update the aforementioned data, if we want to change the password, it will ask us to confirm the old password and we can change it to a new one, here a "Confirm" Button will be included to confirm the previous password and a "Save" Button, when moment of pressing "Save", I will get a question to confirm if I want to save the updated information.
  Log Out will close the menu and direct us to the login window, without first asking if we confirm the action.
  Back, as its name indicates, will return us to the Main Panel, About.

- ***Inventory Menu***
  Here we will have a Panel where it will show us a table with all the products, We will have a Button Group of 3 Radio Buttons, where it allows me to choose whether to see the with "All products, Products in Stock or Products in shortage" and when pressing the "Refresh" button the table will be updated.
  We will have a Button Group of 2 Radio Buttons, these will allow us to choose how to search for a product in the inventory, and we search with the "Find" button, if the product is not found , I will get an alert informing that I did not find that product, on the contrary, if it is found, all the data of that product will appear, Name, sale price, hours worked on it, a description, the materials used and their respective prices, We will also have a button to add a new material and another to delete a material. We can update these data but by pressing the "Update to confirm the update" button, this without first asking me if I want to update.
  There is another "Delete" button that allows me to delete the product, and in the same way I will get an alert to confirm if I want to delete the product.
  We will have another "Add Product" button where it will allow me to enter a new product with all the necessary information, and additionally we will have a "Save" button that is to save the product, and I will skip a question if I want to confirm.
  We will have a Button "Back" which allows me to return to the About.

- ***Agenda Menu***
  Here we have a table where it shows us all the orders.

We have a Button Group with 3 Radio Button, which allows me to choose what information will appear in the table "All orders, Pending orders or Completed orders" and to update we will have the "Refresh" button.

We have another Button Group with 2 Radio Button, which allows me to choose how to search for an order, "By ID or by Client Name" and to search we will have a "Find" button. If it does not find it, we will get an alert informing us that the order could not be found. Otherwise, the information of the order will be displayed. Here we can update and delete said order with the "Update" and "Delete" buttons; When pressing them, a window appears asking if we want to confirm the action.

We will have an "Add Order" button where it will allow me to add a new order with all its information and it will allow me to save with the "Save" button, and when I press it, it will ask me if I want to confirm the action.

We have a "Back" button that leads us to the Main Panel, About.

- ***Materials Organizer Menu***
  We will have a table that shows us all the materials used in the products.

  We will have a Button Group with 2 Radio Button to be able to select how to search for a material "By ID or by Name" and to search for it we will have a Button "Find", if the product is not found, an alert will jump informing that it could not find the material; otherwise, it will display all the information of the material. Here we can press the "Update" Button which will allow us to update the data, to save the changes will be made with the "Save" Button and which will display a question confirming the action. In the same way, to delete the material we can press the "Delete" Button and it will display a window asking if we confirm the action.

  We will have an "Add Material" Button in which the fields that can be filled in will be opened; To save we will have a "Save" Button which, when pressed, will prompt a question to confirm the action.

  We will have a "Back" Button which will return me to the About.

- ***Reports Menu***
  It has 3 Menu Items, Inventory Report, Agenda Report and General Report.

  - ***Agenda Report Menu Item***
    Here I get the tables of pending orders and orders that have already been made. We will have a "Print" Button which will allow us to print the report.

  - ***Inventory Report Menu Item***
    Here I get the tables of the products that are in stock and the products that are in short supply. We will have a "Print" Button which will allow us to print the report.

- ***General Report Menu Item***
  Here I jump to the 2 previously mentioned reports, Agenda Report and Inventory Report. We will have a "Print" Button which will allow us to print the report.

- ***Help Menu***

3.1.2 Hardware Interfaces

As the Hardware components that will be used we find the Mouse, which will make several clicks on the buttons and fields that are necessary to be able to communicate with the Software; Another component will be the Keyboard, this will allow us to enter fields which need to have text and last but not least, the printer, which will help us print the reports on a physical sheet.
And

3.1.3 Software Interfaces

This product works with a Windows 10 Operating System, it will connect with a MongoBD database and in order to connect to it, a library is made that includes the functions with which they can communicate with them.
The data that will be shared with the system components will be those found in the different data tables that are available, this is because this information is required in other parts of the system component.

3.1.4 Communications Interfaces

The associated requirements to be able to communicate with the system is the Atlas MongoDB website since the information is being stored there. But there is a drawback, this information that is already traveling to this web page can be stolen by someone who wants to do it, this is because the information is not encrypted.

3.2 System Features (Functional Requirements)

- *User Login.*
- *CRUD Operations in the Software.*
- *Generation and printing of reports.*

3.2.1 System Feature 1

Login to Software

3.2.1.1 Description and Priority

When entering the software, he should ask you to enter a username and password, this priority is Medium, because our client requested it but as an additional so that there is security. You will have a benefit of 7/9 because not everyone can enter the software to perform the relevant activities.

3.2.1.2 Stimulus/Response Sequences

- *The software allows you to enter the user.*
- *The software allows you to enter the password.*
- *The software has a Login button.*

3.2.1.3 Functional Requirements

REQ-1: If at the moment of entering the data, these characters are not allowed, an alert will appear informing that these characters are not allowed.

REQ-2: At the moment of pressing the Start session button, and the data does not match; the system will not go to the next window and ask you to enter the data again.

3.2.2 System Feature 2

CRUD functions

3.2.1.1 Description and Priority

The system will allow me to carry out CRUD operations so that the user is free to view,find, update, delete the products, their orders and/or materials at any time. This high priority of 9/9 because the Software is intended for this, without these operations, the program would be unusable.

3.2.1.2 Stimulus/Response Sequences

- *The software allows you to view the products, materials and orders you currently have.*
- *The system allows me to search for a product, material or order at the time it is required.*
- *The software allows updating the information of the products, materials and orders that are required at that time.*
- *The software allows users to delete products, materials and orders at any time, when the user needs it.*

3.2.1.3 Functional Requirements

REQ-1: When viewing the products and orders, these can be classified into 3 parts; for inventory: all products, products in stock and in short supply; for orders: all orders, pending and completed.

REQ-2: When searching for a product or order, these can be done by means of the ID or the name, if it is found, it will be

used; Otherwise, I will get a message saying that it could not find it.

REQ-3: To update the data, when pressing the Save button, I will get a question to confirm the action.

REQ-4: To delete an order or product, when pressing the Delete button, I will get a question to confirm the action.

3.2.3 System Feature 3

Generate Reports

3.2.1.1 Description and Priority

The software allows me to make 3 reports, A General Report, Inventory Report and Agenda Report; These 3 will have the option to print when the user needs it. The priority is high of 7/9 because the user needs the information on a physical piece of paper to be able to transport it in a better way.

3.2.1.2 Stimulus/Response Sequences

- *The software allows you to view the products, materials and orders you currently have.*
- *The system allows me to search for a product, material or order at the time it is required.*
- *The software allows updating the information of the products, materials and orders that are required at that time.*
- *The software allows users to delete products, materials and orders at any time, when the user needs it.*

3.2.1.3 Functional Requirements

REQ-1: The Software allows me to generate 3 Reports: the General, the Inventory and the Agenda.

REQ-2: The General Report will show a report of the inventory and the Agenda.

REQ-3: The Inventory Report will be divided into 2, that of products in stock and in shortage. You can choose between one of them.

REQ-4: The Agenda Report will be divided into 2, the pending orders and completed orders. You can choose between one of them.

REQ-5: The 3 reports will allow printing on a physical sheet.

3.3 Other Nonfunctional Requirements

3.3.1 Performance Requirements

3.3.2 Safety Requirements

In the product there may be some damage on the part of the user when he enters the fields that have to be filled in incorrectly, for which reason it will be saved in that way in the database and when searching for it, it will be difficult because he did not enter the information correctly; To prevent all these actions we have validated these fields to avoid entering data that is not allowed.

3.3.3 Security Requirements

To give a greater degree of security we have made sure that when opening the Software it asks for the username and password, these data are provided by us to the client, once inside the system you can make the modifications and if you need to change the username and password, the user can do it.

3.3.4 Software Quality Attributes

Our software system is easy to use, it is based on simply clicking and entering data by keyboard. It is also reliable and maintainable is great..

3.3.5 Business Rules

- *The system will organize the inventory and the orders in tables from which they can be classified in order to have a greater ease of search.*
- *The system will generate inventory reports, orders and a general report that covers the 2.*
- *The system will inform the user when there are low products in stock.*
- *The system will compute que product production cost for each when the ser insert a new product or update working time or materials used in a product or update general cost of materials in materials organizer*

3.4 Other Requirements

This software does not allow 2 or more products to be saved with the same name. This is very important because in this way the duplication of products with the same name is avoided.

4. Appendixes

Appendix A: Glossary

MongoDB: Database where all software data is stored.
Radio Button: It is a widget that works as a selection button.
Button Group: It is a widget that groups the buttons, in this case the Radio Button.
Widget : Graphic element with which the user can interact.

Appendix B: Analysis Models

EHAManagement

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Registration
-userCollection : MongoCollection
+createUser(id : int, email : String, password : String, currentSalary : float) : User
+insertUser(user : User) : boolean
+deleteUser(id : int) : boolean
+updateUser(user : User) : boolean
+findValue(id : int, key : String) : String
+createConnectionToCollection() : MongoCollection

Inventory
-productsCollection : MongoCollection
+createProduct(id : int, name : String, productionCost : float, materialsIds : ArrayList, materialsQuantities : ArrayList, description : String, workingTime : int, quaantity : int) : Product
+insertProduct(product : Product) : boolean
+deleteProduct(id : int) : boolean
+updateProduct(product : Product) : boolean
+findValue(id : int, key : String) : String
+createConnectionToCollection() : MongoCollection
-readAll(key : String) : ArrayList

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EHAManagement

UI

Agenda
-ordersCollection : MongoCollection
+createOrder(id : int, clientName : String, deliveryDate : String, deliveryPlace : String, description : String, isDelivered : boolean) : Order
+insertOrder(order : Order) : boolean
+deleteOrder(id : int) : boolean
+updateOrder(order : Order) : boolean
+finValue(id : int, key : String) : String
+createConnectionToCollection() : MongoCollection
+readAll(key : String) : ArrayList

MaterialsOrganizer
-materialsCollection : MongoCollection
+createMaterial(id : int, name : String, generalQuantity : float, unitQuantity : float, generalCost : float, unitCost : float) : Material
+insertMaterial(material : Material) : boolean
+deleteMaterial(id : int) : boolean
+updateMaterial(material : Material) : boolean
+findValue(id : int, key : String) : String
+createConnectionToCollection() : MongoCollection
+readAll(key : String) : ArrayList

Reports Generator
+printCompleteReport()

InventoryReportsGenerator
-inventoryReportsCollection : MongoCollection
+printStockProducts()
+printShortageProducts()

GeneralReportsGenerator
-generalReportsCollection : MongoCollection

AgendaReportsGenerator
-agendaReportsCollection : MongoCollection
+printPendingOrders()
+printCompletedOrders()

<<create>>
<<use>>

User
- userName : String
- email : String
- password : String
- currentSalary : float

Product
- id : int
- name : String
- materialsIds : ArrayList
- productionCost : float
- materialsQuantities : ArrayList
- description : String
- workingTime : int
+ quantity : int

CostsCalculator
+ computeUnitCostPerMaterial() : float
- computeMaterialsCostPerProduct(product : Product) : float
- computeWorkingTimeCostPerProduct(product : Product) : float
+ computeTotalProductProductionCost(product : Product) : float

utils

T03- Gaman GekkLords
Jairo Bonilla
Cajilima Lady
Carrera Nahir
Chillo Nicolay

Order
- id : int
- clientName : String
- deliveryDate : String
- deliveryPlace : String
- description : String
- isDelivered : boolean

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Material
- id : int
- name : String
- generalQuantity : float
- unitQuantity : float
- generalCost : float
- unitCost : float

Report
- id : int
- type : String
- date : Date

AgendaReport
- pendingOrdersIds : ArrayList
- completedOrdersIds : ArrayList

GeneralReport
- pendingOrdersIds : ArrayList
- completedOrdersIds : ArrayList
- stockProductsIds : ArrayList
- shortageProductsIds : ArrayList

InventoryReport
- stockProductsIds : ArrayList
- shortageProductsIds : ArrayList

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