

**CELESTRA TAILORING AND COMPUTERIZED EMBROIDERY**

SOFTWARE REQUIREMENTS SPECIFICATION

|  |  |
| --- | --- |
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1. **Executive Summary**

Celestra Tailoring and Computerized Embroidery is a small family owned business established 10 years ago at the RQD Building along Regalado Avenue in West Fairview Quezon City by Mr. and Mrs. Celestra. Within those years they have established a stable list of clientele which is slowly growing due to numerous referrals. As the business grows, they are looking in to ways that would help make the maintenance of the business easier and more time efficient.

Currently, they offer both tailoring and computer embroidery services. The tailoring side of the company can be found in a small shop along Regalado Avenue in Fairview, Quezon City. The shop caters to the walk-in customers that are looking for alteration services or made to order garments, like uniforms and scrubs. The shop usually receives around 40 walk-in orders per day during the normal season and 50 during its peak. They also cater to production of uniforms of schools and doctors around the metro.

The computer embroidery side of the business is centered at a warehouse, which is separate from the tailoring shop. They produce patches and logos for the uniforms of several schools and companies. Given a design, they load it into Wilcom Embroidery Software, which determines the colors of the string to be used for the design and programs the design it into the machines.

1. **Overview of the Business Process**

***2.1 Existing Business Process***

The business has two parts, each catering to different kinds of orders. The following figures below will walk you through both of them.

***2.1.a Tailoring Part***

The tailoring part of the business takes on two types of orders, alteration and made to order. Figure 2-1 shows the business process for alteration.



*Figure 2-1. Existing Alteration Business Process*

The customer walks in the shop and approaches the shop supervisor with the garment to be altered. Then the shop supervisor asks the customer what type of alteration needs to be done. The order is now passed on to a tailor. The tailor is in charge of taking the necessary measurements needed for alteration. The tailor gives a price based on the standard pricing sheet. The price may change, depending on the material of the garment. The customer now has a choice to pay fully or just have a 50% down payment. The customer copy of the job order receipt is now issued to the customer with the pick-up date. The supervisor now logs the order in the logbook then forwards their copy of the job order receipt to the tailor. The tailor then determines the materials to be used and starts production. The customer then goes back on the pick-up date and claims the garment with his receipt. If the receipt is lost, the shop supervisor checks the logbook. If the customer goes in and his garment is not yet finished, they will be told to go back on a later time or date.

*Figure 2-2 discusses the existing business process for made to order garments.*



**Figure 2-2. Existing Made to Order Business Process**

For made to order garments, the customer usually contacts the general manager via phone call and they set a meet-up date. On that date, the customer and the general manager meet and they discuss the order. The customer tells the general manager what type of garment is to be made and depending on the type of order, the general manager takes the necessary measurements and fills out the measurement sheet (refer to appendix C-2). They also discuss if the order is to be picked-up or delivered. The customer then pays a down payment of 50% on the spot as a working capital. There are instances that the down payment given is not worth 50% of the total bill, but this all depends on the agreement of the general manager and the customer. The customer also has the choice to pay the full amount. The customer copy of the job order receipt is issued with a tentative pick-up or delivery date. The general manager then forwards the job order to the tailor/s needed for the specific job. Upon receiving the order, the tailors determine the materials to be used and start working on the job order. Then on the pick-up/delivery date, the order is picked up by the customer or delivered by the general manager.

There are also walk-in customers that request for made to order garments. For this type of situation, it would be the shop supervisor that will take on the work of the general manager.

**2.1.b Computer Embroidery Part**



Figure 2-3. Existing Embroidery Business Process

For embroidery orders, the customer usually contacts the general manager via phone call and they set a meet-up date. On that date, the customer and the general manager meet and they discuss the order. The customer shows the general manager, the design they want to be embroidered. The customer also indicates if they want to have it embroidered on the actual garment or if they only want the patches. Upon evaluating the intricacy of the design, size, color and quantity, the general manager gives a price. If the order is less than 500 pieces, the customer must pay a program fee for the software that would program the design to the machines. The customer then pays a down payment of 50% on the spot as a working capital. There are instances that the down payment given is not worth 50% of the total bill, but this all depends on the agreement of the general manager and the customer. The customer also has the choice to pay the full amount. The customer copy of the job order receipt is issued with a tentative pick-up or delivery date. The general manager then forwards the job order to the warehouse workers. Upon receiving the order, the warehouse workers load the design into the software that would program the machines to embroider the design. With this, production can now start. Then on the pick-up/delivery date, the order is picked up by the customer or delivered by the general manager.

Although unlikely, there are also walk-in customers that request for patches or embroidered garments. For this type of situation, it would be the shop supervisor that will take on the work of the general manager.

**2.2 Data Requirements**

A measurement form (see Appendix C-1) is filled up every time an order from the tailoring shop is taken. This would contain the basic measurements needed to create or alter the given garment. This form can also specify what type of garment is to be made, if it is a made-to-order request. The materials needed for this specific job are also taken note of.

Once an order is placed, it is logged in to the log book (see Appendix C-2). The log basically functions as an end of the day report of how many orders were received and processed. The logbook takes note of the Job Order #, the type of job, the price charged, the tailor working on the order and if its paid or not paid.

The tailoring shop also has a standard pricing list for the items that are usually ordered from them (see C-3).

**2.3 Roles in the Business Process**

There are various stakeholders in the business process as seen in Table 2-1.

|  |  |
| --- | --- |
| Role | Description of Tasks |
| Customer | * Provides job to be done (Made to Order, Alteration, Embroidery) * Provides the measurements of the garment to be made or alter. * Provides the design, size, and number of colors to be embroidered. * Picks up the finished garment if it is for pick-up. |
| Tailor | * Does the tailoring and alteration jobs * Identifies materials to be used for a particular job |
| Warehouse workers | * Responsible over the production of the embroidery jobs * Maintenance of the item stocks in the warehouse |
| Supervisor | * Takes down orders at the tailoring shop * Issues a job order receipt after receiving the down payment * Logs every job order to the logbook * Disseminates job orders to tailors |
| General Manager | * Watches over the whole business * Maintains close client relationships * Handles bulk orders * Handles orders outside of the shop * Responsible for checking and restocking of materials * Handles deliveries |

*Table 2-1. Stakeholders and Roles*

1. **Problem Analysis**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Description** | **Cause** | **Symptoms** | **Impact** |
| # | What’s the problem? | What causes the problem? | How do we know the problem exists? | Why is this important? What are the consequences? |
| 1 | Orders are overlooked, misplaced or lost. | Using pen and paper as a means of tracking orders. | A customer once called the management to ask about the progress of his order only to discover that it has not been processed yet since the tailor lost the job order receipt. | This may cause customer satisfaction. This causes delay in processing of other impending orders. This would also cause them to lose profit. |
| 2 | Restocking | No true inventory system exists. They simply ask the workers which materials are needed to be restocked, which can be bad since the workers may not be able to name everything that needs to be restocked. | Once an order was taken before checking the inventory. Upon checking, the materials needed were unavailable. The order was delayed since they had to go to restock items first. | Same as above. |
| 3 | Difficulty in tracking order progress | No assurance that all orders are logged into the notebook. | The business owner directly stated the issue. The one recording the orders may not list down the orders so that when they count the cash, it would not equate to the receipts issued. | Orders may go unpaid and the business may lose profit. |

The business needs software that would help them monitor all the orders that they are handling, since they have difficulties in managing the daily influx of orders. With regards to the issue of restocking, the business needs a facility that would be able to update, monitor and report on the current inventory status.

1. **Software Solution** 
   1. **Objectives**

The software aims to provide a standardized way of tracking orders for both sides of the business. It also aims to create a system to maintain the supply inventory for both the shop and the warehouse.

* To provide a facility for taking orders, with their details and specifications
* To provide a facility for tracking all the progress of the orders, along with their deadlines and delivery dates
* To provide a facility for managing the records of buyers and their orders
* To provide a report of all the current items they have in stock
* To generate a report for monitoring the business’s earnings for the day
  1. **Characteristics**
* The system must be fast and efficient.
* The system must be user-friendly and reliable.
* The system must answer every problem the clients wants to be solved.
* The system should be easier to understand and easier to navigate.

1. **User Stories**

|  |  |
| --- | --- |
| **User Story #1:** The user logs in with a password. | |
| **Estimate (Days):** | **Priority:** |
| **Pre-condition:** The user is at the login section. | |
| **Scenario:**   1. The user needs access to the system. 2. The user enters a password to gain access. 3. The system validates the password. 4. If correct, the system displays the main menu. | |
| **Post-condition:**  The user has successfully logged in. The main menu is displayed. | |
| **Acceptance Criteria:**   1. Test that if the password is correct, the main menu will show up. 2. If the password is incorrect, the system will alert the user & go back to the login section. | |

|  |  |
| --- | --- |
| **User Story #2:** The user can can change the current password. | |
| **Estimate (Days):** | **Priority:** |
| **Pre-condition:** The user is logged into the system and has selected the change password option. | |
| **Scenario:**   1. The user selects the change password option from the main menu. 2. The user enters current password. 3. The system validates whether the entered password is the current password. 4. The user enters the new password. 5. The user re-enters the new password for confirmation. 6. The system replaces the old password with the new password. | |
| **Post-condition:**  The user can go back to the main menu with the password updated. | |
| **Acceptance Criteria:**   1. If the entered current password is incorrect, the system will let the user retype the password. 2. If the confirmed new password does not match with the new password, the system will let the user retype the new password. | |
| **User Story #3:** The user is able to access the inventory section. | |
| **Estimate (Days):** | **Priority:** |
| **Pre-condition:** The user is logged into the system and has selected the inventory option. | |
| **Scenario:**   1. The user selects the inventory option from the main menu. 2. The system will display the inventory section along with inventory options and the inventory list. | |
| **Post-condition:**  The user will be able to choose the add, delete and modify inventory options from the inventory section. | |
|  | |
| **User Story #4:**  The user is able to add an item/s into the inventory list. | |
| **Estimate (Days):** | **Estimate (Days):** |
| **Pre-condition:** The user has accessed the inventory section. | |
| **Scenario:**   1. The user accesses the inventory section. 2. The user selects the Add Item option. 3. The user enters the name of the item and quantity to be added in the inventory. | |
| **Post-condition:**  The system saves and appends the new item to the inventory and goes back to the inventory section. | |
| **Acceptance Criteria:**   1. If no name is inputted for the name and the user gives the signal to proceed, the user will be alerted by the system. 2. If no amount is inputted for the quantity and the user gives the signal to proceed, the user will be alerted by the system. | |

|  |  |
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| **User Story #5:**  The user is able to remove an item/s from the inventory list. | |
| **Estimate (Days):** | **Estimate (Days):** |
| **Pre-condition:** The user has accessed the inventory section. | |
| **Scenario:**   1. The user accesses the inventory section. 2. The user selects the Remove Item option. 3. The user selects the item to be deleted. 4. The user gives signal to the system to proceed. | |
| **Post-condition:**  The system saves and removes the item from the inventory and goes back to the inventory section. | |
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| --- | --- |
| **User Story #6:**  The user is able to modify an item/s in the inventory list. | |
| **Estimate (Days):** | **Estimate (Days):** |
| **Pre-condition:** The user has accessed the inventory section. | |
| **Scenario:**   1. The user accesses the inventory section. 2. The user selects the Modify Item option. 3. The user selects the item to be modified. 4. The user enters the new details of the item. 5. The user gives signal to the system to proceed. | |
| **Post-condition:**  The system saves with the new details of the item from the inventory and goes back to the inventory section. | |
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| --- | --- |
| **User Story #7:**  The user is able to access the orders section. | |
| **Estimate (Days):** | **Estimate (Days):** |
| **Pre-condition:** The user is logged into the system and has selected the orders option. | |
| **Scenario:**   1. The user selects the orders option from the main menu. 2. The system will display the orders section along with order options and the order list. | |
| **Post-condition:**  The user will be able to choose the add, delete and modify order options from the order section. | |
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| **User Story #8:**  The user is able to add an order/s into the order list. | |
| **Estimate (Days):** |  |
| **Pre-condition:** The user has accessed the order section. | |
| **Scenario:**   1. The user accesses the order section. 2. The user selects the Add Order option. 3. The user selects the type of order whether it is made-to-order, embroidery or alteration. 4. The user inputs the name of the client and chooses the type of garment. (Made-to-Order/Alteration) 5. The user inputs the measurements into their respective fields. (Made-to-Order/Alteration) 6. The user inputs the quantity of the order. 7. The user gives signal to the system to proceed. | |
| **Post-condition:**  The system saves and appends the new order to the order list and goes back to the order section. | |
| **Acceptance Criteria:**   1. If no name is inputted for the client name and the user gives the signal to proceed, the user will be alerted by the system. 2. If no measurement is inputted for the fields of measurement for made-to-order and alteration orders, and the user gives the signal to proceed, the user will be alerted by the system. 3. If no quantity is inputted, the user will be alerted by the system. | |

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| **User Story #9:**  The user is able to remove an order/s from the order list. | |
| **Estimate (Days):** | **Estimate (Days):** |
| **Pre-condition:** The user has accessed the order section. | |
| **Scenario:**   1. The user accesses the order section. 2. The user selects the Remove Order option. 3. The user selects the order to be deleted. 4. The user gives signal to the system to proceed. | |
| **Post-condition:**  The system saves and removes the order from the order list and goes back to the order section. | |
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| **User Story #10:**  The user is able to modify an order/s in the order list. | |
| **Estimate (Days):** | **Estimate (Days):** |
| **Pre-condition:** The user has accessed the order section. | |
| **Scenario:**   1. The user accesses the order section. 2. The user selects the Modify Order option. 3. The user selects the order to be modified. 4. The user enters the new details of the order. 5. The user gives signal to the system to proceed. | |
| **Post-condition:**  The system saves with the new details of the order from the order list and goes back to the order section. | |
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| **User Story #11:**  The user is able to change the status of an order/s. | |
| **Estimate (Days):** | **Estimate (Days):** |
| **Pre-condition:** The user has accessed the order section. | |
| **Scenario:**   1. The user accesses the order section. 2. The user selects the an order. 3. The user selects if order has been paid in full or paid with remaining balance. 4. The user enters the remaining balance. (Paid w/ balance) 5. The user gives signal to the system to proceed. | |
| **Post-condition:**  The system changes the status of the order and goes back to the order section. | |
|  | |

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| --- | --- |
| **User Story #12:**  The user is able to view the filtered order list. | |
| **Estimate (Days):** | **Estimate (Days):** |
| **Pre-condition:** The user has accessed the order section. | |
| **Scenario:**   1. The user accesses the order section. 2. The user selects the Filter option. 3. The system sorts out the list starting from the orders whose status is paid with balance. | |
| **Post-condition:**  The system goes back to the order section with the filtered order list. | |
|  | |

**Appendix A – Improved Business Process**



*Figure A-1. Improved Retail Tailoring Business Process*

With our software, the supervisor can now have a digital copy of the job orders for the alterations. This would make it easier for her to maintain and check the orders they are currently handling. The order submission would also contain the details of the job, the person handling the job and its payment status, so could it be easily tracked.



*Figure A-2. Improved Made to Order Business Process*

The software would allow the general manager to enter the measurements to a pre-made form showing pre-existing fields that are needed for the specific garment order. The measurements, together with the order specifics would be now entered into the system for easier tracking.



*Figure A-3. Improved Embroidery Business Process*

The software would allow the general manager to log the order into the system along with its order details, so that it would be easier to track.

Overall, this software would help make the three business processes be more efficient in terms of keeping track of the orders they are processing. This software would also help them keep track of their inventory, in order to lessen the possible delay caused by supplies being out of stock. The business would be easier to manage with this software, which is important for a business this small, with an employee count of fewer than 30.

**Appendix B – Interview Transcript**

Interview with the Client (Management Trainee)

[I] – Interviewer [C] – Client

I – Hi! Good Afternoon! I’m Naomi Portales, a second year Computer Science student from De La Salle University. Thank you for agreeing to meet up for this interview.

C – You’re welcome.

I - As a requirement for one of our subjects, my group mates and I are required to develop a software that would cater to the client’s needs.

C – Well that’s good.

I – Yeah. Hahaha. Well for today, I would like to know more about the processes that happen within your business and possibly help you identify problems and difficulties that you encounter.

C – Okay, g.

I – So let’s start with the easy questions. Can you introduce yourself and tell us what you do in the company?

C – Alright. I'm Fredkyle Celestra, acting as management trainee/assistant directly under the supervision of the General Manager.

I – Oh that’s cool. Can you describe your experience while working in the family business?

C – Working in the business is not an easy thing to do since I'm still familiarizing myself in the different aspects of the enterprise.

I – What does your business currently offer?

C – We currently offer tailoring services and computerized embroidery like patches and logos for schools and hospitals.

I – Would you mind telling me the how an order is processed in your business?

C – Well for our tailoring services, a customer usually goes into the shop with an order in mind, either getting a garment made from scratch or getting something repaired, then we name the price, the customer pays and leaves with a job order receipt. Then customer then goes back to pick up the item on the date specified.

I – That’s great. How do you take note of the orders and pick-up dates?

C – Currently, we just take note of everything on paper.

I – What happens when the customer loses this receipt?

C - We have a paper copy of the receipt that we give to the tailor and we also have a notebook where we list down all of the orders, so that we’re sure that everything’s being noted. But in my opinion, this takes up too much time.

I – Knowing this issue, have you ever tried using another method of taking note of orders?

C – Nope. Kahit nga excel di kami gumagamit eh.

I – Alright. On a normal day, how many items are processed by your tailoring shop?

C – Around 40-50 during peak season. Pero conservatively, around 40.

I – Knowing that you get significantly more orders during peak season, are there times where you tend to overlook an order and forget about it?

C – Yeah, minsan, kaya nadedelay. But tumatawag naman yung customers kaya naalala.

I – That’s good. How about the Computerized Embroidery part of the business, how does the typical order processed?

C – Well, a client places an order then discusses the order specifics, like the size, design and quantity. Then they settle the price. Once they agree upon a price, a down payment is needed before a receipt is released. Once they receive the partial payment, production starts. Then depending on what they agreed upon, the items are picked-up from the warehouse or delivered to the client.

I – Who handles bulk orders like that?

C – The supervisor usually takes the orders, but it’s the General Manager that communicates and negotiates with the client.

I – Are there any more processes that take place in the business?

C – Well, the actual production of the item or garment is a process.

I – How so?

C - Before we start producing, we get the order details first, like the quantity and design. Based on that information, we determine the supplies needed for the job and check if the supplies are available. Then we assign work to the workers and set a deadline.

I – Oh okay. Who assigns the work?

C - The General Manager.

I - You mentioned your supply inventory earlier, how do you manage your supplies?

C – Well, we have a written list. Kaso ang problema lang dun, mabagal tapos ang hirap i-update.

I – Oo nga, kasi mapupuno ng bura yung listahan.

C – Yun na nga. Hahaha.

I – Thank you for your time Mr. Celestra. Now I have a better understanding of your business processes. If my groupmates and I have any further questions, how can we contact you?

C – Feel free to text me if you need anything more, since you already know my number.

I – Once again, thank you for your help!

C – No worries. Thank you too!

**Appendix C – Sample Forms and Reports**

*C-1. Measurement Form*

The Measurement form is filled up for a made to order item is requested. This form would contain the fields that would determine the basic information about the customer and their measurements. The measurement fields that would be filled up depends on the type of garment being requested as explained below.

Description: C:\Users\Naomi Portales\Downloads\10877909_10202349603860203_550454664_n.jpg

The fields to be filled out for men’s tops (coat, polo, barong, blazer long, blazer short, vest) are the following:

1. Length (Upper Body)

2. Shoulder

3. Arm Length

4. Wrist Circumference

5. Armhole

6. Chest/Bust (Front Chest/Back Chest)

7. Waist

8. Hips

9. Neck Deep

The same follows for women’s tops (coat, polo, barong, blazer long, blazer short, vest, blouse), but there are some additional fields to be filled out.

1. Front Figure

2. Bust Point

3. Bust Distance

4. Back Figure

For bottoms (pants, skirt) the following fields are filled out for both men and women.

1. Length (Lower Body)
2. Waist
3. Hips
4. Thigh
5. Knee
6. Buttom
7. Crotch

For full body garments ()

*C-2. Tailoring Shop Log Book*

This is the logbook where all the orders are taken note of. This contains the garments to be mended, quantity, price, the tailor assigned to do the job, and if it was paid for already or not. This is handled by the supervisor of the tailoring shop or the general manager, if present.

Description: C:\Users\Naomi Portales\Downloads\10952009_10202349603900204_1436435580_n.jpg

The logbook follows the format seen below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name of Customer | Number of Garments | Type of Garment | Price | Paid |

The name of the customer is taken down, along with the type and quantity of the garment. The price is written underneath the column of the tailor that is handling the job. For the paid column, this would determine if the order is already paid for or if there is a remaining balance. If the customer name is has a check mark on it, it means that the order has already been claimed. As seen above, there are some values that are encircled. These encircled values mean that these orders are still not paid for.

*C-3. Standard Pricing List for Made to Order Garments*

Below is the standard pricing used by the tailoring shop:

|  |  |  |
| --- | --- | --- |
|  | **Labor and Materials** | **Labor Only** |
| **Doctor's Gowns and Blazers** |  |  |
| **Short Sleeve** | 1200 | 500 |
| **Long Sleeve** | 1300 | 500 |
| **Smock Gown** | 1500 | 600 |
|  |  |  |
| **Corporate Blazers** |  |  |
| **Katrina w/o Lining** | 700 | 500 |
| **Wool Armani S,M,L** | 1200 |  |
|  |  |  |
| **Barong** |  |  |
| **Jusi w/o Lining** | 1500 | 800 |
| **Pina with Lining** | 3000 | 1500 |
| **Gusot Mayaman** |  |  |
| **Short** | 900 | 500 |
| **Long** | 1200 | 600 |
| **Soft & Smooth** |  |  |
| **Short** | 700 | 500 |
| **Long** | 900 | 600 |
|  |  |  |
| **Scrub Suits** |  |  |
| **La Coste** | 800 | 450 |
| **Katrina** | 600 |  |
|  |  |  |
| **Medical/School Uniforms (US Klopman)** | |  |
| **Blouse & Pants S,M,L** | 900 | 700 |
| **Blouse & Skirt** | 800 | 550 |
| **Polo & Pants S,M,L** | 900 | 700 |

**Appendix D – References and Acknowledgement**

Mr. Fred Celestra, General Manager

Mrs. Beth Celestra, General Manager

Mr. Fredkyle Celestra, Management Trainee