New System Requirements

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Cover Letter

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E-Cleaners Incorporated
4526 Richmond Ave
Scarborough, ON

Re: New System Requirements

Dear Mr and Mrs Smith

     In this report we made use of the data, planning and resources we gained through the previous analysis to create the scope for a new system that will shape your company. It provides an insight of the new system and its scope and details the processes of the new system. In creating this report, we addressed the major issues of your current system including manual account and record keeping. Our team spent a considerable time to meticulously plan the new system and its process to design a business plan that is efficient, convenient and sustainable.

     This report also targets solutions that will increase the overall business by increasing the customer flow and leads the company to sustainable one in the near future. Looking forward to hear from you soon.

Sincerely,

The iTech Consultants.

Executive Summary

In this report, issues mentioned in the previous submission are covered. We have created Use Case Diagrams/Narratives, Context Diagrams and Domain Class diagrams that depicts the changes to be made to the system and that will lead the company to be a more successful one. The proposals are as follows:

Accounting Software:

We first addressed the inefficiency of a manual accounting system, that possesses a high risk of inaccuracies in the system that can be caused by human errors which leaves the business unable to keep track of the expenses and profits. This new system, implements an accounting software that simplifies the data entry, saves a huge amount of time over manual bookkeeping, stores invoices and bills efficiently and makes it easy to retrieve data and find errors and reduces the chances of errors in accounting. An accounting software records and processes accounting transactions, functioning as an accounting information system. This will help in keeping track of the sales.

Electronic document management system software:

Another major issue addressed was the inefficiency of manual record keeping, where the files and records take up a lot of space and are at a risk of being lost, damaged or misplaced, also making it hard to make changes and systematically organize the data. This new system implements an electronic document management system software, that manages the creation, storage and control of documents electronically and primarily the electronic information within the business. This will reduce storage space and improve security. It will also make it easier to retrieve required data and creates a better backup.

Ordering system:

The business has a major drawback in terms of convenience and customer satisfaction with total absence of door-to-door pick up/delivery service. This system implements the use of a web app, where the customers can place an order that will instantly send a notification to the company, who can send an employee to pick up the laundry. The customer is then notified of the delivery time and the washed clothes are delivered at their door. This web-app also makes it possible to pay online, again increasing the overall convenience of the system.

Introduction

The report depicts the major changes to the system in a concise manner in the form of use case diagrams, context diagram and domain class diagram. With the implementation of the new system, the business will witness a transformation with an increased flow of customers due to the increased convenience of the new system. The business will no longer find it hard to keep track of the sales and expenses and keep track of customer records. The business will also witness an increased revenue with the implementation of the E-ordering system as more business will flow in with the increased convenience created by door-to-door pickup/delivery services.

New System Scope

Mission: To implement changes to the current system that will increase the efficiency and convenience of the whole business leading to increased business and revenue, leading the company to a more sustainable one.

Goals: Increase revenue and customer flow, Increase the accuracy and efficiency of account keeping and record keeping.

CHANGES IMPLEMENTED IN THE NEW SYSTEM:

Accounting Software

- Improves the Simplicity of data entry
- Saves a huge amount of time over manual bookkeeping
- Increases speed in generating an invoice
- Stores invoices and bills efficiently and easy to retrieve
- Reduces the chances of errors in accounting and easier to find errors
  Helps in keeping track of the sales, income, expenses, debts or the sales by volume and by clients (which is important to the E-cleaners) and also the overall profitability of the business
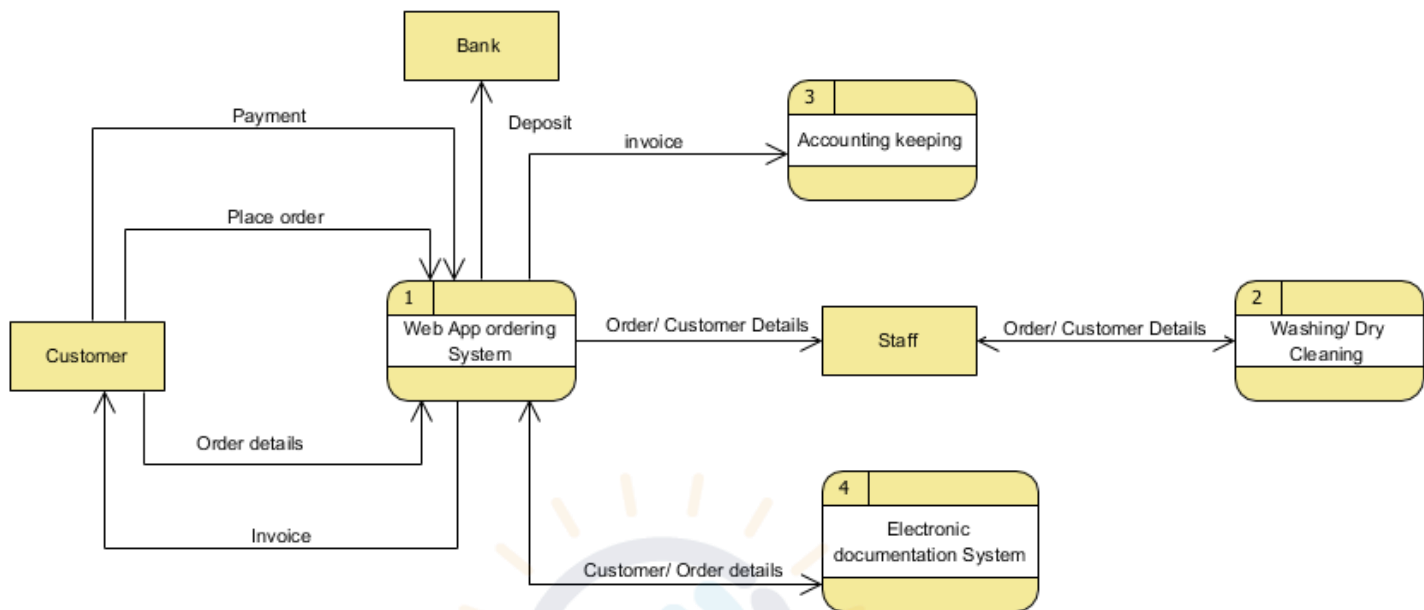
Electronic document management system software

- Reduces the storage space.
- Improves security
- Easier retrieval of required data
- Better backup and recovery of data

Online ordering system and door-to-door delivery/pick up services

- Increased business and revenue
- Increased convenience
- Virtually accurate invoice generation

Context Diagram

Ordering System:

It manages customer orders, invoices and payments. It manages transaction with the bank and sends invoice details to the account keeping system and customer details to the electronic documentation system.

Electronic Documentation System:

It receives the customer and order details from the ordering system and manages customer account. It keeps record of previous orders made by the customer.
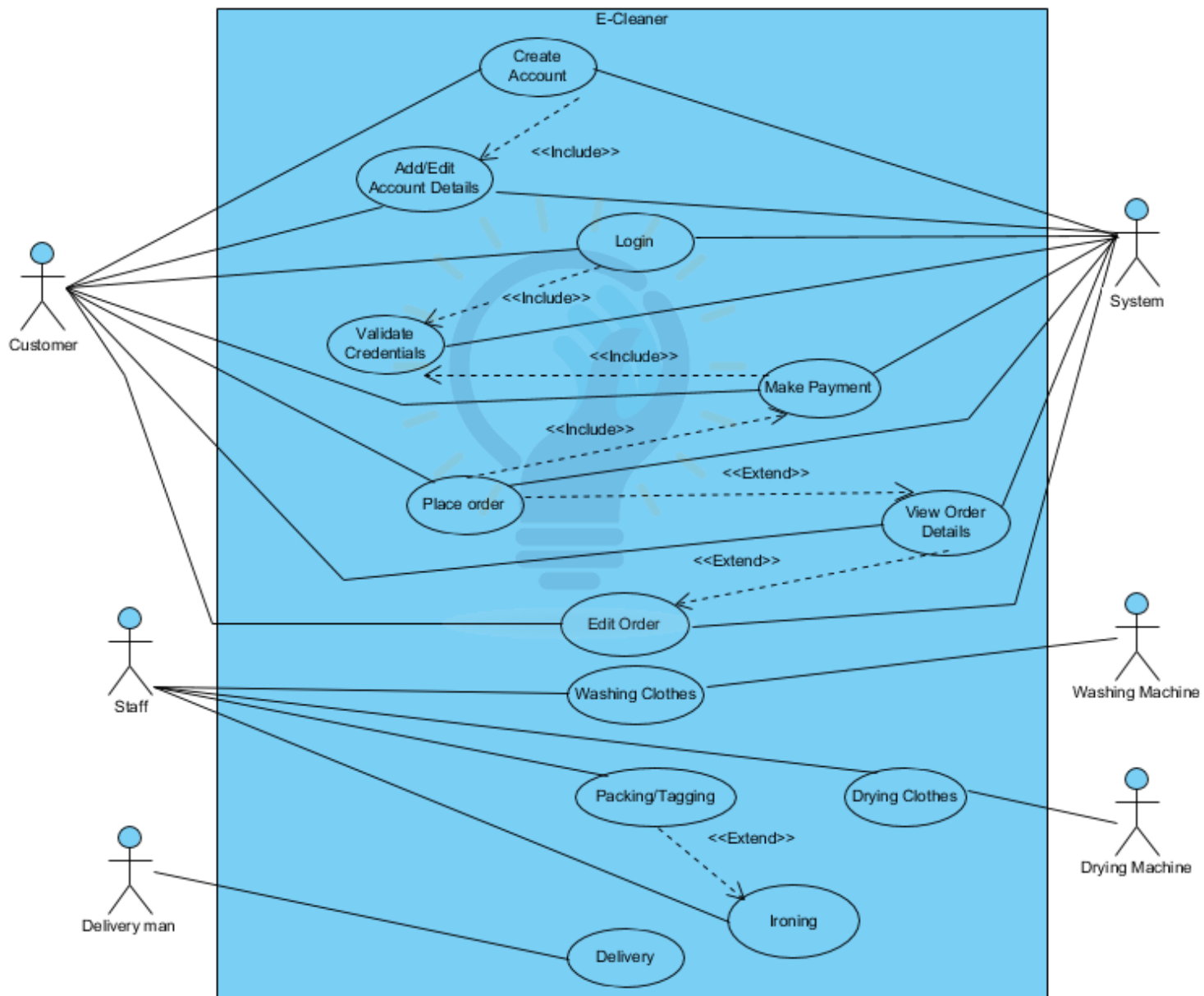
Accounting keeping system:

It receives the invoice and payment details from the ordering system and keeps track of the cash flow of the business.

Washing/ Dry cleaning:

It receives the customer and order details and forwards the laundry for the actual cleaning.

Use Case Diagram & Narratives

USE CASE DIAGRAM

1. Create an online account

Scenario	Creating an online account	
Triggering Event	Customer does not have an account and wants to create one, which is a prerequisite to place an order	
Brief Description	Customer loads the company wed site and creates an account using valid credentials.	
Actors	Customer, web-app (system)	
Related Use Case	Verify email, add account details	
Pre-Condition	Valid email, Internet access, other credentials (phone number)	
Post-Condition	If successful, an online account is created and the customer is eligible to place an order	
Flow of Events	**Actor**	**System**
	1. Loads the company website and surf to the sign-up page. 2. Fill the sign-up form that includes identification details and a valid email, and username and password of customer's choice. 3. The user enters the activation code 4. Log in using the credentials *(use case – Log in)*	2.1 Verify the email and phone number entered by the user by sending an activation code and requests the user to enter it. 3.1 Verifies the entered activation code and send a confirmation message to the customer email and phone and updates the database.
Exceptions	2.1 Credentials not validated 1.1 Loss of internet access 1.1 Site under maintenance 1.1 Time out error by internet Brower 3.1 Connection with database is lost 1.1 Server down	

2. Log-in

Scenario	Customer wants to login to the existing account
Triggering Event	Customer wants to place an order or make changes to the account.
Brief Description	Customer logs in to the account using credentials, username and password
Actors	Customer, System
Related Use Case	Validate credentials, create order, cancel order
Pre-Condition	Should have an account, internet access
Post-Condition	If successful, the customer is logged in to the account.

Flow of Events	**Actor**	**System**
	1. Customer loads the website to log in 2. Enter the username and password	1.1 requests for user name and password 2.1 verify the credentials and authenticate the user 2.2 displays the account home page
Exceptions	1.1 loss of internet access anytime between 1 to 2 2.1 credentials not validated 2.1 account does not exist *(use case – create an account)* 2.1 User forgets username/password and wants to change any *(Use case – change username or password)*	

3. Place an order

Scenario	Customer wants to place an order
Triggering Event	Dirty clothes that needs to be cleaned
Brief Description	Customer logs in to the account and place an order
Actors	Customer, System
Related Use Case	Make payment, view order details
Pre-Condition	Internet Access, customer should be logged in
Post-Condition	If successful, an order is placed and a pick-up time is set
Flow of Events	**Actor**	**System**
	1. Customer surf to the 'place an order' web page and fills the form, that includes the order details like the number and material of clothes and chooses the service required. 2. Confirms the address or makes appropriate edit. 3. Verifies the pick-up time, if not step 2 of system is repeated with a different time. 4. Customer enters card details	1.1 Verifies if the service is available for the entered type of materials. If yes, request the user to verify the address of pickup. 3.1 Set up the pick-up time and requests for confirmation. 3.1 Generates invoice and requests for payment. 4.1 Verifies the card details and processes the transaction. 4.2 Sends the confirmation message to customer's email and/or phone and notifies the pick-up/delivery employee.
Exceptions	1.1 loss of internet access/ failure to load the page/ server busy, anytime between 1 to 4. 2.1 Address not found error 4.1 payment not successful due to bad-credit verification.

4. Washing Clothes

Scenario	Washing clothes	
Triggering Event	Dirty clothes need to be washed	
Brief Description	The clothes to be cleaned are washed in the machine	
Actors	Staff, washing machine	
Related Use Case	Dry clothes, sort and fold clothes	
Pre-Condition	Presence of a working washing machine	
Post-Condition	If successful, the clothes are cleaned and ready to be dried	
Flow of Events	**Actor**	**System**
	1. Put the clothes in the machine. 2. Add detergent 3. Set the temperature, water level, size and mode. 4. Start the machine 5. Take out the clothes to proceed it to the drying machine	1. Fill the drum with water 2. Rinse and complete the wash cycle 3. Drain and fill the fresh water 4. Repeat 2 and 3 as per the mode selected by the user. 5. Perform the final spin to drain excess water off the clothes. 6. Stop the machine and buzz notification.
Exceptions	1. Machine can stop working due to mechanical issue anytime between 1 and 5 2. No detergent available in step 2. 3. The machine is stopped in between by the staff anytime between 1 and 5. 4. Power-cut anytime between 1 and 5	

5. Drying Clothes

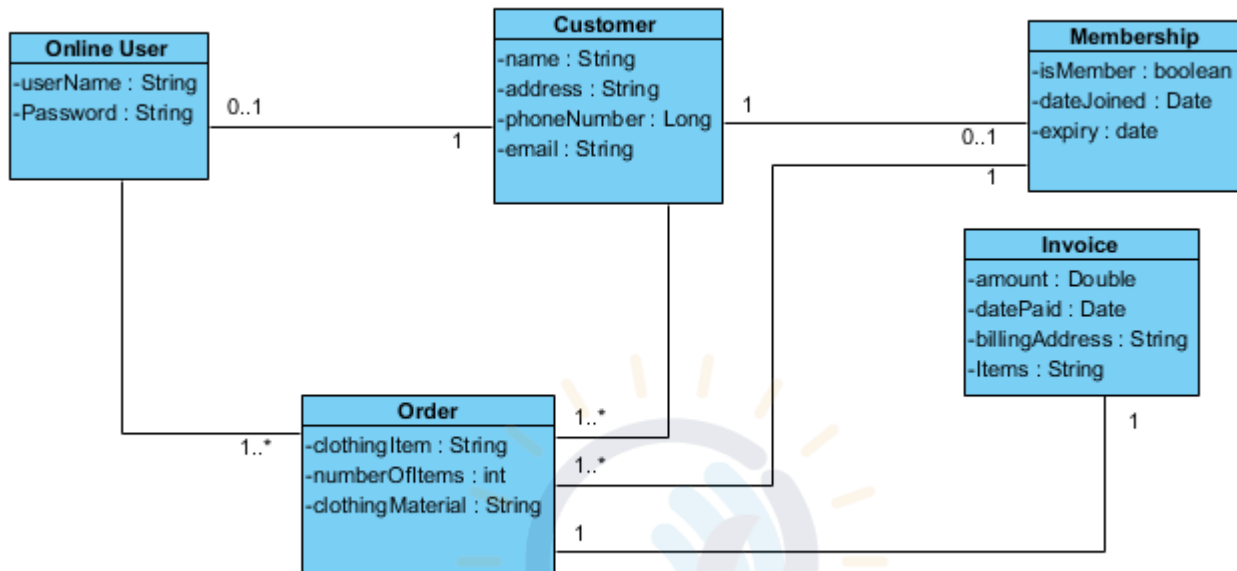| Scenario	Drying washed clothes	
Triggering Event	Washed/cleaned clothes to be dried	
Brief Description	Washed clothes are dried using a drying machine	
Actors	Staff, drying machine	
Related Use Case	Fold clothes	
Pre-Condition	Presence of washed clothes, presence of a working drying machine	
Post-Condition	If successful, the clothes are dried and ready to be sorted and folded	
Flow of Events	**Actor** 1. Puts the clothes in the drying machine 2. Selects the temperature and time 3. Starts the machine.	**System** 1. Completes the cycle according the time set by the actor. 2. Stops the machine
Exceptions	1. Machine can stop working anytime between 1 to 3 as a result of mechanical issue 2. Power-cut anytime between 1 to 3 3. Staff stops the machine in between anytime between 1 to 3	

6. Sorting/ folding Clothes

Scenario	Sorting and folding the dried the clothes
Triggering Event	Dried clothes that needs to be folded
Brief Description	The clothes that are dried are sorted, folded, packed and tagged for delivery
Actors	Staff
Related Use Case	Delivery
Pre-Condition	Presence of dried clothes, staff availability
Post-Condition	If successful, the clothes are neatly folded and packed to be delivered.
Flow of Events	**Actor**	**System**
	1. Sorts the clothes based on size and material 2. Folds the clothes 3. Pack in appropriate plastic bags 4. Tags the bags with customer details 5. Forwards to the delivery man	
Exceptions	1.1 Clothes were not dried properly and needs to be dried again *(use case – dry clothes)* 4.1 Customer details missing 5.1 Delivery man is not available	

7. Delivery

Scenario	Delivering washed, dried and folded clothes
Triggering Event	Clean, folded and tagged clothes to be delivered
Brief Description	The clothes that are cleaned, packed and tagged are delivered to the address provided by the customer at the time of placing the order
Actors	Delivery man
Related Use Case	
Pre-Condition	Presence of tagged bags with cleaned clothes, availability of delivery man, presence of a delivery van
Post-Condition	If successful, the clothes are delivered at the address provided by the customer.

Flow of Events	Actor	System
	1. Picks up the bag 2. Loads the delivery van with bags to be delivered 3. Navigate the destination 4. Drives to the address and delivers the bag.	
Exceptions	1.1 Tag with the address details is missing 4.1 Van runs out of gas or breaks down due to mechanical issue	

Domain Class Diagram

Online User
-userName : String
-Password : String

Customer
-name : String
-address : String
-phoneNumber : Long
-email : String

Membership
-isMember : boolean
-dateJoined : Date
-expiry : date

Invoice
-amount : Double
-datePaid : Date
-billingAddress : String
-Items : String

Order
-clothingItem : String
-numberOfItems : int
-clothingMaterial : String

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Recommendations

The inefficiency of the current manual system is a hindrance to the business growth with its many weaknesses as mentioned in the previous report.

To resolve this and to lead your company to a more productive and an efficient business, we propose the implementation of an accounting software, an electronic documentation system and a web app, which will help you achieve the following:

- Increased efficiency.
- More accurate, simple and less time-consuming account keeping.
- Shortened invoice generating time
- Easier access of data
- Simpler and easier modification of data
- Increased security of data
- Ability to keep track of profits and expenses.
- Increase work efficiency and productivity