

Sri Lanka Institute of Information Technology

Management System for Union Pharmaceuticals

Project Proposal

Information Technology Project (IT 2080)

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Submitted by:

1. IT20617332 - Siriwardana M. G. G. K. H.
2. IT20606756 - Senanayake P. M.
3. IT20616588 - Amaraweera O. G.
4. IT20606510 - Perera L. K. R.
5. IT20622596 - Weerasinghe R. B.
6. IT20624408 - Indralal K. A. P.
7. IT20613754 - Dissanayake K. D. M. P. A.
8. IT20659912 - Sanjana D. P. K.

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**1. Introduction**

This is about developing an online automated platform for a pharmaceutical store according to the requests made by a client.

The criteria for the proposed system and what are the expectations of the client have been identified properly and taken in to action when developing the system with adequate functionalities.

**2. Company/Client Background**

Union pharmaceuticals is a well-established pharmaceutical store in down south. It is led by a team of professional pharmacists, and it has been keeping up it’s excellent service for the customers for more than a decade. High quality drugs and other pharmaceutical items have been sold out on a reasonable price from the Union pharmaceuticals. So that, the customers have always kept a good faith on its products and services.

Currently the pharmaceutical store carries out it’s operations manually and it has been like this from earlier days. The main functions taking place in the system which are conducted by manual operations are order taking, drug issuing, stock maintenance, employee management, transaction processing, etc.

**3.** **Problem Statement and Difficulties**

With the gradual expansion of its operational activities, it has been a challenging time for Union pharmaceuticals, because of it’s manually driven procedures. Also with the prevailing covid situation, customers are more likely to make their orders without any physical contact.

The client expects to avoid the current difficulties faced by the Union pharmaceuticals with the help of their newly proposed automated online platform.

The major issue identified in the current system by the client is, the absence of a proper way to take order from it’s customers. Sometimes the order misplacing, wrong order packages being sent to wrong customers are caused by this. So the customer complaints have also been increasing gradually, thus causing a bad reputation for the store.

The stocks of the store are maintained by paperwork. So, there are some instances where the most important records about drug lots are being unable to find due to misplacing. Also when matching the sold out quantities and bought up quantities from the suppliers, they are not tallying with each other. The client has also identified this as a major weakness of this system. When purchasing goods from the pharmacy, this most of rush hours, the customer have to wait in long queues. This has led the customers to choose other nearby stores to get their merchandize. So, the managing of time is also a key point. The client want to avoid this time wastage problem of the customers by make the system more efficient.

The supplier is also a valuable asset for the entity. To enhance the communication and maintain proper dealership with the suppliers, the system has been expected to set up with a good supplier reaching functionality.

The monetary transactions of the entity has also expected to initiate in a properly monitored process, allowing customers to transfer their payments in a more reliable way. This is because, the client has identified the payments made by the customers are sometimes not getting recorded properly in the system. And it severely affects the financial strength of the store.

The staff handling also has been a highly labour enforced task in the pharmaceutical store. To make it simpler and easier the client has identified that, it also should be a major component of the proposed system which are from implemented.

**4.** **Solution to the Problem**

The problems presented by the client are then well analyzed and remedies are being identified to each problem. The development of an advanced web based application with most important functionalities for the management of the pharmacy is carried out to implement these tasks.

The perfect database which include all the relevant information, without any unnecessary piled up data lots is ideal for this solution. So, the data can be easily feed up to the system and retrieved without any delay.

Assigning specially identified functionalities over the operations take place in the system enhances it’s reliability and efficiency. It clearly addresses what the customer need and quickly redirects it to him. So he has nothing to worry furthermore.

Validation for the system are built in order to make sure the data are entered to the system more accurately by the relevant personnel. The environment is also made secured here, such that no any unrelated outside party can access and rob customer privacy related information.

The searching functions are also set with precise suggestions likewise no any difficulty is being faced by the customers when accessing the web based application to get their service.

The ideal solutions are very well presented in the perfectly designed user friendly interface, thus making it easy for the client. When adding more to that users have also given the chance to generate reports on some of the functionality of the system, to make them more satisfied about their interaction with the system.

**5. Benefits of the Proposed System**

The system which is to be launched is enriched with many benefits which are valuable for customers as well as the client. The functionality of the system is very efficient as it responds very quickly to each and every demand of the customer due to its web based approach.

The system can be accessed at any time from any place without any region or time restriction. This is what the user expects from the system. Also the interfaces with which the user interacts are made friendlier, so that he is attracted and get used to it very quickly.

The resource wastage is kept up to minimum levels and time wastage is also low. The system can be maintained with a less effort, but the resulting outcome has a productivity which is beyond the imagination of both parties.

The following sub system functionalities are the reasons behind why these benefits are being made and clearly implemented.

1. Customer management system

2. Order management system

3. Delivery management system

4. Showcase management system

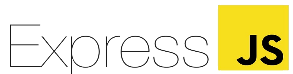
5. Inventory management system

6. Supplier management system

7. Employee management system

8. Feedback and inquiry handling system

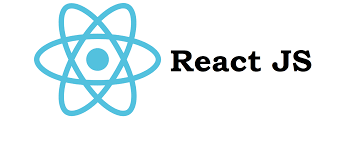
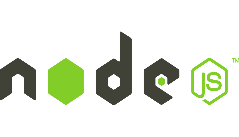
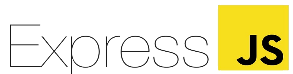
**6. System Overview**

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Application Programming interface

Express js as back end

Mongo DB as database

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Mongo DB as database

Express js as

Back end

Application Programming interface

JavaScript Web

Server

React js as front end

**7. System Functions**

**7.1 Customer Management**

A customer can register with an account and get logged in to the system. Then he can view the store showcase and decide which drug items he need to purchase. After that, those items are added to the cart. Thereafter, the personal details form is filled with his details. That includes person's name, mobile number, delivery address, symptoms, online payment details, etc. Then he can confirm the order.

After order confirmation customer can generate a summary report of the order placed if necessary. One can view the placed order after making order, where he can update the item quantities and delete the items in the order in the way he need. Previously made orders can be searched by the customer in order to get their details early. The major beneficial act of this is that the customer can effectively choose what he wants and go through the store system without any interruption.

**7.2 Order Management**

In this function, order manager can retrieve all the order details which are placed by customers and check the order content.

Here, the order manager checks whether the medication requested by the customer matches with the symptoms he stated. Then the order manager update the status and the customer can also view the status and can know about whether his order is accepted or not. The discarded orders can be deleted from the database and while accepted orders are going to be arranged. Then the order manager enter the details of orders to the database which are already arranged. In this function order manager can search and get orders according to the date. And also he can generate the report about the orders accepted. By using this function, we can reduce the complications by analyzing the order in a proper manner and in current covid situation, the pharmacy can deliver medicines in a way that minimizes the health effects.

**7.3 Delivery Management**

This function is mainly used by delivery manager and deliverers of the system. Delivery management is primarily about delivering orders to customers and managing the process until it reaches to the customer.

Once the order manager has confirmed the orders, delivery manager can view orders list. Then delivery manager can search and get upcoming orders which are to be delivered by giving a date. After viewing forthcoming orders delivery manager may assign a respective deliverer to place the order. Thereby delivery manager can create a delivery note which can be viewed by the deliverer. If there is any issue with the delivery, delivery manager can update delivery note when needed and it can be also viewed by the deliverer. Then after the delivery is done and when delivery is confirmed by the deliverer, delivery manager can re-updated the delivery note as completed delivery. Also delivery manager can delete unwanted old distribution records when needed and at end of the day delivery manager can generate the report on the orders delivered to customers.

As mentioned above, we have used this function to facilitate this supply process and to build good customer faith on the pharmacy.

**7.4 Showcase Management**

Showcase management function is created for managing all the drug details in the showcase that are visible to the customers. When inventory manager acquires new stock of drugs, showcase manager has to add those drugs in to the showcase as well as to the system. When adding newly acquired drugs, showcase manager must provide following details.

* Drug\_id
* Drug\_name
* Quantity
* Expired\_date

In here, retrieving drug details by using drug\_id, updating the restocking of the drugs according to the quantity of the drugs can be done. And also if there is any valid reason showcase manager can delete the drug details from the system. The major advantage is that the customer can precisely look for the drug he wants and place the order more conveniently by this.

**7.5** **Inventory Management**

In any kind of company, there should be a well managed stock to keep all the items that is sold under the company. Specially, when it comes to having few branches under the same company. The person incharge of the inventory, should handle all the items that send to other branches and such.

As the inventory manager in the main branch, he can view the reports about the drugs which are about to be expired soon which are send by other branches. Then he get notified by these reports about the drugs and their condition. Then he can delete these drugs from the system if he ever needs to.

Inventory manager receive list of drugs that come to the stocks from the supplier manager. Then he can update newly acquired drug quantities and he can insert new drugs to the system which were not in the system before.

Inventory manager check the system and generates a report about the drugs when they are running low on stocks and send it to the supplier manager. He can also search a specific date in the system and he can get the list of drugs which arrived in a respective day.

**7.6 Supplier Management**

This function is used by supplier manager of the pharmacy. It includes managing supplier details and coordinating between inventory and supplier parties.

By using this system, supplier manager can add new suppliers to the system database, update or remove their details when needed. Also, supplier manager can view inventory report about running out drugs/medicines, create invoices for each supplier who supplies the respective drugs, update inventory about the status of stock orders after communicating with suppliers, inform inventory when a stock order gets rejected or cancelled and generate a report stating list of stocks supplied by each supplier.

This functionality is helpful because maintaining supplier details manually is a tough task to do. And it helps with performing a proper invoice creating, status updating and generating reports without any mistakes being made.

**7.7 Employee Management**

An employee can login with an account registered in to the system. Then, employee can view his employee profile. After that employee can get an idea about his profile and his monthly salary details. Employee manager can go to the employee profiles. He can also create new employee accounts, update the employee details, delete the employee details and edit to the employee details. As well as previously paid salaries to the employees can be searched by the employee id in order to get their details early. Employee manager can get the OT hours and basic salary, calculated and add those amounts to the monthly salary. After that, employee manager can generate monthly salary report. It's very useful to pharmacy manager. By that, he can get the idea of a monthly salary payments for the employees. It results in higher accuracy in calculating the salary for the employees. Therefore, it's useful to pharmacy manager and employee manager both in multiple ways. Better financial management and easy to find details of an employee are the advantages of this. Other than that, his can be used for efficient work allocation for employees.

**7.8 Feedback and Inquiry Handling**

After customer is logged in to the system and purchase the items, he can view the feedback and inquiry form. If he wishes he can include his feedback or inquiry in the form. That form includes customer id, date, inquiry type or feedback etc. After filling the form he can submit it to the system. Then the manager views the forms forwarded by the customers and provide replies and solutions for their feedbacks and inquiries. If the manager needs to update replies with the progress or delete the solved inquiries, he needs to identify the relevant inquiry or feedback by searching the customer id.

After a month the manager has to generate a report on the statistical data of frequently made feedback types by the customers.

This is a powerful guide as we can identify customer issues and easily find the quick solutions for those issues which makes the customer satisfied about the store and to make effective business decisions.

**8. Technologies and Tools**

The technology used for developing the system is based on the MERN stack.

In MERN, MongoDB is a document oriented no-SQL database. It is very much flexible when handling.

Express.js is a Node.js back end framework used for this purpose.

React.js is the front end framework for the system.

Node.js is the premier javascript web server bundled up with this.

GitHub and Git are used ass tools for the project

GitHub is used to manage remote repository and Git is used for version control.

**9. Gantt Chart**

1. **Work Breakdown Structure**

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| --- | --- |
| **Name** | **Task** |
| IT20617332 Siriwardana M. G. G. K. H. | Customer management   * Registration and login * Make orders and confirm them * Generate order summary report * View placed order * Update item quantities from placed order * Delete item quantities from placed order * Search previous orders |
| IT20606756 Senanayake P. M. | Delivery Management   * View confirmed orders * Search upcoming orders * Assign orders to deliverers * Update delivery note * Delete distribution records * Generate daily report on orders delivered |
| IT20616588 Amaraweera O. G. | Inventory Management   * View report on drugs to be expired * Delete details of expired drugs * Update about newly acquired drug quantities * Add details about new drugs * Generate report on drugs running low on stocks * Search and get a list of drugs received on a specific date |
| IT20606510 Perera L. K. R. | Showcase Management   * Insert about newly acquired drugs and their details to the showcase * Search and view availability of drugs in the showcase * Update the restocking of drugs * Generate report on sold out drugs and drugs which are to be expired soon * Delete drugs which running out of stock from customer view panel |
| IT20622596 Weerasinghe R. B. | Feedback and Inquiry Handling   * Filling up feedback and inquiry forms by customer * View the forms forwarded and provide replies for them * Update the replies for feedbacks and inquiries and * Delete solved inquiries by searching customer id * Generate monthly report on statistical data of frequently made feedback types |
| IT20624408 Indralal K. A. P. | Order Management   * View all order details placed by customer * Check order content and approve or reject them * View the approved order list and prepared order list * Delete cancelled orders * Search and receive goods according to the date * Generate report on accepted orders |
| IT20613754 Dissanayake K. D. M. P. A. | Employee Management   * Create employee user accounts * Get OT hours and basic salary calculated and those amounts to monthly salary * Generate monthly salary report * Employee manager can delete and edit information on employee accounts * Search the employee details by employee id |
| IT20659912 Sanjana D. P. K. | Supplier Management   * View the inventory report * Create separate invoices for suppliers based on drugs * Update inventory status * If stock order get rejected, submit report to the inventory * To cancel orders delete the respective invoice * Generate monthly report on drug lots supplied * Search orders by date |