UNIVERSITI TEKNOLOGI MARA

PRACTICAL TRAINING REPORT

at

UiTM CAWANGAN PAHANG KAMPUS RAUB

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1. Introduction **3**
1.1 Background of Practical Training 3
1.2 Objectives of the Practical Training and Reports 5

2. Background of the Organization **6**
2.1 Introduction 6
2.2 Organization Chart 6
2.3 Objectives 7
2.4 Vision 7
2.5 Mission 7

3. Project Overview **8**
3.1 Current System Description 8
3.2 Selected System Visualization & Process 9
3.2.1 Admin Front Page 9

4. System Analysis And Design **13**
4.1.1 Current System Flowchart 13
4.1.2 Suggested Process Flowchart (Unit Kesihatan Staff) 14
4.1.3 Unit Kesihatan Entity Relationship Diagram 15
4.1.4 Unit Kesihatan Data Dictionary 15
4.1.5 Unit Kesihatan Data Flow Diagram 16
4.1.6 Unit Kesihatan Context Diagram 16
4.1.7 User Manual 16
4.2.1 System Scope 17
4.2.2 System Objective 18

5. Assessment Of Feasibility Study **19**
5.1 Functional Requirements 19
5.2 Non-functional Requirements 19

6. System's Findings & Evaluation **20**
6.1 The Strength of the System 20
6.2 The Weakness of the System 21

7. Conclusion **22**

8. References **23**

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1. Introduction

1.1 Background of Practical Training

Everyone must complete an internship in order to mature and prepare for their actual working experience. Many people see it as a burden, and some may even argue that it will prevent someone from finishing their academic studies because, as we all know, the internship period is quite lengthy. However, not many people are aware that gaining firsthand work experience will actually be beneficial when applied in a real-world workplace after graduation. Therefore, it is actually a good idea for us to put ourselves in another person's shoes for a while before we are exposed to actual situations.

As I begin my first six months as an intern in this department, I am aware of the tens of thousands of advantages I will receive. I can practice and implement new plugins and libraries by working on the assigned projects, making the final product appear more professional. Aside from that, certain javascript libraries, like REACT and AJAX, are required in today's industries because high-tech companies like Facebook and Google use their systems.

I can also learn how to properly prepare a report for systems documentation through this internship. This will ensure that the development of each system complies with the clients' specifications. For development purposes, both the clients' issues and the current manual procedure are being recorded. As a result of doing this, I will be able to locate and employ effective strategies for efficiently resolving the issue and developing a system that can be used by the selected client.

Despite this, I am able to identify and concentrate on improving the skills I have acquired over the years at my university. It was common knowledge that students in Science and Computer Science could take a number of different paths. From there, I could learn to improve my fundamental logical thinking skills and figure out what kind of IT student I am, whether I want to create games or websites.

Academic institutes can also benefit from this internship because they will be able to establish new connections with small industries and strengthen existing connections with industries that are consistently expanding. This will open up opportunities for Academic Institute to collaborate with these industries. Forums and

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expos can be held at these institutions as a result of these collaborations to instruct and assist the new generation of students who will one day be valuable assets for these industries.

Students who work as interns can use this opportunity to deepen their understanding of the subjects and, as a result, sharpen their knowledge to improve the industries' current state. The lessons that the university has taught are also applicable to certain industries. Without a fundamental understanding of information technology, it will be difficult for individuals who do not take their education seriously during academic sessions to solve these industrial issues.

Internships can also help students become more disciplined in their lives because most businesses today require all employees to adhere to a certain dress code and to arrive on time to ensure that staff productivity is always high. Students become more disciplined and punctual as a result of these requirements, which force them to follow the rule regardless of whether they like it or not. This will help the students get ready to be more defined members of the workforce when businesses let them go to work full-time.

Throughout my internship, I will respect the department's vision and mission and be willing to do anything for our clients as long as their goals are attainable and capable of being achieved. Including holidays, I will complete my internship in this department for approximately 27 weeks, as previously stated. When the company was looking to hire, one of the things that caught my attention the most was how inexpensive it was to work there compared to working in smaller cities like Kuala Lumpur. I was hired by this department to develop and fix outdated systems.

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1.2 Objectives of the Practical Training and Reports

There are some objectives that the academic institute desired to reach to ensure that these students will become refined and well-educated workers soon when they have graduated. The objectives of the Practical Training were divided into 2 different parts, It is the general objectives and specific objectives

The General Objectives of Practical Training are:-

1. Expose students to the real working environment,
2. Practicing the theory learned at university in making and solving the real-world problem related to their respective specialized area,
3. Expose students to the knowledge and the evolution of the recent technology used in the industry,
4. Instill and bridge the networking as well as the collaboration between university and industry.

While the Specific Objectives for Practical Training are:-

1. Understanding and instilling a responsible attitude in the real working environment,
2. Having the industrial experience that is suitable for their respective specialized area,
3. Appreciating the value of professional ethics,
4. Sharpen the soft skills suitable to the working environment,
5. Enhancing communication skills,
6. Assessing career ability, knowledge, and student's self-confidence
7. Enhancing students' marketability to be more competitive,
8. Instills and develops entrepreneurial characteristics through exposure to reality and career opportunities,
9. Establish professional relationships in the industry,
10. Instills and trains the ability to write a good report.

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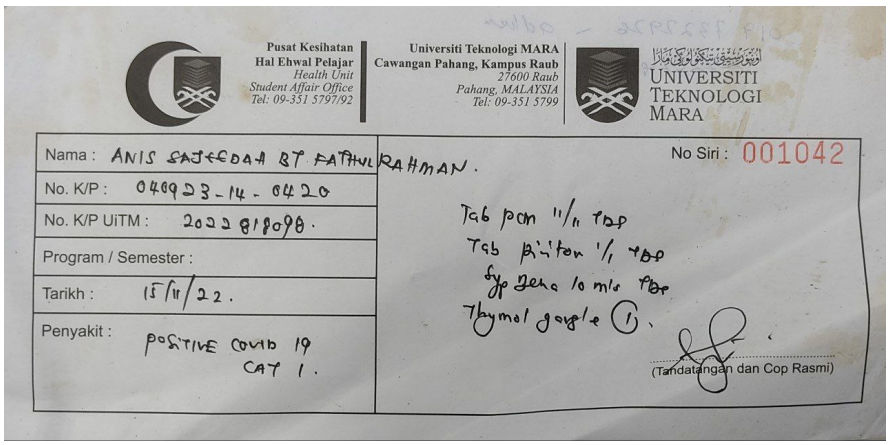
2. Background of the Organization

2.1 Introduction

Every semester in UiTM Raub, there will be thousands of intake students that will use the facilities provided by UiTM, and hence this amount of students using the same pieces of equipment every year, will lead to massive complaints from them either the appliances that were given are broken or the quantities are not enough. So to prevent this from happening, *Bahagian Hal Ehwal Pelajar (HEP)* was introduced under the UiTM departments.

Unit Kesihatan is one of the branches that was organized under the supervision of *Bahagian Hal Ehwal Pelajar (HEP).* Before Unit Kesihatan was built, students need to bring their own medication and find an alternative to get to the nearest medical center if one of them was hurt or involved in an accident. This is very distressing for the students as there is no effective way to get treated immediately if anything bad happens. Thus, UiTM Raub decided to open a temporary medical center to ease common sicknesses and pain among students. It was officially opened and operated on 29 November 2015. The purpose of its establishment was to offer basic medical care to approximately 3000 students and above.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Tab pcm 11/11 TDS
Tab piriton 1/1 TDS
Syp zeta 10 mls TDS
Thymol gargle (1).

(Tandatangan dan Cop Rasmi)

Figure 2.1a Patient Registration form that was used before the system was published

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2.2 Organization Chart

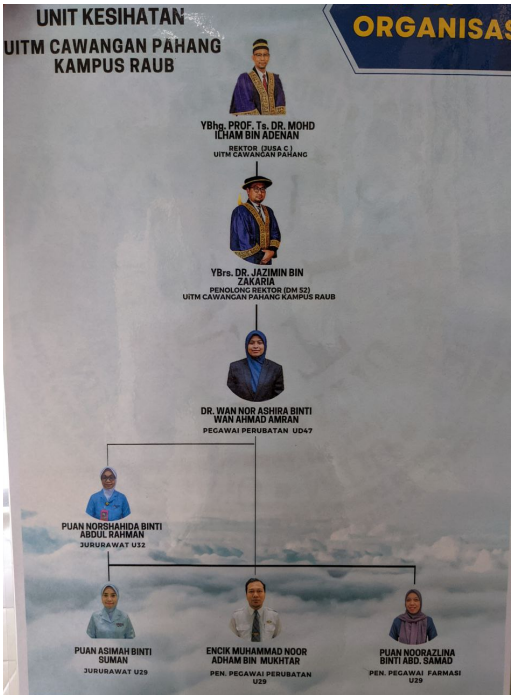

Figure 2.5a Current Organization Flowchart

2.3 Objectives

Listed Below are the objectives that Unit Kesihatan (UK) wishes to fulfill:-

- Health system management for students according to the rules published and set by Main UiTM branches from time to time
- Management of health benefits and facilities for students needs to be in line with the student service scheme
- Ensuring the integrity of the students' health records and health information can be trusted
- Managing a quality of career production based on healthy work environment
- Creating a comfortable and harmonious working atmosphere through the concept of working in groups, practicing good values and prioritizing health
- Providing efficient, friendly and effective customer service
- Promoting a Healthy Lifestyle Campaign among UiTM Raub Campus Pahang residents

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- 80% of patients who seek treatment at the Health Unit receive a medical consultation within 30 minutes of registration

2.4 Vision

Menjadikan sebuah organisasi yang menyediakan perubatan dan kesihatan peringkat primer yang setaraf dengan negara maju
"Becoming an organization that provides advanced medicine and health on par with developed countries"

2.5 Mission

Menyediakan perkhidmatan perubatan dan kesihatan peringkat primer kepada warga UiTM bagi membantu mereka supaya dapat memberikan tumpuan dalam aktiviti pembelajaran, pengajaran dan penyelidikan di UiTM
"Providing advanced medical and health services to UiTM residents to help them focus on learning, teaching and researching in UiTM"

3. Project Overview

3.1 Current System Description

Whenever a student or staff wants to get some medication provided by Unit Kesihatan, they are required to fill in the physical form printed by the working staff. The form was invented for the working staff in Unit Kesihatan to record and keep track of all the medicine. After the form has been submitted, the working staff will give the patient the requested medicine based on the type of sickness that was written on the form.

Originally, there are hundreds of medicine that were stored in Unit Kesihatan for safekeeping. Some of the medicine needs to be approved by the Certified Doctor before they could give to patients. This is because the ingredients contained in the restricted medicine may become harmful to the supposed patient if given without a proper prescription. There are also some cases where the working staff are busy and not be able to give the mentioned form thus making it harder for them to keep track of the overall total of medicine used by patients.

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There are currently a total of 21 medicine that was allowed to be given to patients without the supervision of a Certified Doctor as it was proven that there are no harmful ingredients that were discovered in these types of medicines. This total will become more or less dependent as there are some rumors stating that more medicine will be added after the permission to use other types of medicine was granted by the Main UiTM Branches in Shah Alam.

For this system, there will be only one user that will involve when the system was operating which are:-

- Admin (Working Staff of Unit Kesihatan)

  1. Responsible to add or delete medicines that are only approved by the Certified Doctor, or storing any other type of medicine for safekeeping.
  2. Has the ability to register new patients and assign requested medicine to each of them based on their prescription
  3. Able to view stored records regarding patient details and type of medicine taken by each patient
  4. Can view the overall statistics of each medicine, how much was consumed in a month or year, and how many consumers of each medicine are there
  5. Has the ability to change the admin's username and password if there are new staff appointed in the department.

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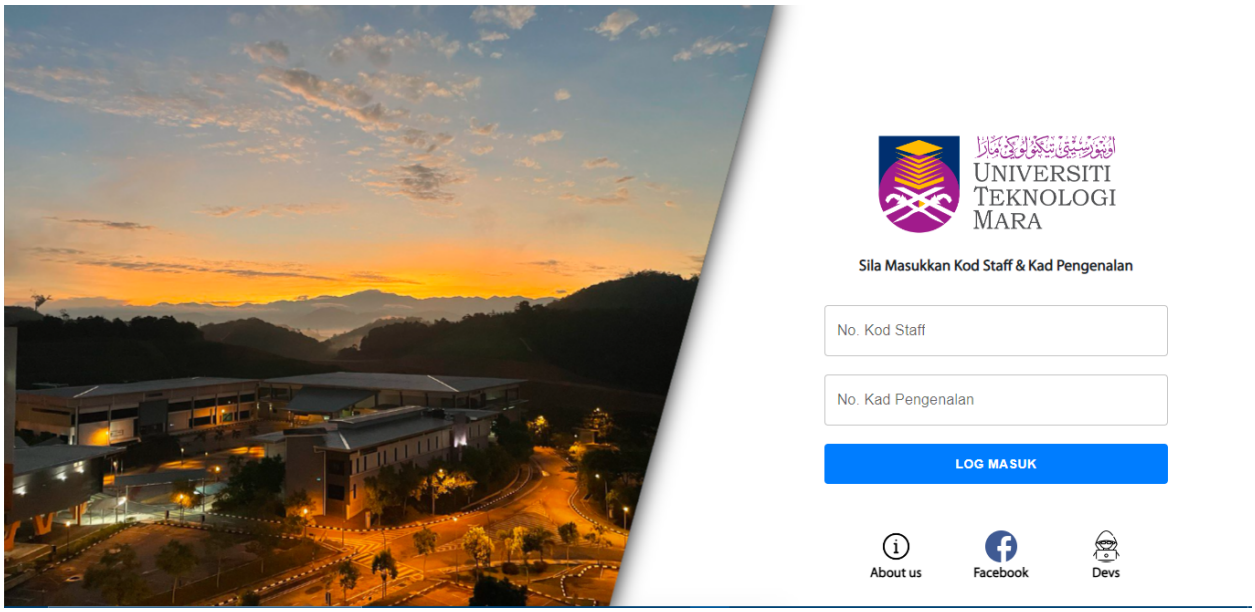
3.2 Selected System Visualization & Process

3.2.1 Admin Front Page



Step 1: Unit Kesihatan Staff needs to log in as an admin in order to access medicine records and patient details

Step 2: After login, admins are able to register patients or view medicine stocks and statistics by viewing the navigation bar.

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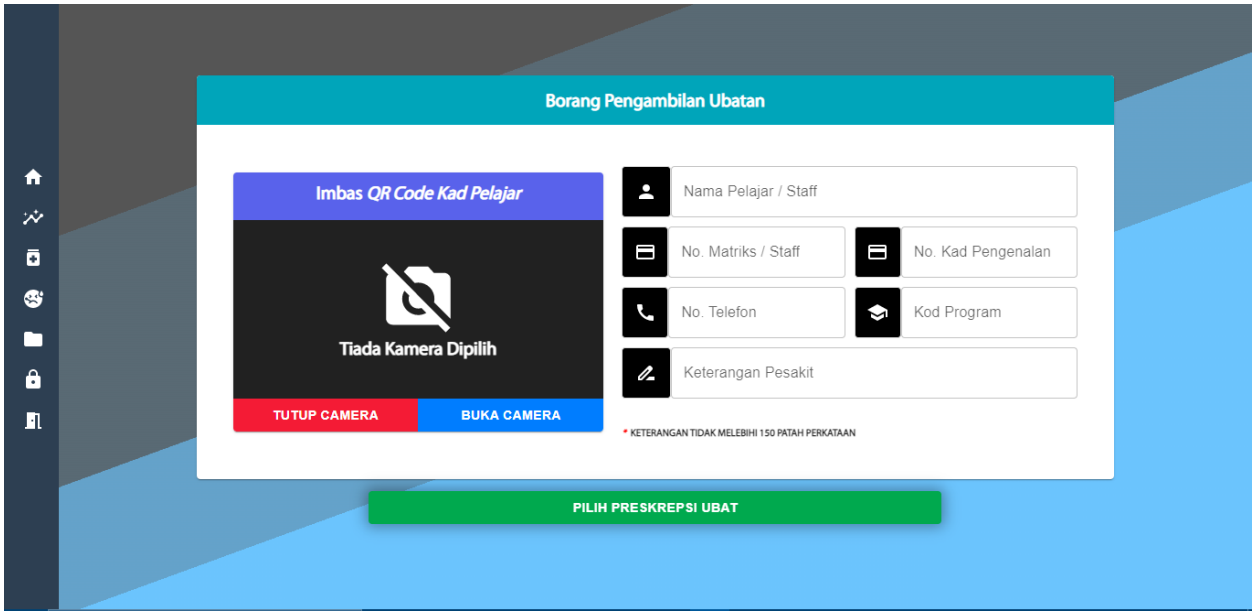
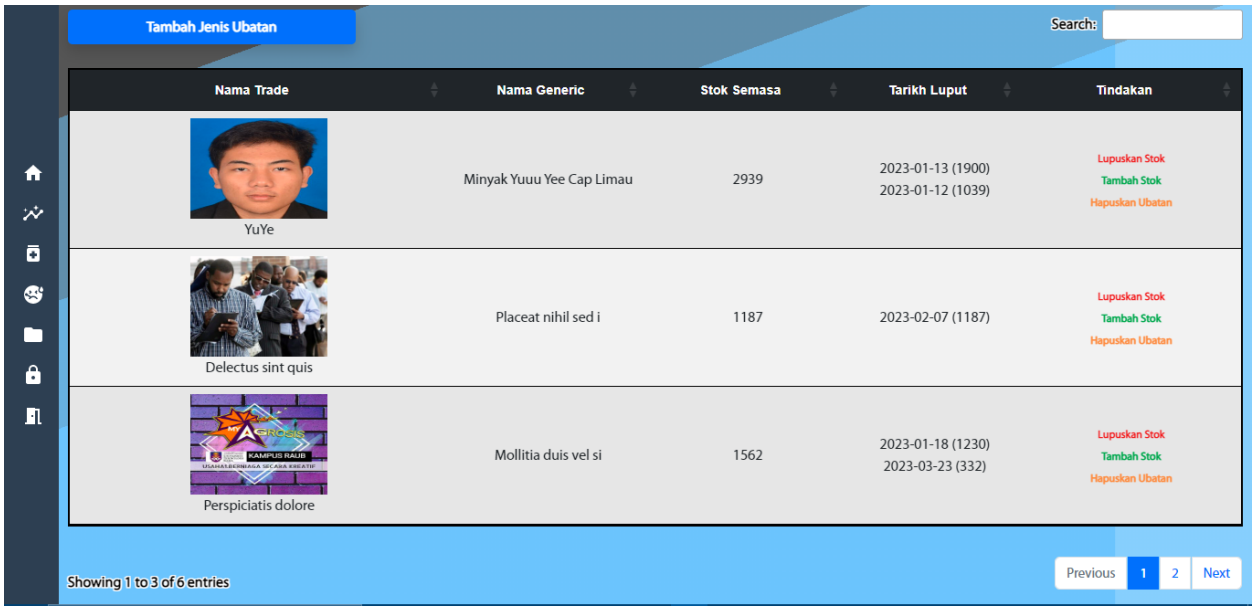


Step 3: This is a simplified form of patient registration where the admin needs to fill up the patient's detail before they can get their medication



Step 4: This is an example of the medication section where admin can add, remove and view the total stock of each medicine.

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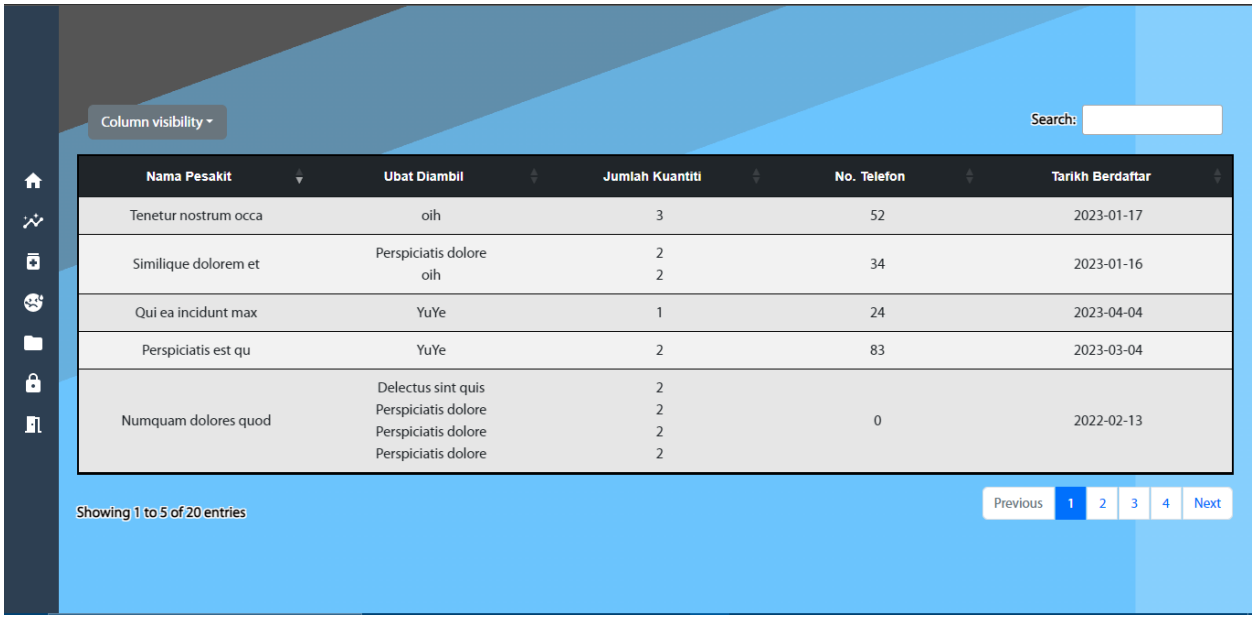
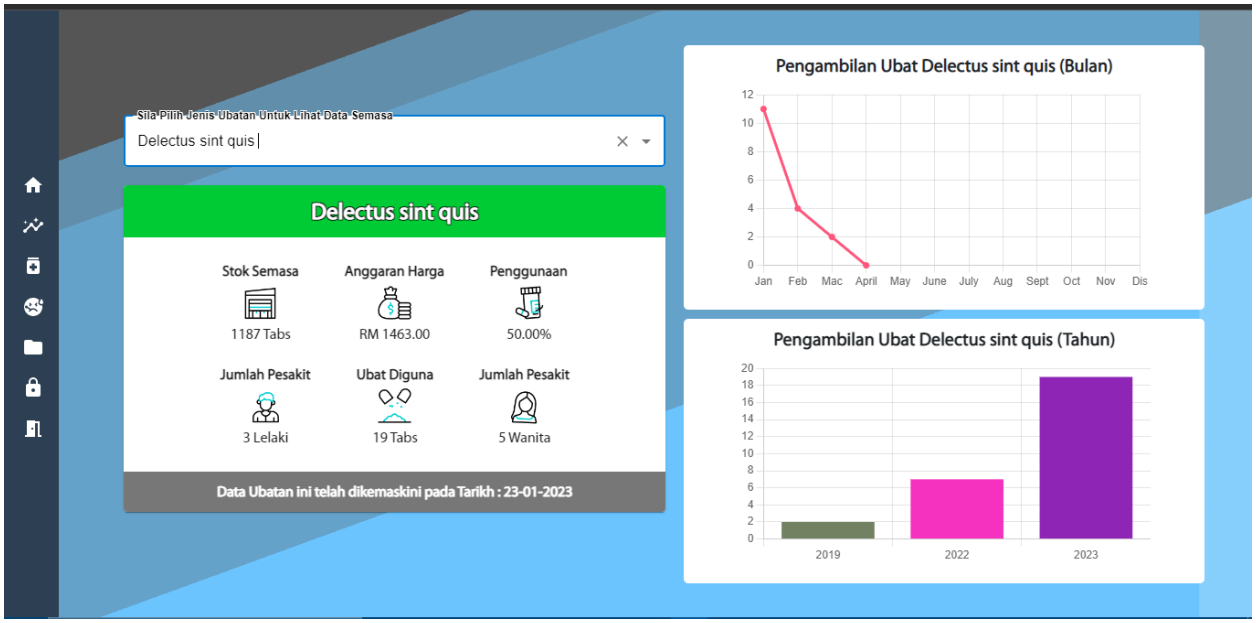


Step 5 : This is a records section where the admin can view each patient's details and they can also see each medication taken by every patient



Step 6: This is an overall statistics on how many medicines has been used and how many usage has been taken per month or year.

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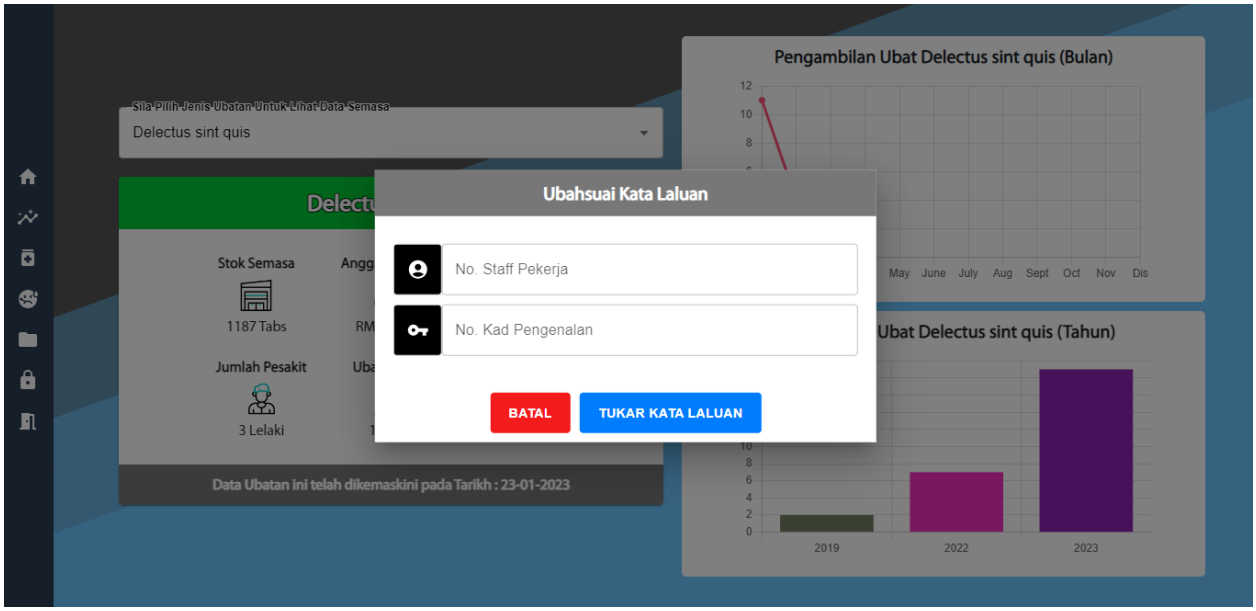

Step 7 : Admins are able to change the username or password in this section in case there are new staff appointed in their department

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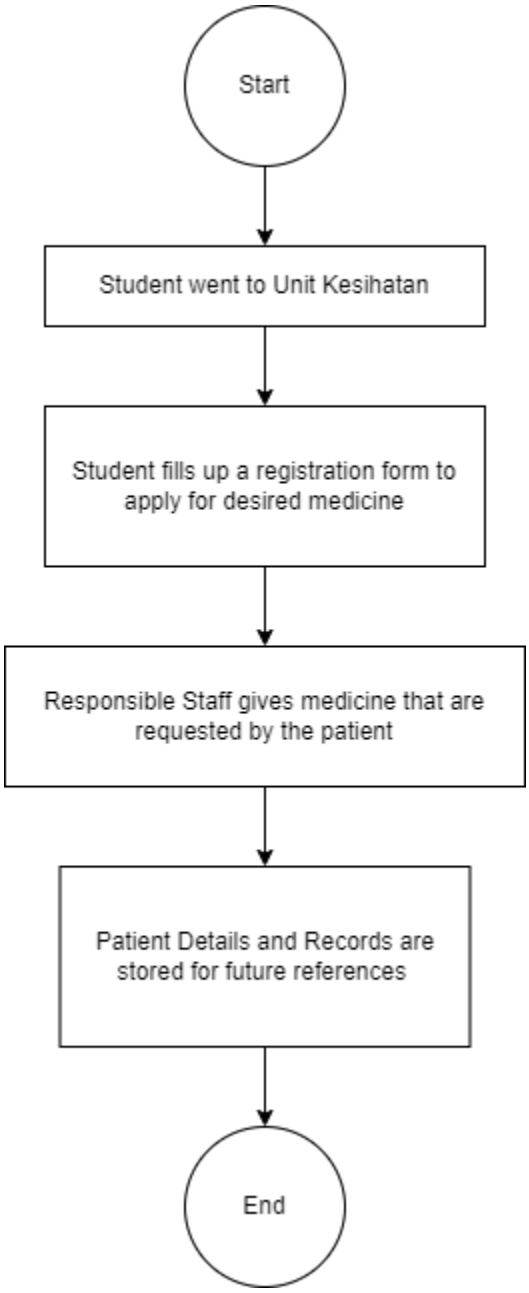
4. System Analysis And Design

4.1.1 Current System Flowchart



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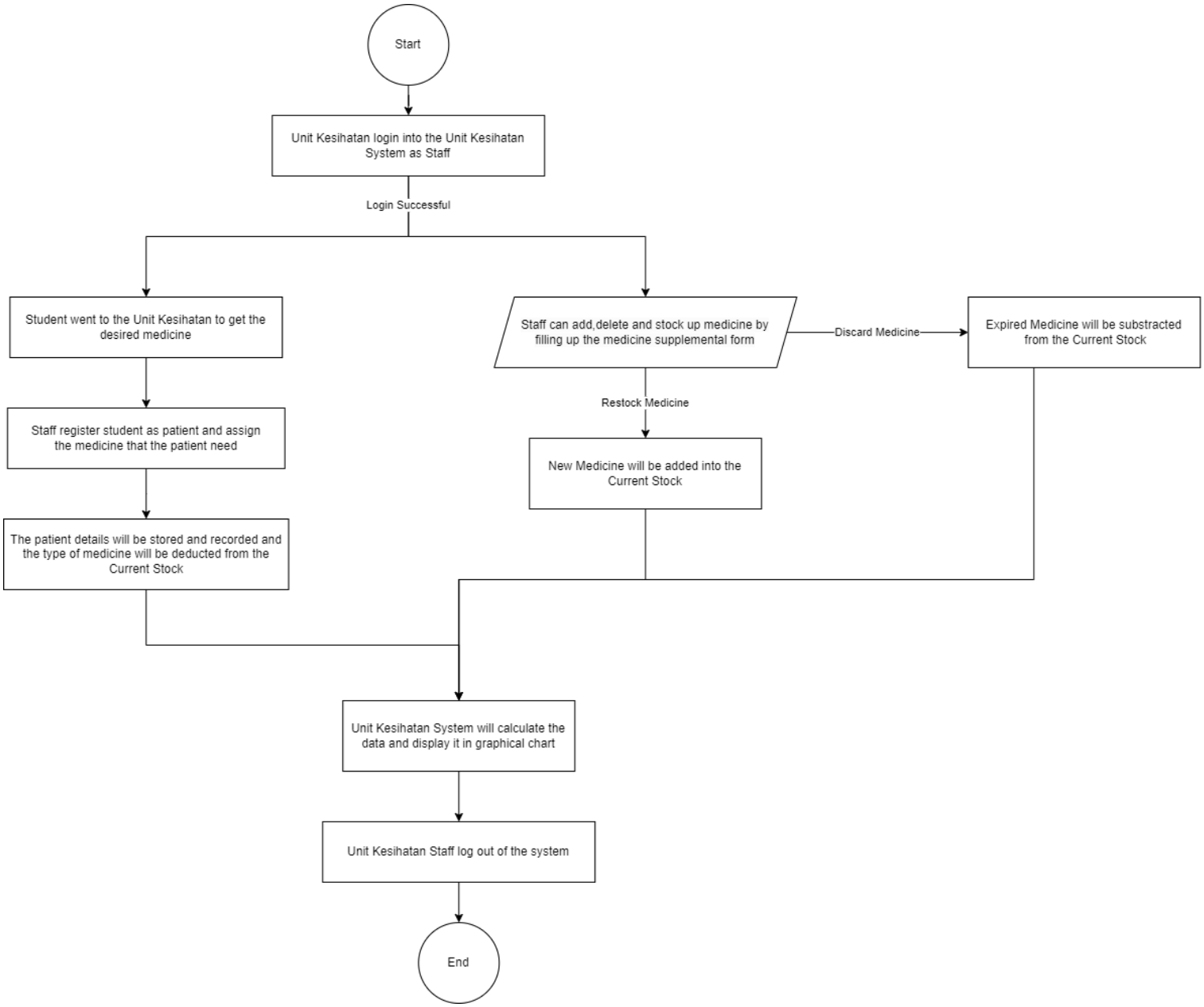
4.1.2 Suggested Process Flowchart (Unit Kesihatan Staff)



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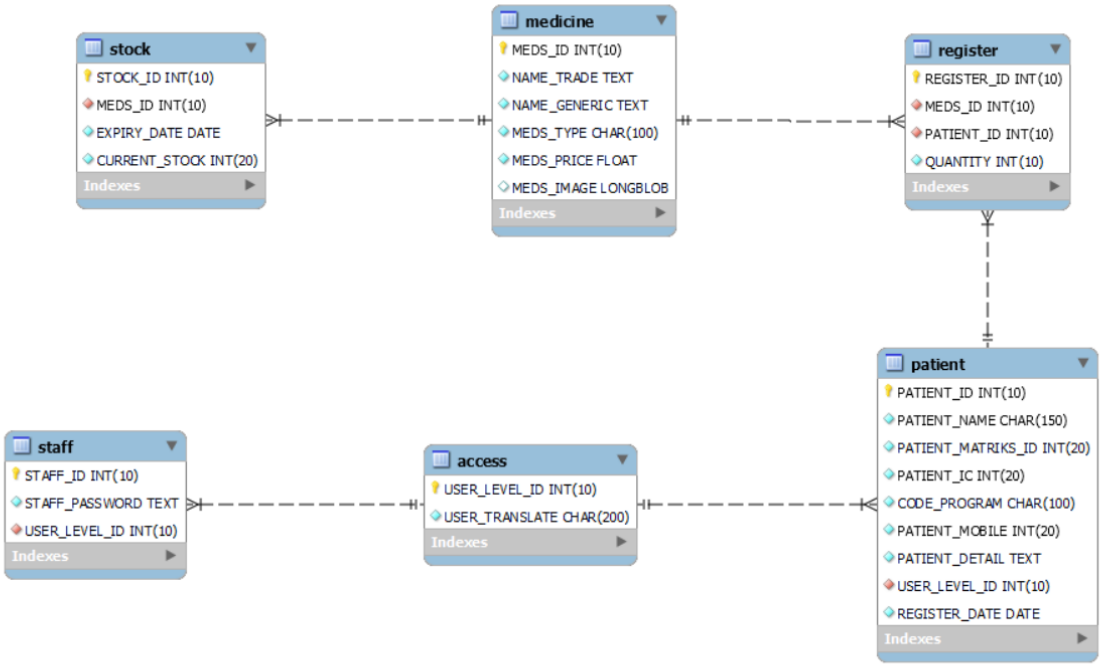
4.1.3 Unit Kesihatan Entity Relationship Diagram



4.1.4 Unit Kesihatan Data Dictionary

- For this section, please view Data Dictionary of Unit Kesihatan System on another printed document titled '*Data Dictionary Unit Kesihatan System*'

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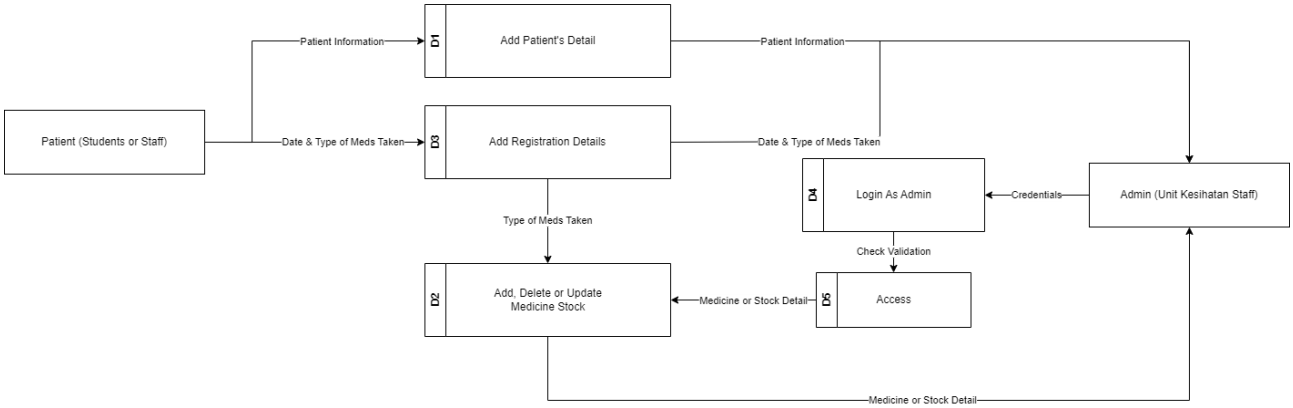
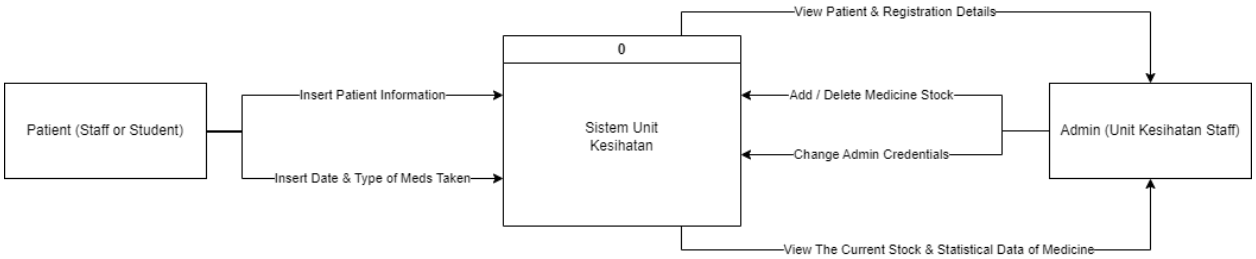
4.1.5 Unit Kesihatan Data Flow Diagram



4.1.6 Unit Kesihatan Context Diagram



4.1.7 User Manual

- For this section, please view the documents provided with this paperwork named "*User Manual Sistem Unit Kesihatan*"

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4.2.1 System Scope

Once the system has been finished and operatable, it will help Unit Kesihatan Staff to organize their medication stocks and their patient's record just by looking at the statistical data provided in this system. With these features being implemented, the staffs are able to search for information regarding the patient or medicine much faster as the data has been compiled in one place making it easier to find. Based on the given documents the system is supposed to display the given attributes:-

- ***Front Page***
    - User Manual
    - Official Facebook Page
- ***Statistical Section***
    - Current Medicine Stock
    - Total Usage of Each Medicine
    - Total Patients Usage for each medicine (Month/Year)
- ***Medication Stock Section***
    - Medicine Name (Trade / Generic)
    - Total Current Stock
    - Stock by Expiry Date
    - Option to Add or Delete (Medicine & Stock)
- **Patient Records Section**
    - Patient Name
    - Patient Identification (Identity Card / Matriks)
    - Date & Type of Meds Taken
- **Update Credentials Section**
    - Admin Username
    - Admin Password
- **Patient Registration Section**
    - Patient Information
    - Type Of Meds Taken
    - Prescription Details

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By using this system, admin are now be able to register each patient without having to use the physical registration form. This will help the admin to preserve the patients' records and keep track of medication stock hence making it much easier for the admin to estimate the total usage for each month. Admin also is able to view how much current stock is available for the month, this feature is very helpful as admin will no longer need to manually count and check the medicine one by one thus increasing the workflow for the Unit Kesihatan Staff.

Other than that, the integrity of the data can be trusted as the admin is the one who is responsible to fill up the patient registration form. This will prevent outsiders from entering any useless information that can corrupt the database of this system. Admin also has the right to view the patient's detail whenever the data are being requested as this system will store the date and type of medicine that has been taken by each patient for future reference.

4.2.2 System Objective

The reason this system was made in the first place is to solve some problems faced by the Unit Kesihatan Staff when taking other students or staff as patients. By using the *Unit Kesihatan* system, the management is able to solve some of the problems that appeared in the department. Some of the objectives for this system are:

- Inserting and Updating Stock Medication Data when making changes will become much easier as it can be accessed online everywhere and anywhere.
- Filtering certain data could be done so much quicker as the system is capable of sorting the data based on specified attributes provided by the admin. This will decrease the times that are needed to find certain information as admin can search for them by highlighting certain keywords when searching a certain data
- Data loss can also be prevented as the physical types of data cannot be backed up or being save from natural disaster, making the data integrity lost its value
- The system will become more secure and flexible as admin is the only one who has access to this system making it much harder for outsider to hijack and steal certain information contains in the database

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5. Assessment Of Feasibility Study

5.1 Functional Requirements

- Log in as admin using the assigned username and password to get access to Unit Kesihatan Medicare System
- Register new patients and assign appropriate medication based on their described prescription
- Store patient details and information regarding the date and type of medication taken for future reference
- View Statistical data on the overall usage of each medicine and how many patients have consumed a certain medicine in a one period of time
- Changing the admin credentials whenever a new staff appointed making it more secure as old admin cannot have access to this system when the new staff takeover.
- Adding or deleting a single type of medicine whether it was stored for safekeeping or for distribution purposes
- Adding or Removing stock of a certain medicine based on their expiration date

5.2 Non-functional Requirements

- Adding the Unit Kesihatan Official Facebook page so that admin can directly view any events or information that has been posted on their feed.
- Implementing a Graphical Chart using Chart.js so that admin can swiftly view the overall usage of a certain medicine
- Configuring a user manual into the system front page so that admin can view the manual if there are any inquiries regarding the system present
- Had a Cross-Origin Resource Sharing (CORS) where it will only receive resources from the same domains only making it invulnerable towards XSS Cross-site Scripting Attacks

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6. System's Findings & Evaluation

6.1 The Strength of the System

After some modifications that have were changed during the practical training period, there have been some upgrades and updates that were implemented into the system. Some of them are Unit Kesihatan staff can now easily find certain information with a single search as the data was now being stored in the database meaning that the workflow of Unit Kesihatan will become much faster and more data can be stored.

There is also a graphical chart that will help the admin to gather and visualize the overall data regarding certain medicine. With this feature being implemented, the admin can keep track of crucial information on a specific medicine such as knowing the total usage of a medicine in a certain period of time, calculating the current stock, and estimating its overall usage cost that has been consumed by the patient.

This system also uses React Framework which has multiple security features that help to protect admin from malicious attacks. Some of the security features implemented on this system are the use of Cross-Origin Resource Sharing (CORS) which will prevent cross-site scripting besides having secure communication requests with HTTP and HTTPS using Axios library that will prevent man-in-the-middle attacks

Finally, admin is able to view each medication stock description with in-depth details as the stock section has divided each medicine based on their expiry date. This means that admin will no longer need to manually calculate the total medication that has been consumed by a certain number of patient as this system will automatically increment or decrement according to the quantity of medicine taken by the patient.

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6.2 The Weakness of the System

Even though this system has been drastically improved, there is some weakness that can be found within. Some of the weaknesses are there is only one admin that can be registered at one time. This means that if there are any other staff who wants to enter this system, they must first get permission from the original admin to login into his/her account before gaining access to the system. This will delay the workflow of the department as if the admin is not present at the moment then there is no way that they can get access to this account.

Because there is one admin being registered at a time, there will be no information on who has provided the patients with certain medications. For Example, there might be times when the admin may not be available at the moment so other staff must be responsible to help patient register their information in this system. After the patient has been registered, the admin cannot view the name of the staff who is responsible for the patient registration.

The usage of third-party plugins that are not secure like QR Code Scanner has a higher possibility of being hijacked because of their unreliable maintenance and infrequent updates. Numerous flaws in this plugin might be found and used by others to change the data that is saved within this system as a result of its lack of maintenance. This might express many concerns regarding the accuracy of the data besides increasing the risk of ransomware.

Lastly, the lack of hardware storage provided by the main branch server makes it harder for the system to store a file-type picture in a database. It was necessary for the admin to insert a picture of each medicine in order for them to avoid confusion when providing certain medications to patients. New staff could also help during the registration process as they can differentiate medication easily based on the images provided by the admin. But with limited storage admin must upload an image that will not exceed a certain limit.

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7. Conclusion

Alhamdulillah with God's Blessing, I finished my internship at UiTM Cawangan Pahang Kampus Raub on 24th February 2023 and published *Permohonan Aktiviti Pelajar* System. With this system being implemented, I hope that it will loosen the burden of the management at department Hal Ehwal Pelajar and increase the effectiveness in terms of workflow as the data can now be stored safely while making it easier for them to filter it rather than searching the data physically in office files.

The management can also be benefits from this system as they can store more data in a longer time period without having to be afraid of losing the data because of physical casualties such as files being worn off or the files being missing. This can increase the data longevity as the admin can view old data stored in the database provided by this system.

With the completion of this system, I have not only completed my task working as a Software Developer but also gained some experience and polished my skills by learning new frameworks that are currently needed in the Information Technology Industry. Frameworks such as React.js, Ajax JQuery, and Javascript Vanilla are some of the most important tools that are frequently sought by the corporation.

Before I end my paperwork, I want to say that I am grateful and thankful to my Industrial Supervisor, TS. Mohd Norafizal Bin Abdul Aziz for giving me the opportunity to work here as an internship student under *Ketua Pusat Pengajian Sains Komputer* Department and I want to also thank my Academic Supervisor, Madam Aisyah Binti Mat Jasin for guiding me through my internship.

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