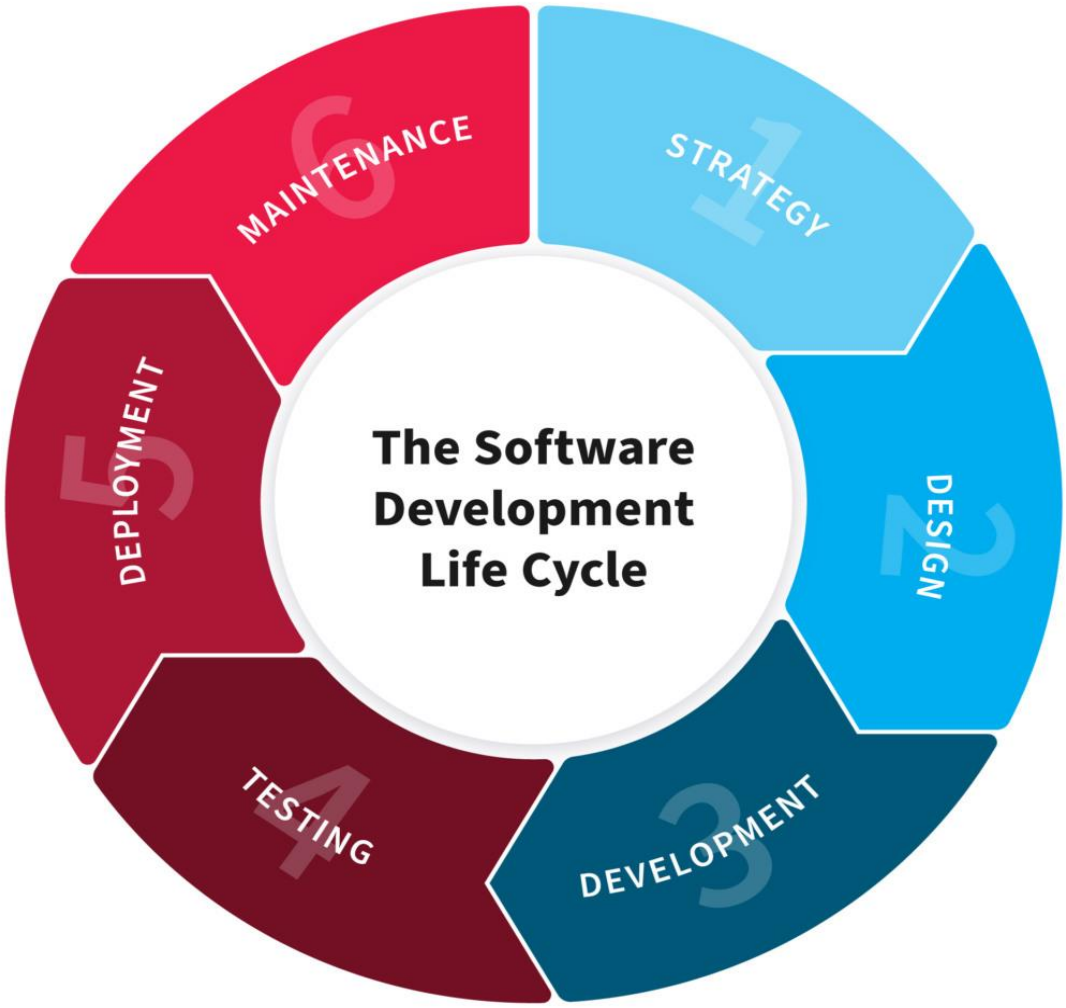
DOCUMENTATION OF ADVANCED JAVA PROGRAMMING PROJECT



UNIVERSITY OF RWANDA HUYE CAMPUS
COLLEGE OF BUSINESS AND ECOMICS
BUSINESS INFORMATION TECHNOLOGY
GROUP 2

NAMES: **KWIHANGANA Fabrice**
REG NO: **221021296**
CLASS NO: **19**
TASK: JAVA FINAL EXAM

PROJECT NAME: SMART PHARMACY SYSTEM

1. 1. PLANNING

SMART PHARMACY SYSTEM is a software application designed to connect the Pharmacists and patients in order to get in touch easily by decreasing more cost for trips and time a patient can spend by looking for his/her medications. This SMART PHARMACY SYSTEM technology will upgrade the standard and security of their services.

Moreover, this software will also assist the pharmacists to control their inventories by keep watch on the validity of medicines and find easily the near expiry dates of drugs. The pharmacist will also have a responsibility of answering the questions and inquiries in the meantime through **smart assistance.**

1.2. Goals and objectives of SMART PHARMACY SYSTEM.

- Ensure that patients receive the right medication in a timely manner.
- Manage the medicines inventory.
- Link the pharmacist and the patient in a single click interaction.
- Improve the efficiency of smart assistance for patients.
- Reduce the workload of a pharmacist through this automation tasks.

1.3. The problems this SMART PHARMACY SYSTEM will solve.

- Costly trips, time and effort wasted by a patient looking for medications.
- Poor storage of data.
- Analog search of medications.
- Outdated medicines across database.
- Duplication of medications in a database.
- Keeping all data manually

2. Design

2.1 Functional requirements

- Facilitate communication between pharmacists and patients.
- This system will allow users to view and search available medications.
- This system will allow users to leave a comment on the medication through smart assistance
- This system will also allow users to access the interface, which shows the address information of our pharmacy location.

2.2 Technical requirements

Usability: Usability defines how difficult it will be for a user to learn and operate the system. For our system it will be user-friendly where every patient who access the internet will be able to navigate it easily.

Security: Security requirements ensure that the software is protected from unauthorized access to the system and its stored data.

Regarding on how our system works you cannot access the sensitive information without filling the authorized credentials of the pharmacist.

Reliability: Reliability defines how likely it is for the software to work without failure for a given period. Referring to our smart pharmacy system it will be able to perform promised service dependably and accurately where you will get the medication you search in a blink of an eye and be able to leave a comment of your thought fast and easily.

Performance: Performance is a quality attribute that describes the responsiveness of the system to various user interactions with it.

The system that we built will ensure an effective management of the pharmacy inventory and getting in touch easily with our customers through smart assistance where no operations loading period can exceed two seconds.

Availability: Availability is gauged by the period that the system's functionality and services are available for use with all operations.

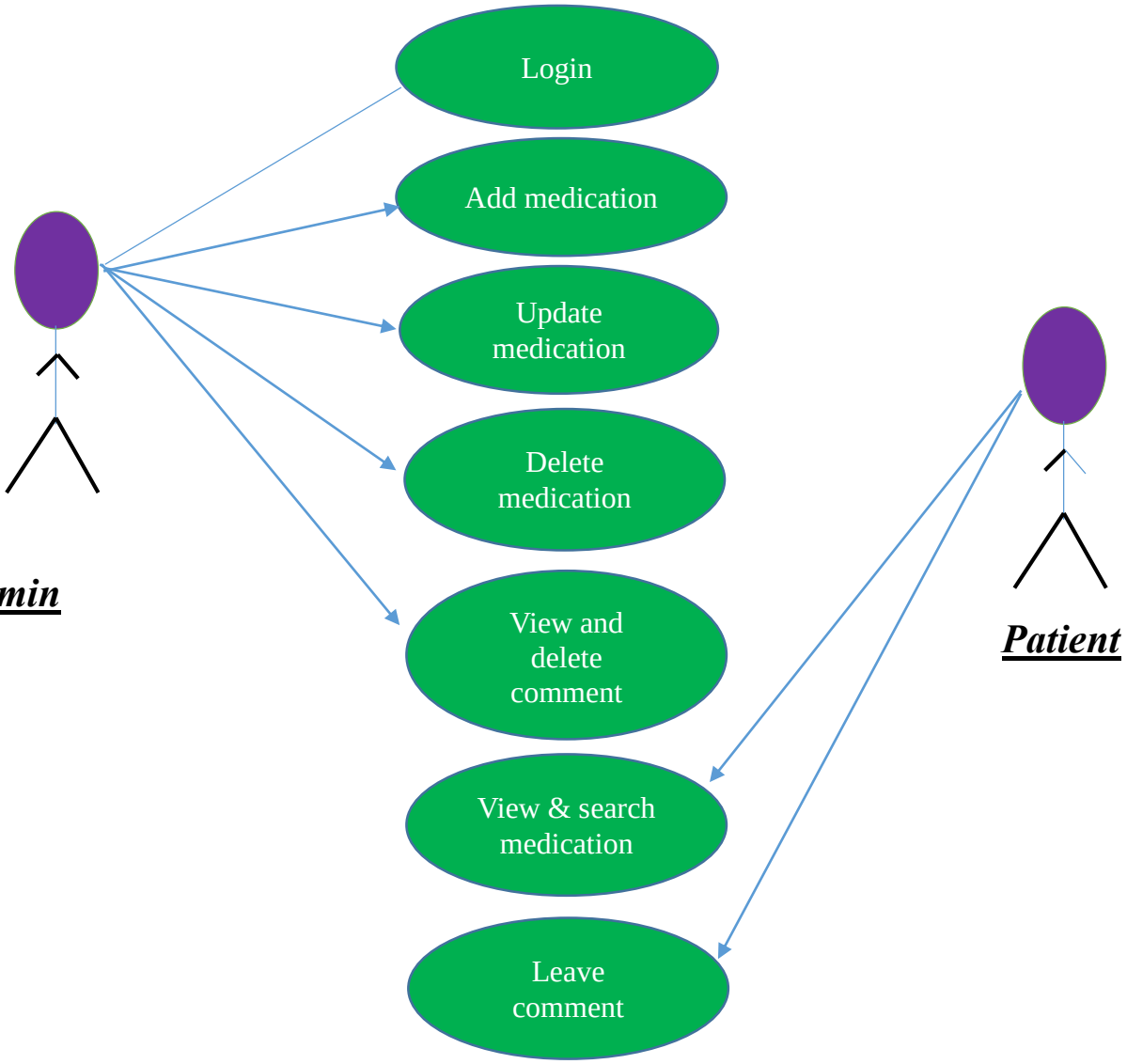
Our system will be available for 24/7 limiting to the feedback of patient questions, which are replied in working hours only.

DFD Diagram.

Level 0.

In this data flow diagram, you will see the general process done in SMART PHARMACY System monitoring. This will also serve as a guide as you go through the deeper processes of understanding how this system actually works.

USERCASE DIAGRAM



3. Development

Front-end technology is the part of website that the user interacts with directly text colors and styles, image, graphs and tables, buttons colors and navigation menu.

Front –end –Frameworks and libraries

- ✓ We used jcalender 1.4 as a library for java date chooser for graphically picking a date.
- ✓ We developed the system backend and frontend parts using java programming language as well as NetBeans IDE and xampp server for database.
- ✓ For frontend parts, we used swing controls generated from NetBeans to create forms, buttons, labels as well as user interface as whole.
- ✓ We create interactions between user interface components such as forms and buttons using java programming language syntaxes.
- ✓ We used com.mysql.jdbc_5.1.5.jar as library handling MYSQL connection with the system and absolute layout.jar.

Back –end is server side of the website it stores and arranges data and makes sure if everything on client side of website works well. Here we used jsp and servlet technologies to perform activities by working with system components without user-interface such as CRUD operations (create, read, update, delete).

- ✓ We used MySQL as database management system to hold backend data.

4. Testing

System testing is testing conducted on a complete integrated system to evaluate the system's compliance with its specified requirements.

Open xampp server
Start Apache and mysql
Open project in netbeans
Add Jcalender jarfolder in the libraries
Add com.mysql.jdbc_5.1.5.jar in the Libraries.

PHARMACIST INTERACTION

Run the Pharmacist login page by right click RUN or shift key+6.
Enter credentials of the pharmacist
Ensure that you fill in the username and the password that matches with the fields in the database.
Then after filling, receive a popup message that welcomes the pharmacist otherwise it will display the message that will inform you that the password and username entered is incorrect.

After Pharmacist logging in successfully will navigate to the following main menu as follows: **MEDICATION** and **SMART ASSISTANCE**

For medication Tab

DATA INSERTION

A pharmacist will have the responsibility of adding medications and receive a popup message that tells him that it was inserted in the database successfully and he will confirm it by checking on the right corner of the table that it was a

dded on the medications available.

4.1. DATA UPDATE and DELETE

A pharmacist will also have a privilege of managing the inventory by deleting or updating medications where incase the medication is misspelled you can update it and receive a message that popups and confirms that you have updated the medication successfully and this also works on delete button where incase he deletes a certain medication will get a popup message that tells him that he successfully deleted the medication.

For SMART Assistance Tab

The pharmacist will visit the smart assistance tab to view the comments of the patients have asked and give them the feedback via a phone call or email.

He will also have the option of deleting the comment, which was replied or lasted for a long period answered.

PATIENT INTERACTION

When the patient run this system, he/she will be welcomed by the homepage with 3 menus such as:

- MEDICATIONS
- CONTACT US
- SMART HELP

For medications tab

The time a patient visit, this tab he will be able to search for the available medications and check if the particular medication he is looking for is available.

For SMART HELP

Thereafter, when the patient found his desired medication or want some further information on a certain type of medication and on how he will take it or receive it and leave a comment and wait for a feedback from the pharmacist.

5. Deployment

- I Installed MYSQL as database management system using XAMPP software.
- Downloaded and configured com.mysql.jdbc_5.1.5.jar as library handling MYSQL connection.
- Downloaded and configure Jcalender 1.4.jar as library for date choosing.
- Downloaded r2xlm.jar as library for displaying data from database.
- Use portable storage device to transfer project from development computer to the user who want to explore application.
- I tested my Smart pharmacy System by entering wrong data to see if it will not work and by entering right data to see if it will work well.
- After testing it, I Run project file and start using the system.