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Industrial Training (22057)

A

MICRO-PROJECT REPORT

ON

Vaccine Management System

Submitted By:

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CERTIFICATE

It is Certified that this Micro-Project Report of

Vaccine Management System

is the work by

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The students of Semester Fifth, **Subject Name**: - Industrial Training (22057), Diploma in Computer Technology, 2022-23.

This report is partial fulfilment for the award of the Micro-Project Diploma in Computer Technology by MSBTE, Mumbai.

Guide Name: -

Date & Sign: -

HOD   **PRINCIPAL**

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ABSTRACT

Vaccine Management System, is a project which highlights the ongoing need of a platform for booking vaccine by ourself by sitting at home. This is a real time project; hence it is developed according to the real time requirements of the client & user friendly.

Booking vaccine in this application is very simple, as we have to just first register & then login into the application; then select the centre and the vaccine which is to be taken. The appointment will be shown in a section called view appointment, once the booking is done successfully.

The admin is provided with a separate id & password for logging into the admin section. He is provided with features of updating vaccine stocks and marking vaccine status of an individual etc.

The abstract of the project is, to give a user-friendly platform to the customers for booking there vaccination and make this process as simple as possible.

AKNOWLEDGEMENT

In the accomplishment of this micro-project successfully, many people have best owned upon me their blessings and heart-privileged support. Primarily, I would like to express a special thanks of gratitude to the Principal Sir of the Government Polytechnic, Solapur for giving this golden opportunity with all the required facilities for completing this micro-project of our group.

I would like to extend my gratitude to our ITR subject teacher, Mr. Prof. Arun Tarange Sir, whose valuable guidance has been the ones that helped us patch this project and make it full proof success. Their suggestions and instructions have served as the major contributor towards the completion of the micro-project.

I would also like to thank my parents who have helped with their valuable suggestions and provided the required resources needed for the micro-project. Lastly, I would like to thank my fellow group members for their contributions and suggestions in various phases in completing the project.

PROBLEM STATEMENT & REQUIREMENT ANALYSIS

Problem Statement:

1) *To create a platform for the people to book their vaccine, View Status of appointment.*
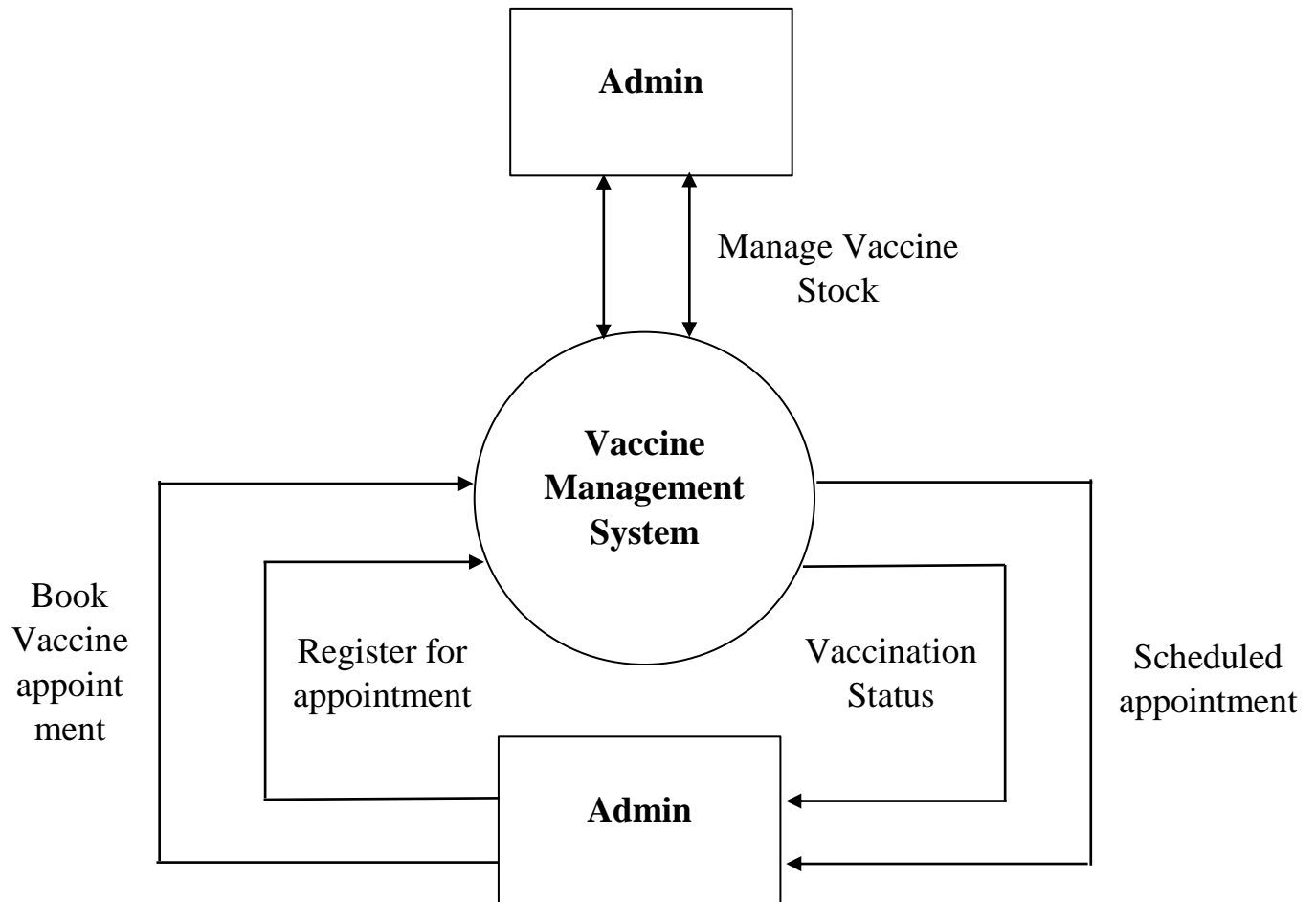2) *To create a platform for the admin to manage vaccine stocks, update appointment status etc.*

In day-to-day situation, the need of hour is vaccinating ourselves for being secure from covid. But for getting vaccine appointment, people have to find the places nearby that are vaccination centre and then travel there for booking the appointment. This process is too time consuming and effort consuming. The best way to overcome this issue is to develop an online platform for booking the appointment by sitting anywhere.

We have developed a stand-alone GUI application using all the concepts that we already know and what we have learned in this training process. The application can book appointment of users and send them confirmation message. But, we haven't integrated the application with the hospitals or vaccine centers. Hence, this can be considered as the future scope of the project as, if the appointments aren't transferred to the respective vaccine centers, the centers cannot confirm and recheck the appointment of the users.
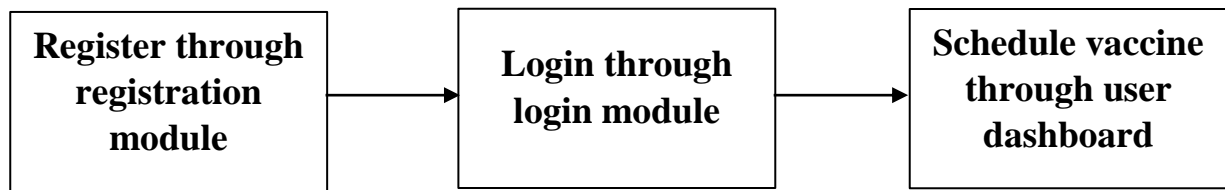
We shall overcome this problem too in the upcoming releases. But this release will majorly focus on how to input and store the appointments of more and more users.
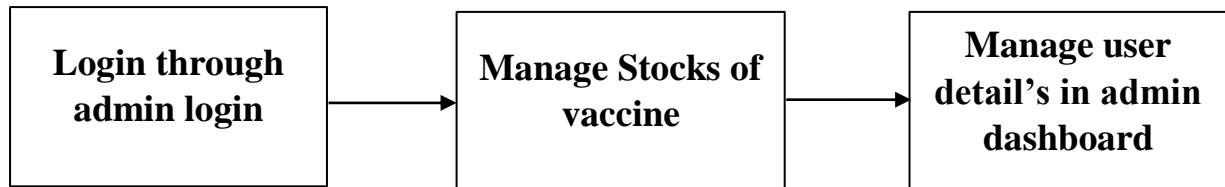
Requirement Analysis:

1) Data Context Diagram

```
                    ┌─────────────────┐
                    │     Admin        │
                    │                  │
                    └─────────────────┘
                         ↕      ↕
                              Manage Vaccine
                                  Stock

                         ╭─────────────╮
                         │   Vaccine    │
                         │ Management   │
                         │   System     │
                         ╰─────────────╯
  Book
  Vaccine      Register for        Vaccination         Scheduled
  appoint      appointment           Status            appointment
  ment
                    ┌─────────────────┐
                    │     Admin        │
                    └─────────────────┘
```

2) Model Requirements

Register through registration module	→	Login through login module	→	Schedule vaccine through user dashboard

User Module DFD Level 0

Login through admin login	→	Manage Stocks of vaccine	→	Manage user detail's in admin dashboard

Admin Module DFD Level 0

3) Finalized Requirements

- User module with submodules such as Login module, Register module & Dashboard module.
- Admin module with submodules such as admin login & admin dashboard.
- Proper front end and back-end co-ordination.

FEASIBILITY STUDY

1. Operation Feasibility

How well the system performs is shown here via PIECES framework.

Performance: Does current mode of operation provide adequate throughput & response time?
- In comparison of booking the vaccination by physically being there at vaccine centre, this system is more adequate & time saving; as we can book the appointment very easily and also data is stored adequately with proper management.

Information: Does current mode provide end users & admins with timely, pertinent, accurate & usefully formatted information?

- Every user's data is properly stored into the database & is displayed in formatted way to the user.
- The admin is provided with accurate information about the user and in formatted way also.
- This provision of pertinent, accurate & usefully formatted information to the users as well as admins is possible because of effective use of database.

Economy: Does current mode of operation provide cost effective services?

- The system is very cost effective, and also it has benefits for the companies, as the time goes users will increase and the software use will be increased.
- The user also has cost effective benefits, as the travel cost is saved for booking the appointment.

Control: Does current mode of operation offer effective controls to protect against security of data & information?

- As the admin only has the access to the information of the users, and can update database, so no third party is involved and the data and information are fully secured.

Efficiency: Does current mode of operation makes maximum use of available resources, including people, time and flow of form?

- The current system uses most efficient way by making the appointment booking in an online mode.
- The paper work for registration is totally depleted through this system.

Services: Does current mode of operation provide reliable service? Is it flexible & expandable?

- The system is desirable & reliable services to those who need it and also whether the system is flexible & expandable or not. The proposed is very much flexible for better efficiency and performance. This system, has a huge scope for upadation.

2. Technical Feasibility

Vaccine Management System deals with the modern technology system that needs the well efficient technical system to run this project. All the resource constraints must be in the favour of the better influence of the system. Keeping all these facts in mind we had selected favourable and software utilities to make it more feasible.

Recommended Hardware

Hardware Used	Specification
Laptop/computer	HP EliteBook 800 G1
RAM	8 GB
Processor	4th Generation Intel core i5
Graphics	Onboard Intel Home Graphics

3. Software Recommended

Software used in this project

- Eclipse IDE
- XAMPP server

Windows 11 OS is used in this project

Proposed methodology and planning

There are basically two types of methodologies for building a project; Structured Analysis Design methodology and Object-Oriented Methodology. We have chosen Object-Oriented methodology for our project Vaccine Management System.

**The proposed flow of the user in the software is as follows:**

- Register to the application
- Provide valid details while registering like email, phone number, date of birth and address
- Login to the application by using email-Id and password
- Validate email-Id and password while logging in
- View his/her profile in the dashboard
- View the vaccination status of user i.e., Not Yet Vaccinated, Scheduled or Vaccinated
- Book the appointment by entering aadhaar number, choose vaccine and vaccine center.
- Receive appointment details via email
- View booked appointment in the dashboard

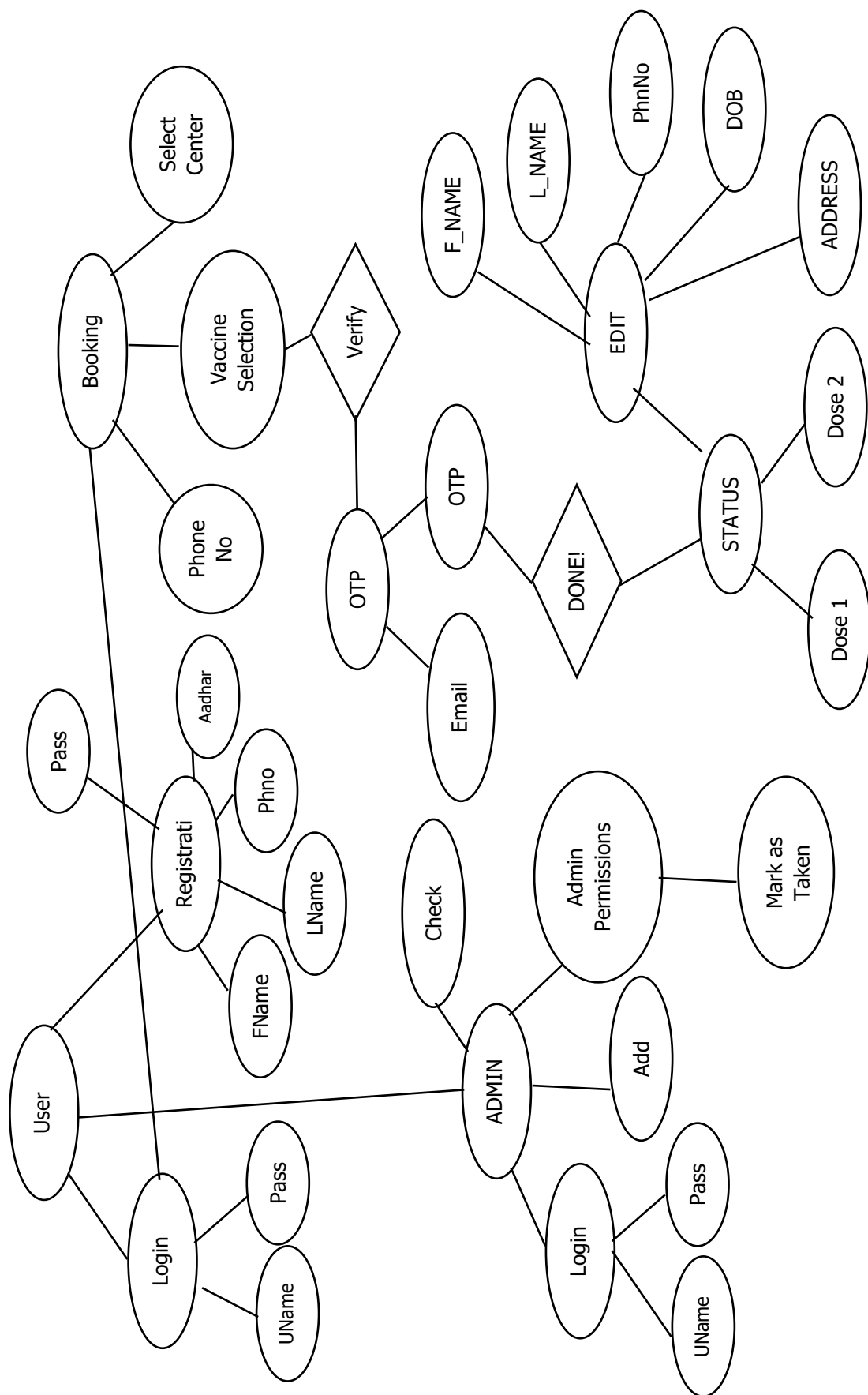**The proposed admin controls in the software are as follows:**

- View number of users registered to the application
- View the vaccination status of users
- Manage vaccine stock.
- Manage vaccine status.

Design

Use Case Diagram for Booking Vaccine Appointments -
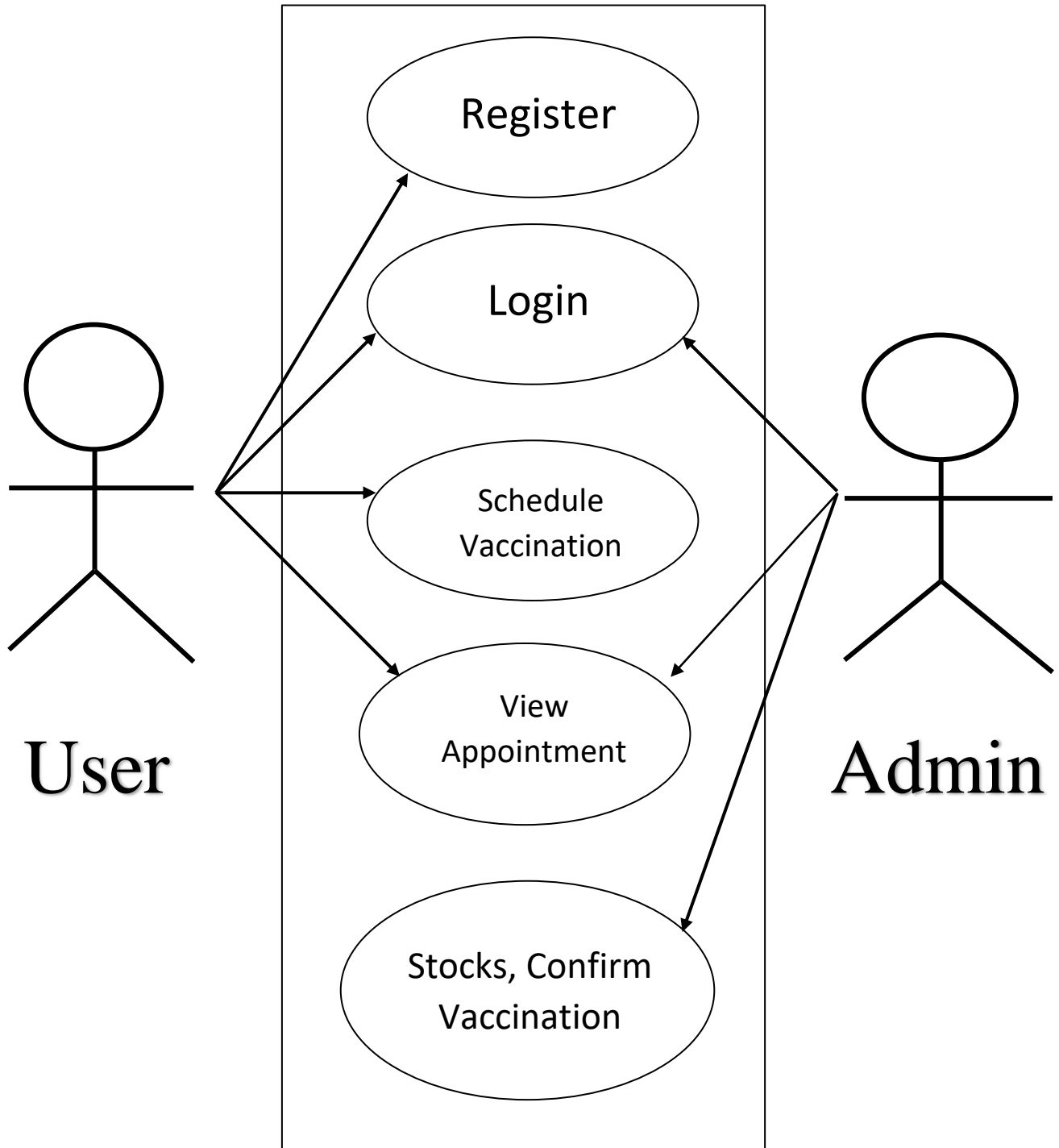
ER Diagram for Database Structure –

MAJOR MODULES

4. User Module:

User module is basically the combination of three submodules that are, Registration, User Login & User Dashboard modules.
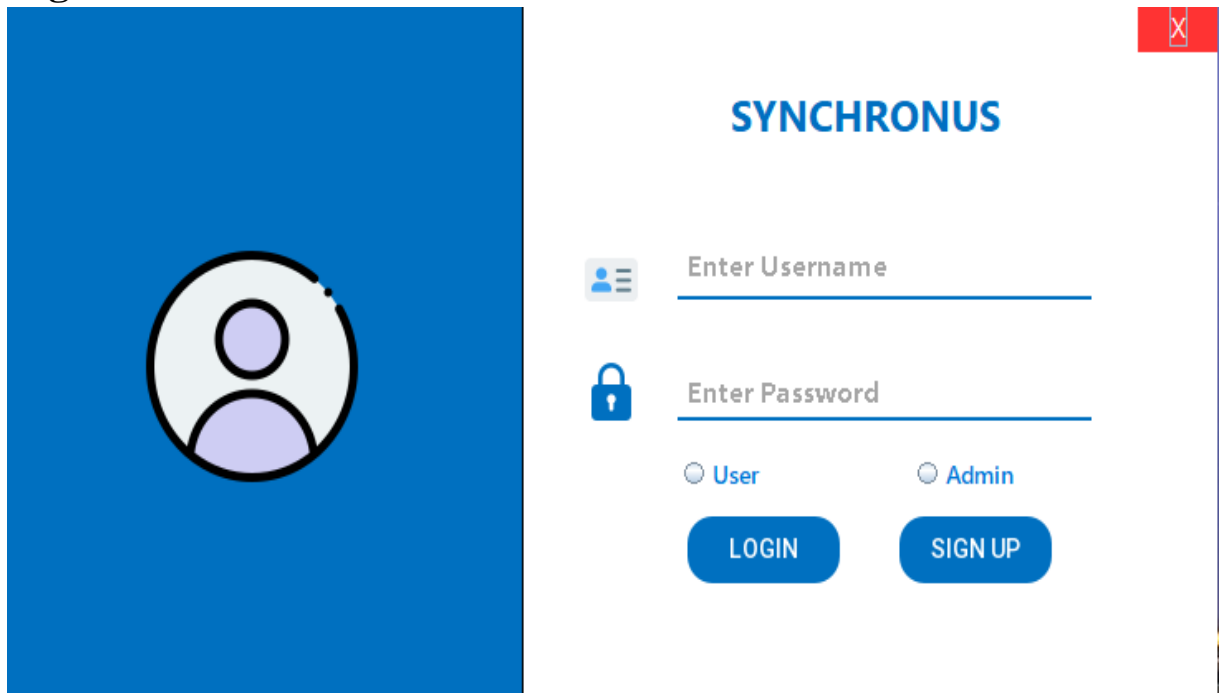

1) Registration Module:

- The registration module, takes the detailed information about the user for creating an account as shown in above img. The data entered by the user is stored at the backend in the registration table of the database.
Every field is provided with validations. For eg.

- If the user enters less than 10 numbers or enters a number starting with less than 7, then as soon as the submit button is clicked, invalid number message will be shown at corner of the field.

- After entering the data according to the validation & clicking the submit button, the data will be stored at backend and "registered successfully" message in dialogue box will be displayed and the user will be directed to

the login page; there onwards login module will be started. The reset button is to reset the fields if incorrectly typed and want to reset everything.

2) Login Module:

- The next module in the procedure of booking appointment is the Login Module. In this module, the user is actually validated after the verification in Registration Module.
- Here, the username & password are checked. The username is checked with the email that is entered during registration and the password checked with the same password as given by user during registration. The data is fetched from the registration table in the database, as soon as the user press the login button. If the password or username is wrong specific invalid messages are displayed.
- After the successful login the user enters into the User Dashboard Module.

3) User Dashboard Module:

- The user dashboard consists of the user profile, booking appointment & after appointment booking viewing the appointment.

- As shown in above images, the Home, Scheduling vaccination & appointment view are the pages that comprise the user dashboard.
- The profile page shows the user details & the vaccination status which are fetched from the registration table & vaccine status table respectively.
- On clicking on Book your slot, appointment booking page is displayed. Here Aadhar number, vaccine type & vaccine centre are the input fields for the user. The data is stored in database in appointments table. Once Book Slot button is pressed then the data is stored & an email is sent to the respective email id, saying that the user has booked the vaccine successfully.
- The View Appointment page is displayed once the view appointment button is pressed, and every detail about user appointment are fetched from database tables and displayed.

4) Admin Module

The admin module is the main operator and controller of this Vaccine Management System. This module is for the customer who asked for this system. Here, stats & stock are managed by the admin.

- Admin can manage stocks and update the user's vaccine status as per the status. To serve this purpose the admin module was developed to ease the process of management
- Vaccine stock management is also a part of admin module. Admin can directly increase or decrease the stock according to the availability.
- Every data is stored and fetched from the database at the backend.

TESTING

Test Cases for Registration Page & Login Page

Test Case ID	Description	Pre-Condition	Input	Output	Status
TC-1	New User Registration for Vaccination	Valid registration details	Username - pqr@gmail.com, Mobile No. - 8525632512, Name - Tushar Kompa, Gender: Male, Password: tushar@124	Registration Successful	Pass
TC-2	Validate Email-Id	Email-Id with @ symbol and domain name	Email-Id - abcx@gmail	Invalid Email-Id	Pass
TC-3			Email-Id - abc@gmail.com	Valid Email-Id	Pass
TC-4	Validate Mobile Number	10-digit mobile number starting with 6, 7, 8 or 9	Mobile No. - 15256325	Invalid Mobile Number	Pass
TC-4			Mobile No. - 8525632512	Valid Mobile Number	Pass
TC-6	Validate Password	Min. 8 alphanumeric inputs with at least 1 special symbol	Password - 123	Invalid Password	Pass
TC-7			Password - Ram@1234	Valid Password	
TC-8	Login to the Vaccination System	Valid username and password (say Username - wxy@gmail.com, Password - Abc_143	Username - Password -	Username and password fields cannot be empty	Pass
TC-9			Username - pqr@gmail.com Password - Abc_143	Invalid Username or Password. Try Again!	Pass
TC-10			Username - wxy@gmail.com Password - abc_134	Invalid Username or Password. Try Again!	Pass
TC-11			Username - wxy@gmail.com Password - Abc_143	Login Successful!	Pass

TEST CASES ON THE USER DASHBOARD MODULE

Case ID	Description	Pre-Condition	Input	Output	Status
TC-1	Check for valid profile details	Login successful	-	Displayed valid profile details for Tushar Kompa	Pass
TC-2	Check my profile to book your slot page navigation	Both pages loaded in the backend	Clicked on Book Your Slot option	Book Your Slot page gets displayed	Pass
TC-3	Check my profile to view appointment page navigation		Clicked on View Appointment option	View Appointment page gets displayed	Pass
TC-4	Check if user has already booked an appointment	Fetch details from appointments table	Opened Book Your Slot page	No appointments in the table. New Appointment panel displays	Pass
TC-5	Book new Appointment	Enter valid details	Aadhar No. – 908234342321 Vaccine – Covaxin Center - City Hospital	Appointment Booked Successfully. Sent mail to the email-Id	Pass
TC-6	Check email confirmation of appointment	Entered valid email-Id	Clicked on Book Slot button	Email received successfully to the user with appointment details	Pass
TC-7	Check vaccine stock while booking slot	Covishield Stock = 0	Choose Vaccine – Covishield	Stock not available for selected vaccine	Pass
TC-9	Check View Appointment page	Appointment already booked	Clicked on View Appointment option	Display appointment details with date, vaccine and center details	Pass

Case ID	Description	Pre-Condition	Input	Output	Status
TC-10	Update vaccine status after booking appointment		Clicked on My Profile page	Vaccine Status changed from Not Vaccinated to Scheduled	Pass

TEST CASES ON THE ADMIN MODULE					
Case ID	**Description**	**Pre-Condition**	**Input**	**Output**	**Status**
TC-1	Login to the admin user	Username – admin Password – admin	Username - admin Password - admin	Login Successful!	Pass
TC-3	Update status of appointment	Fetch data from appointments table	Click on the status > select dose 1.	Display a table containing all appointment details of all users	Pass
TC-5	Update Vaccine Stock	Fetch data from vaccine_stock table	Set 30 in place of 26 in Covaxin stock and clicked on update stock	Stock Updated successfully	Pass
TC-6	Check logout feature	Login page should be loaded in the background	Clicked on logout option	User logged out successfully and login page displayed	

CHALLENGES AND FUTURE SCOPE

During the project development we faced different challenges like handling the data flow between the different modules of project, keeping up with the database and constantly updating the design of the project. While working with the database fetching customer credentials like login ID and Password was a bit difficult. Also scheduling vaccine and sending an email to the registered user was a creating difficulty. As this project was made in a group, we had a problem to organize the work that was done by each of the group members. That's why we created our project as a GitHub repository and it was accessed by all our team members which made us very easy to contribute and organize the data.

This project has a great scope of work in the future, to help in the health sector domain for managing all the needs of a particular system in this project we can add the second dose feature prior to the customer to take the second dose of vaccination during his vaccination period of respected vaccine type. Also, for the admin we can add the functionality of search among the customer who had taken the appointment, this gives admin powers to easily manage the appointments during the vaccination drive. This project can further develop to also manage the bed's for infected people with COVID. By allocating them to the respected hospitals and treatment centres. As this project is in the platform dependant mode this can achieved by shifting this project into a website using frontend development technologies like HTML, CSS and JavaScript.

CONCLUSION

The main intention of this training and project was to get familiar with the industry-oriented experience and understand how projects are developed in real world companies. After developing this project, we got to know about the standards and ethics that are maintained in the company and how every employee is responsible for the company's success. The Vaccine Management System taught us the use of MVC architecture and gave much knowledge about AWT, Swings, JDBC and MySQL database.

As this micro-project is prepared by making a group of students, we learned to develop a good sense of coordination between our group members. We also understood dividing a particular task into different parts, planning and managing the time, helping our group members, strengthening our understanding through group discussions and developing stronger communication skills and responsibilities. Because of this group project, we also understood the importance of communication among the group members.

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