PATHOLOGY LAB MANAGEMENT SYSTEM

Project of CS257

Group G1

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INTRODUCTION

Our web-based application serves as a fruitful database management system for Pathology Labs. It has role-based access, secure otp verification, login system with a user-friendly and interactive interface.

It enables lab staff to add or edit patient, test, equipment, doctor details. They can choose tests for a given patient and place an order for him/her. Opon placing order, the system generates a bill and emails the receipt along with brochure to the patient's email. Patients can fill/ view their details using the app for faster operation which further eases the uses of the application.

Name and Logo of the Hypothtical Laboratory shown: G1 Pathology Lab

LANGUAGES, TOOLS USED

We have used Python, Flask, MySQL, HTML, CSS, Javascript, Bootstrap frameworks for builiding our project mainly. The proper use of these tools have helped us heavily in developing the project efficiently.

USING THE APPLICATION

The code files can be made to run locally on the system. One needs to download the .zip file of our codes from the github repo: https://github.com/InquisitiveMe15/Pathology-Lab-Management-System/ After extracting the files, one can navigate to the proper folders through the terminal.

- Thereafter, create a virtual environment locally using `python -m venv name` and actiavte it using `name/Scripts/activate`
- Following, run `pip install flask, flaskext.mysql, pdfkit` in the terminal and check for any other library that might be causing some difficulty on your system.
- Next, one can run the 'sql_queries.sql' file on their MysqlWorkbench or any other installed database management tool. This will create the database schema on the system.
- Along with this, go ahead and edit the 'app.py' file to fill in your user credetials like 'mysql_username', 'password', 'mail_id', 'mail_password', as required.

Once these steps are complete, go ahead and run `python app.py` This will run the application on localhost port. Navigate to the web page and explore the enjoyable Web Application.

THE APPLICATION

Let us have a brief overview of the key features of the application. The following points highlight some interesting and useful aspects of the project app.

LANDING PAGE

We have make our project in such a way that it can be used both by the labstaff as well as the patients.
Lab staff has a password through which they can enter the system.

Welcome to the G1 Pathology La

Please enter the Lab Password to visit the system software. (Only for lab staff)

Password

Login

Don't have the account? Make c

Name *

ID *

12

Gender *

Age *

Have an account? See your test history! 🙂

Patient ID *

Email Address *

Welcome to the

Please enter the Lab Password to visit the system software. (Only for lab staff)

Password

Login

Already registered patients can view their profile and their test history using their login credentials i.e. their ID and their registered mail.

Have an account? See your test history! 😊

Patient ID *

Email Address *

Submit

An example

Profile Page

Patient ID	1
Full Name	Neha
Gender	Female
Age	19
Email	cse200001051@iiti.ac.in
Mobile Number	9876543210
Address	Haryana

Logout

Test History

Order ID	Date	Test IDs	Total
1	2021-11-17	['A0432', 'B0046', 'C0044']	1060

Here at the profile page **logout** button is also given by clicking on which user will be redirected to the landing page again.
On the landing page we have given the facility to make accounts of the new patients, they can do it themselves.

Name *

Address *

ID *

12

Mobile number *

Gender *

E-mail *

Age *

Submit

Here, user ID will be pre-filled as user don't know whether a particular ID exists or not so he can use the one provided by the database itself.
It has all the verifying features like if the user submits a partially filled form then a warning will be shown and also the ID unique feature is also implemented.

After successfully adding a patient a **green** colour alert will be there that the patient is added successfully and the ID will automatically increment by one.

Patient added successfully !

Name *

Address *

ID *

13

Mobile number *

Gender *

E-mail *

Age *

That's all about the landing page.

Now, we will login into the system using the password.
Then we will land on to the Home page.

HOME PAGE

Here, we have various features like logout, add patient, test, doctor, equipments, place order, etc.
At the bottom of the page contact details are given.

Search Patient | Search patient by name

Add Patient

View Tests

Add Test

CONTACT US

1 N. Cactus Ave., WI 54302
+91-838323862
@g1pathology.management

We have a search bar too for searching registered patients.

Example

Search Patient   N

5 Records Found

PatientID	Name	Gender	Age	Phone No.	Email	Addr
7	Sharvani	Female	19	9536789234	sharvani@gmail.com	Telang
2	Kanchi Pardhi	Female	19	9976543323	cse200001032@iiti.ac.in	Balag
12	Anjali	Female	19	7896546789	anjali@gmail.com	Harya
11	Tanisha	Female	19	9765436786	tanisha@gmail.com	Rajast
1	Neha	Female	19	9876543210	cse200001051@iiti.ac.in	Harya

From here we can view the respective patient profile page and can also edit his/her details.

ADD, EDIT, VIEW PATIENTS

The application provides user-friendly interface to play around with the database in a secure manner. Viewing and Searching for existing patients by their name can be done by the Search Bar.

'Add Pateint' tab opens up a form before us to enter the new patient details. One of the entries of the form, namely, Patient ID comes auto-filled as it is managed by the database automatically to maintain integrity in the system. I f the user forgets to fill any of the required details, an error message notifying him is displayed.

Once some patient has been added successfully to the system, we can go ahead and Edit any of his details.

ADD, EDIT, VIEW DOCTORS

Similar features go ahead for the 'Doctors' field, we can add new doctors to the database by filling up a form, edit the details of the existing doctors, and also view the list of all doctors associated with the lab, under the 'Doctors' tab.

Our Hard Working Doctors

Doctor ID	Doctor Name	Email	Mobile Number	Edit
1	ISHA MOHAN	isha@gmail.com	+916393716756	EDIT
2	Vibha Shetty	vibha@iiti.ac.in	987483897	EDIT
3	Amitha Sharma	amithasharma@iiti.ac.in	938487378	EDIT
4	Sushant Umre	sushant@gmail.com	9847339898	EDIT
5	Meera Verma	meera@gmail.com	967867866	EDIT
6	Anil Gulati	anilg@gmail.com	8238499324	EDIT
7	Bhavya Mishra	bhmi@gmail.com	96788686787	EDIT

ADD

Screenshot (962).png   ^

New Doctor Details
Please fill all the required details first !

Do you have any questions? please do not hesitate to contact us! 🙂

Name *

Rishab Rastogi

ID *

8

Email Address *

rishab@gmail.com

Mobile Number *

Submit

Screenshot (963).png   ^   Screenshot (962).png   ^

ADD, EDIT, VIEW TESTS

'Test' is another entity that we have used in our system, the receptionist can add new Tests to the database, along with their details like Test Name, Price, and also Edit them later if needed. Similarly, all the available tests can be seen in the form of a table under the 'View Tests' option. In all these cases, the unique feature of IDs is auto-maintatined by the system, without us having to worry about it.

Available Tests

Test ID	Test Name	Price(in rupees)	Edit
1	Amylase	550	EDIT
298	Insulin	500	EDIT
3	Calcium	200	EDIT
34	Maltose	700	EDIT
5	CD4 Count	150	EDIT
51	Cardiolipin	450	EDIT
6	Urea	250	EDIT
8	Dengue IGM	800	EDIT

Edit Test

Test details updated.

Do you have any questions? please do not hesitate to contact us! 😊

Name *

Insulin

ID *

298

Price *

600

Submit

ADD, EDIT, VIEW, DELETE EQUIPMENTS

The user can likewise maintain the database of the available Equipments in the pathology lab. Adding, Editing Equipments can be done similar to the above entities, along with that any of the equipments can be Deleted from the database with the Delete option. We also maintain the STock Quantity of each equipment in the laboratory, and if the available quantity of any equipment is below 20, we show a warning for the same to be refilled.

Equipments

Equipments whose quantity left is below 20 :

Trephine,

Equipment ID	Equipment Name	Price	In Stock	Edit
1	Ointment	600	26	EDIT
3	Cotton	20	34	EDIT
4	Syringe	300	40	EDIT
6	Trephine	500	10	EDIT
7	Beaker	250	30	EDIT
9	GlassBeaker	250	40	EDIT

ADD

New Equipment Details

Do you have any questions? please do not hesitate to contact us! 😊

Name *

Gel

ID *

8

Price *

100

In Stock *

10

Submit

Screenshot (967).png

So these cover up all the entities used in the system.

PLACE ORDER

The order can be placed for the patient by filling all the required details in place order page. .

CHOOSE TESTS

OrderID: 17

OrderID : *

24

Patient name : *

NULL

Patient ID : *

NULL

Prescribed By *

NULL

Doctor ID : *

NULL

Activate Windows
Go to Settings to activate Windows

127.0.0.1:5000/placeOrderPage

Doctor ID : *

NULL

SELECT TESTS

Test 1

NULL

Test 2

NULL

Test 3

NULL

Test 4

NULL

Submit

Activate Windows
Go to Settings to activate Win

Then we click on proceed to payment.

OTP VERIFICATION

And the otp verification page opens up.

BILL

Order ID : 28
NAME OF PATIENT : Kanchi
REGISTERED EMAIL OF PATIENT : cse200001032@iiti.ac.in
PRESCRIBED BY : Amit Desai

Test ID	Test Name	Price(in rupees)
1	Amylase	475
3	CBC	310

Activate Windows
Go to Settings to activate Windows.

TOTAL AMOUNT = RS. 785

Then otp is sent to the patient.

TOTAL AMOUNT = RS. 785

Proceed to Payment

Send PDF

Activate Windows
Go to Settings to activate Windows.

OTP Verification

cse200001032@iiti.ac.in

Send OTP to this Email-Id

OTP Verification

One-time password has been sent to the email id. Please check the email for the verification.

Enter OTP:
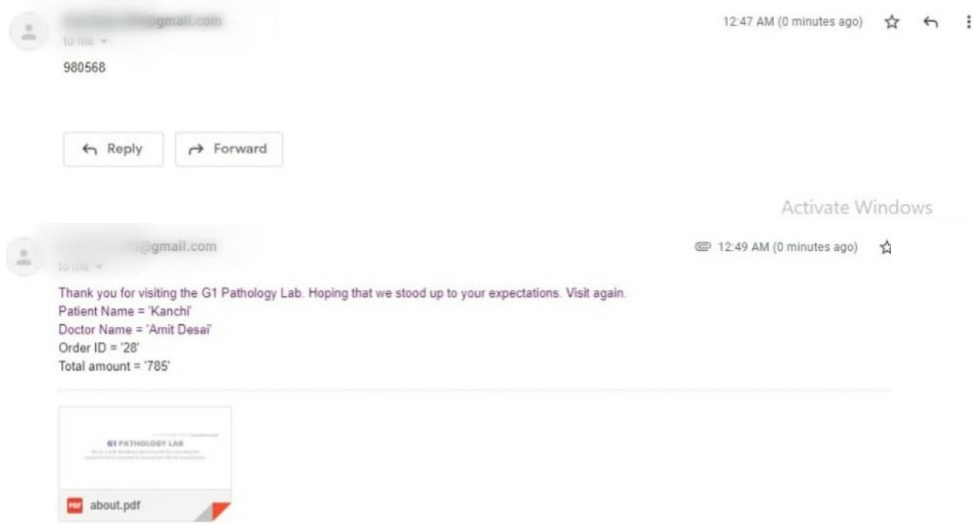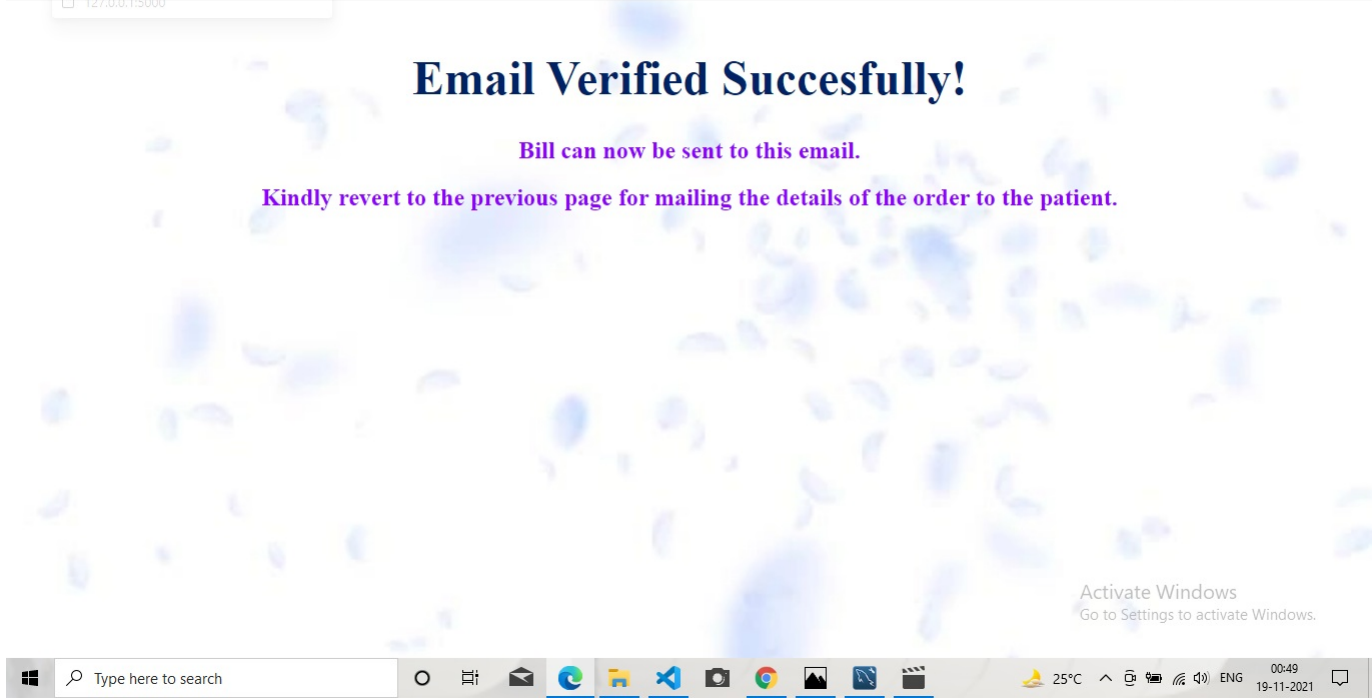
Submit

MAILING THE BILL

After verifying otp the bill is mailed to the patient along with the pdf of pathalogy lab brouchre.

Email Verified Succesfully!

Bill can now be sent to this email.

Kindly revert to the previous page for mailing the details of the order to the patient.

Activate Windows
Go to Settings to activate Windows.

980568

Reply   Forward

Thank you for visiting the G1 Pathology Lab. Hoping that we stood up to your expectations. Visit again.
Patient Name = 'Kanchi'
Doctor Name = 'Amit Desai'
Order ID = '28'
Total amount = '785'

about.pdf

CONCLUDING

This sums up our project. We all teammates would like to thank our faculty, course teachers for providing us this wonderful opportunity to work on this enriching project. Working in this amazing team group has been a pleasnt journey full of new learnings each day. We built upon our tech and soft skills, with each phase of developing this project. Thank you very much.