A REPORT

on

"Organ Donation and Procurement Management System"

By

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Under the Guidance of
Prof. Sushma Vispute

T.E. (COMPUTER ENGINEERING) 2021-22 (Semester II)

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Certificate

This is to certify that the report entitled

""Organ Donation and Procurement Management System""

Submitted By

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is approved by **Prof. Mrs. Sushma Vispute** for submission. It is certified further that, to the best of my knowledge, the report represents work carried out by my students as the partial fulfillment for T.E. Computer Engineering (Semester II) Seminar and Technical communication Laboratory Work as prescribed by the Savitribai Phule Pune University for the academic year 2021-22.

Prof. Sushma Vispute	Prof. Dr. K. Rajeswari
(Project Guide)	(Head of the Department)

Place: Pune

Date: 13/11/2021

Abstract

The Organ Donation and Procurement System (ODPS) is developed mainly for general hospitals (GH), clinics and other health centers to manage the donor registration and user maintenance. It is an online system which only can be access or valid in Maharashtra state. The public can retrieve information about organ donation in this web site. People who interested can register themselves through this system. Furthermore, the authorized user's account will be maintained by the administrator. The donor record will be managed by admin and doctors. Only administrator has the authority and privileges to print organ list report and total donation report according to district from this system. An analysis study has been done based on the current manual system and all the problems statements and requirements have been identified. Moreover, ODPS is three tier architecture system which involves client tier, business tier and database management tier. The interfaces for ODPS have been designed according to the requirement and needs of the current market Rather than that, this system also has been tested and evaluated in real life. This Online Organ Donation Management System will help to improve the performance of current situation and overcome the problems that arise nowadays.

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Chapter 1: Introduction

a) Problem Statement

It is known that India has performed the second largest transplants in the year 2019(first being United States), but India still lags a lot. Only 0.01% of people donate their organs after death and the number of live donors is more in India. The Problem statement for the project is the "Organ Donation and Procurement Management System" to spread awareness and give an easy facility to our people to save life.

In this application we are adding the features in which we are taking input from recipients and donors as well in form of their personal details mainly including blood type and organs to donate and organ in seek off and their location. In accordance with our research, we found that fulfilling the urgency organs required is a must, though there is a waiting list procedure .An organization side of application/admin part in which the data of the donor and recipient will be shown and the admin can also manage the waiting list shown to the recipient and can pass on the further details. And a message portal which will connect both the application so that the donor as well as the recipient can send a message to the admin through website or can make contact to the organization directly.

As to help or fulfill people's requirement we developed the web application. The report discusses the result of the work done in development of "Websites for Organ donation on "HTML" and "PHP" Front-end Platform and "My sql" as back-end Platform. At the development of an application PHP provides a good connecting facility between all pages, also the back-end My sql is most important to save all the data related the application.

#Need of Organ Donation Websites:

- To promote organ donation for transplantation as a treatment for many life threatening diseases including heart disease, kidney disease, liver disease, diabetes and cystic fibrosis
- To educate and inform the community, patients and their families and health professionals about organ and tissue donation to markedly improve rates of donation.
- To work in partnership with Department of Health (DOH), clinicians, and hospitals to promote best practice professional training and ensure that the family of every potential donor is offered the option of donation in a caring and respectful manner.
- To provide support, care, information and advocacy for people and with end stage organ failure, donor families, living donors transplant recipients and their families.
- To provide policy advice to DOH, clinicians and hospitals.
- Assuring compliance with all external regulatory bodies, including but not limited to: the Organ Procurement and Transplantation Network (OPTN), the United Network for Organ Sharing (UNOS),Centers for Medicare and Medicaid Services (CMS) Conditions of Participation (COP), the Missouri State Department of Health (DOH), The Joint Commission (TJC) Standards
- Ensuring the programs accreditation
- Identifying opportunities for improvement
- Prioritizing performance improvement and patient safety projects within organ transplantation
- Continuously audit compliance and regulatory standards related to organ transplantation
- Ensuring policies and procedures applicable to organ transplantation are evidence based, regularly reviewed and audited for compliance.

b) Project Idea

In the healthcare context, organ transplantation has raised to great importance in the last years. Improvements in medical techniques and pharmacological anti-reject therapies have made transplantation a powerful and valid way to treat diseases. The increasing complexity of

new technologies, the inadequate organization of the healthcare delivery system, the increased proportion of health care devoted to chronic conditions, and current constraints on taking full advantage of changes in information technology have all contributed to a healthcare system that is overburdened, inefficient, and often inequitable.

c) Motivation

Organ transplantation is the only option to save lives in patients affected by terminal organ failures and improve their quality of life. However, there is a disparity exists between the supply and demand of donated organs, leads to a loss of many lives. The number of organ transplantation have gradually increased in the last two decades and provide excellent results in children and young adults, and are challenging by the growing proportion of elderly transplant patients with co morbidity. The results of organ transplantation continue to improve, as a consequence of the innovations and the improvements in peri-operative management.

Although living donation has always been an option for some types of transplants, many programs have been reluctant to promote it, as living donation requires invasive surgery on a healthy person with associated risks of morbidity and mortality. The aim of the micro project is to build the logical knowledge in the programming field.

This mini project also aims at learning more about the concepts in Web Development and to learn more about coding using its concepts So the main aim was to develop a system that will be the middleware between patient and the donor. And the main motivation is to contribute in helping the people.

d) Scope

Recent works with technology has been performed with much research in the medical field. Organ procurement continues to be the only hope for thousands of patients awaiting

life-saving transplantation procedures. So it can be used in many different fields and can be middle ware for the donor and the patient. The system can also enhance to interface with the various third party and government run system to complete the government enforced legal and regulatory requirements.

In this, we tried to explore the relevant significant works, their techniques, and the effectiveness of the methods and the scope of the improvement of the results. This system which can bring remarkable improvement in timely procurement, accurate stereotyping, and resolving ethical, legal and clinical issues. It also helps to attain a healthy patient graft survival.

e) Outcomes

- Analyze and synthesize the identified problem from technological perspective
- Design the reliable and scalable solution to meet challenges
- Evaluate the solution based on the criteria specified
- Inculcate long life learning attitude towards the societal problems.

f) Literature Survey/ Requirement Analysis

- PHP: -PHP is a widely-used general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. All server side code was written in php. As mentioned the design was done in Windows in a WAMP environment and then the code was ported and hosted on Apache in Linux.
- Apache: -The web server used is Apache with the php plug-in. Apache again is a very reliable web server on both Windows and Linux and also maintains a very similar interface in both.

- MySQL: -The database system used is MySQL which is an open source RDBMS. It is very light and highly functional. Also with PHP and MySQL being used together very frequently a lot of online support was available.

- **Requirement Analysis**

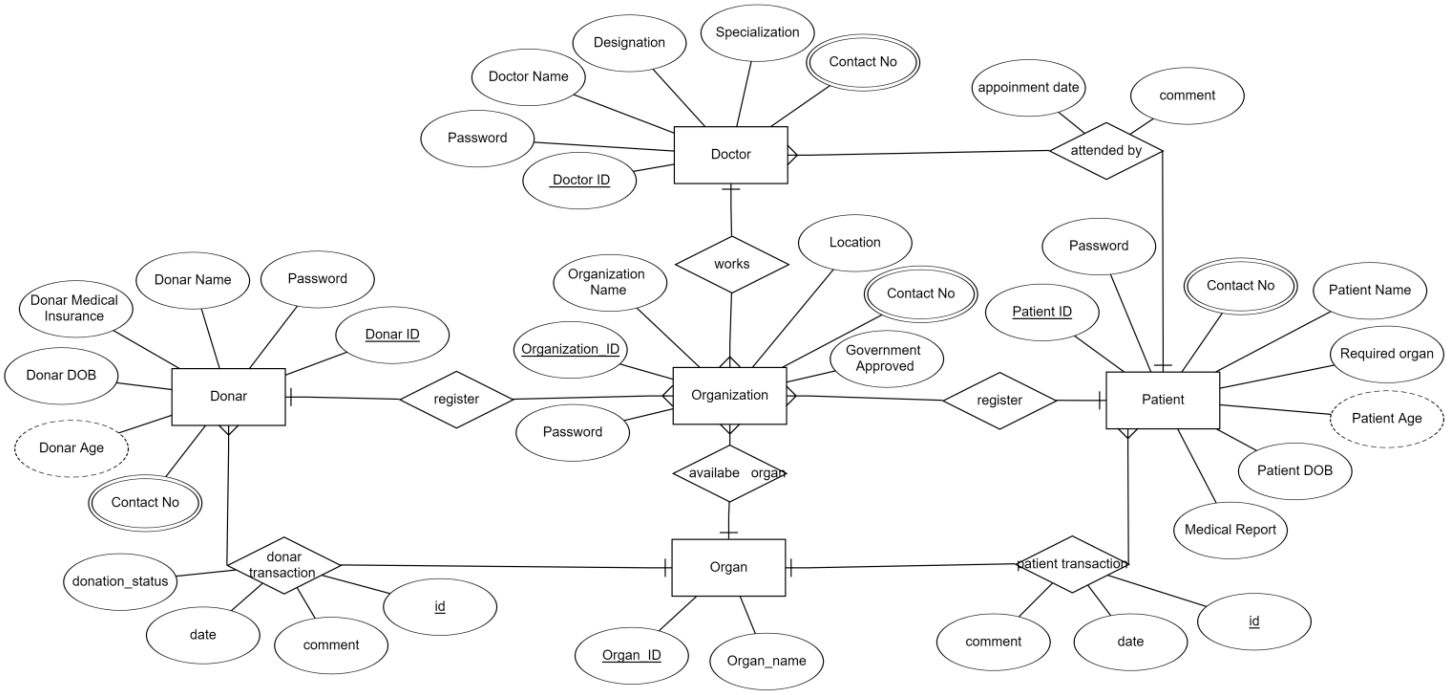
Software used	Description	Tool
Operating system	We have chosen Windows operating system for its best support and user-friendliness.	Windows OS
Database	To save the Organization records we have chosen MySQL database.	Backend
HTML,PHP,CSS	To implement the project we have chosen these languages for its more interactive support.	Frontend

Chapter 2: Project Design

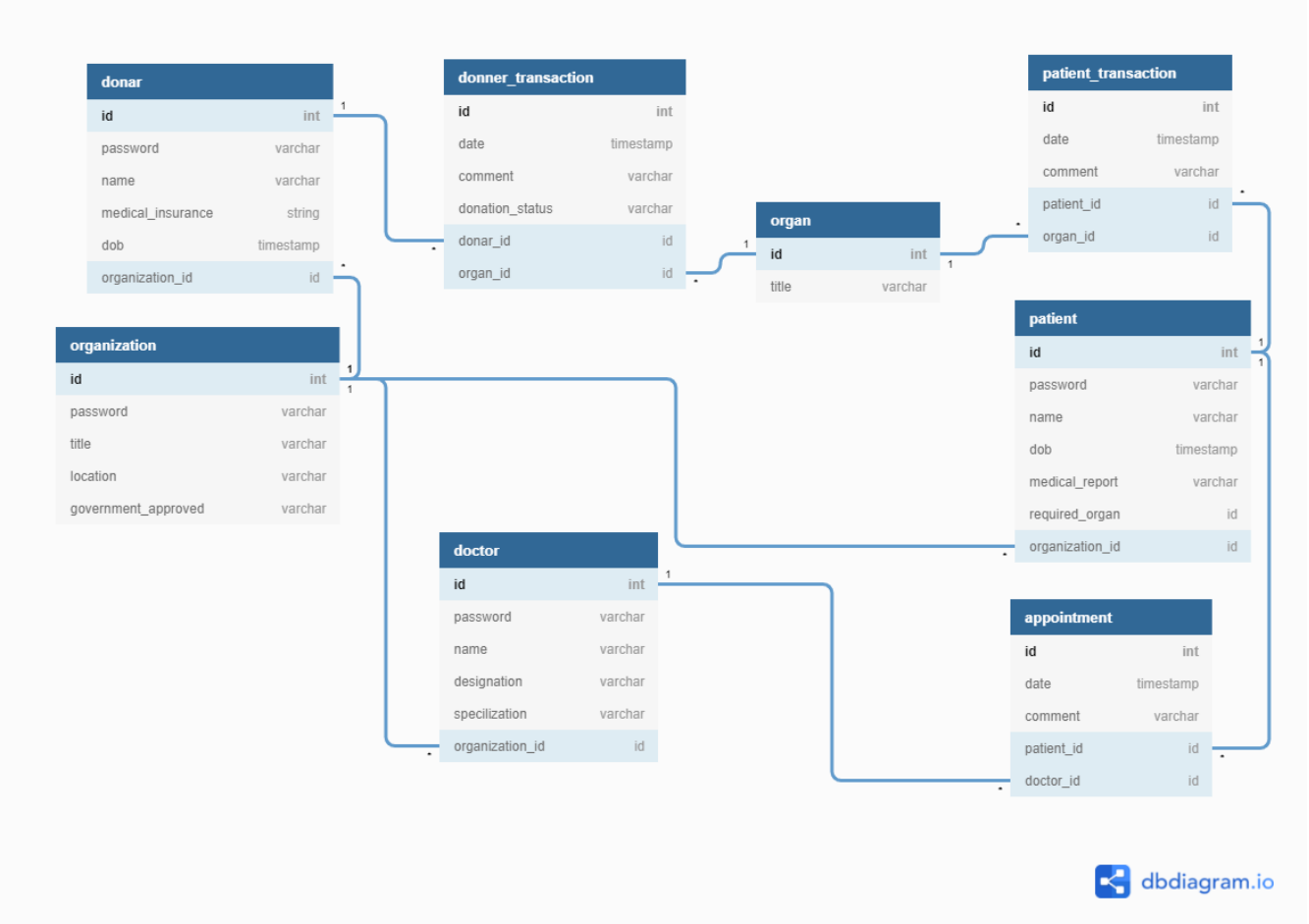
A) Requirements:

- Operating System: Windows, Ubuntu
- Back End : MySQL
- Front End : HTML, CSS3 and PHP
- Server: local host We are going to perform the project on windows platform so we need the OS as windows. Any version of windows as windows xp or above. The system should have minimum ram of 1 GB as well as minimum storage capacity of 15GB.The system should contain the server software named as Xampp of version 3.1.4.1VC11. And MySQL of version 5.7.23 or above. First, we have to install both software and we have to do connectivity between them by changing the configuration file of PHP file.

B) E-R Model:



C) Schema of all tables:



D) Normalization Procedure Applied:

NORMALIZATION UP TO 3NF

First Normal Form:

A table is said to be in First Normal Form, if and only if each attribute of the relation is atomic. That is, each row in a table should be identified by primary key. No rows of data should have repeating group of column values. And we have achieved 1NF by converting multi-valued attribute into separate entities like Address.

Second Normal Form:

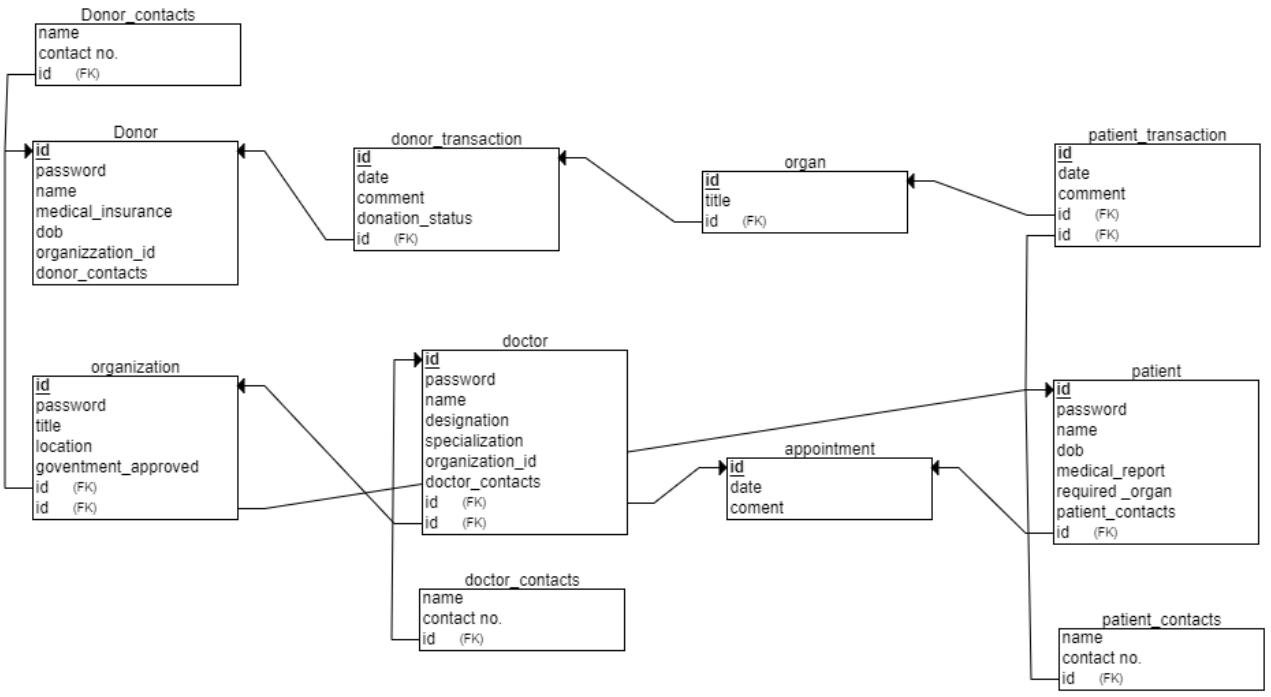
A relation is in Second Normal Form, if it is in 1NF and no non-prime attribute is dependent on any proper subset of any candidate key of the relation. All the tables which are part of this project are in 2NF as they have at most one primary key, so no partial dependency.

Third Normal Form:

A Table is in third normal form, if and only if both of the following conditions holds:

1. The relation table is in Second Normal form.

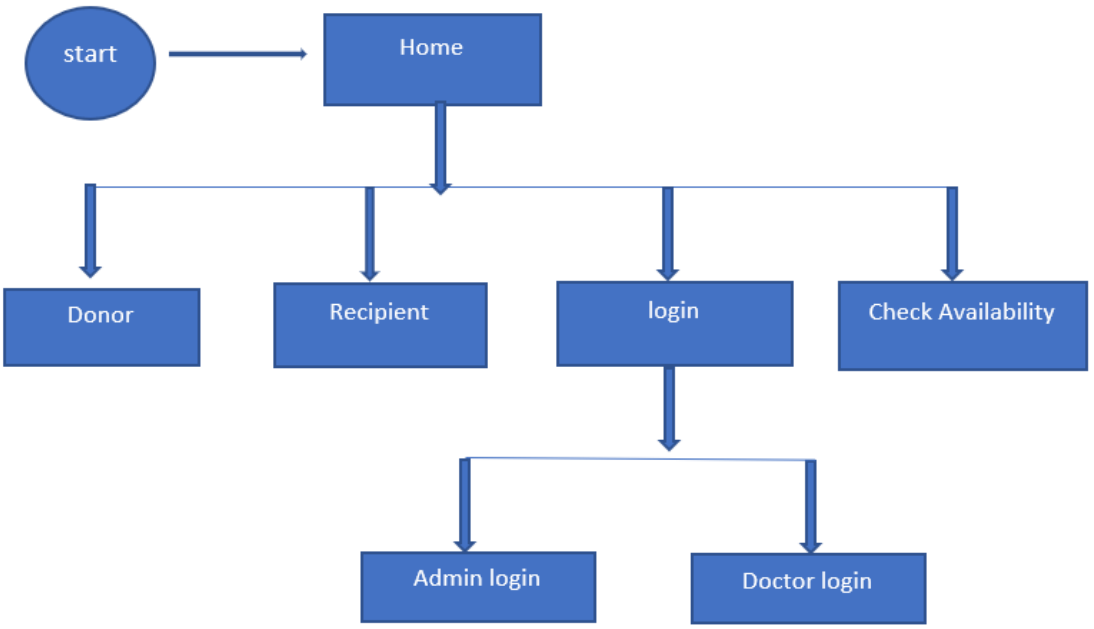
2. Every non-primitive attribute of table is non-transitively dependent on every key if table. And all the used tables satisfy both these conditions and hence are in 3NF.



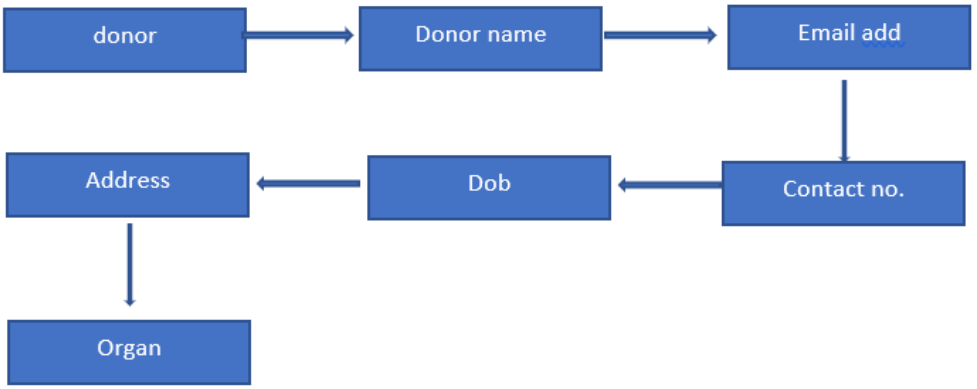
Chapter 3: Module Description

a) Block diagram with explanation of each module

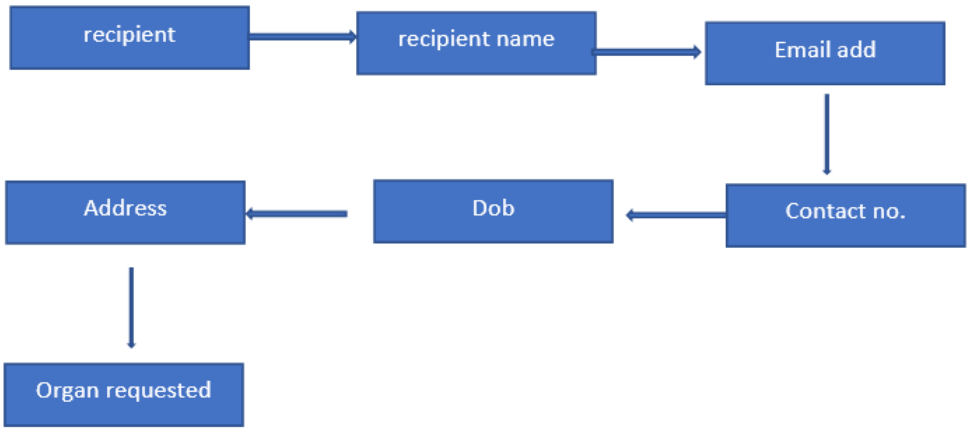
Home: This is the homepage of the website. It contains name of the website and some additional information. It has links to further modules.



Donor: In this module we can provide details about application regarding organ donation it has fields for name, email add, contact no, Dob, address and the organ.

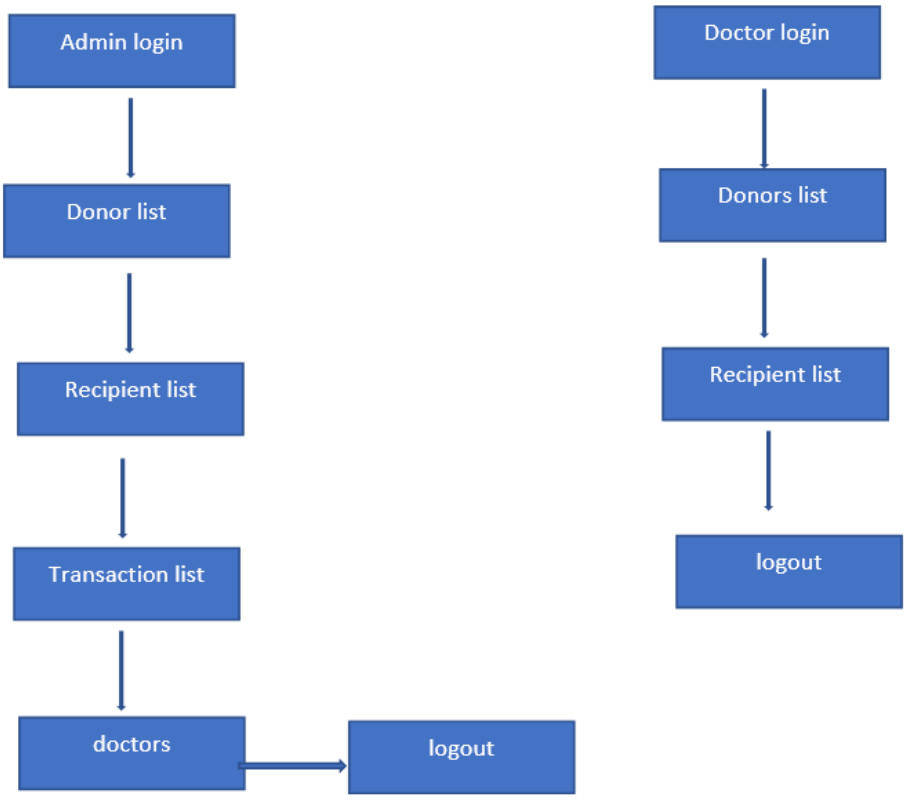


Recipient: In this module we can provide details about application regarding organ requirement..it has fields for name, email add, contact no, Dob ,address and the organ to be requested .



Check availability: we can check the availability of the required organ.

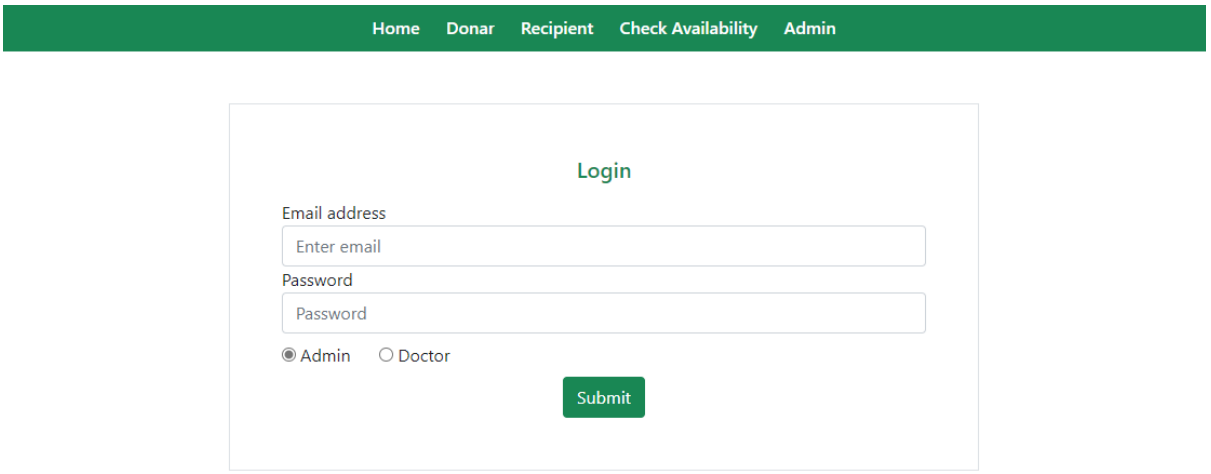
Login: this module has login of two types i.e. for admin and doctors. After doctor login, doctor has access to list of donor and recipient. after admin login ,it has access to donor, recipient, transactions and doctors tab.

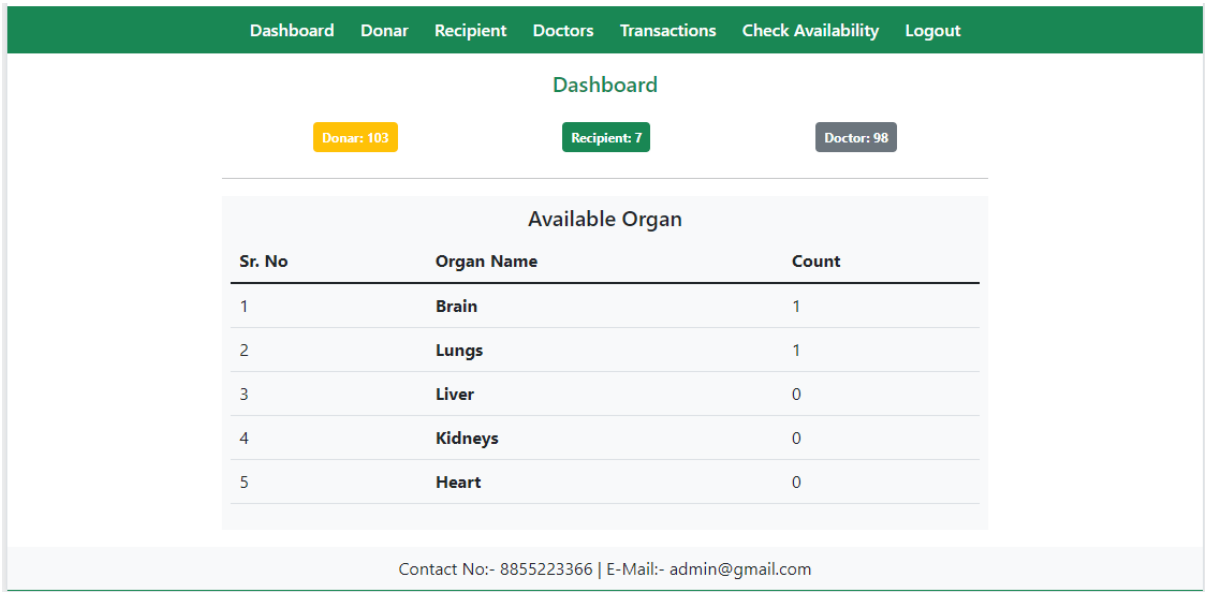


Chapter 4: Results & Discussion

a) Source code

a) Screen shots including GUI





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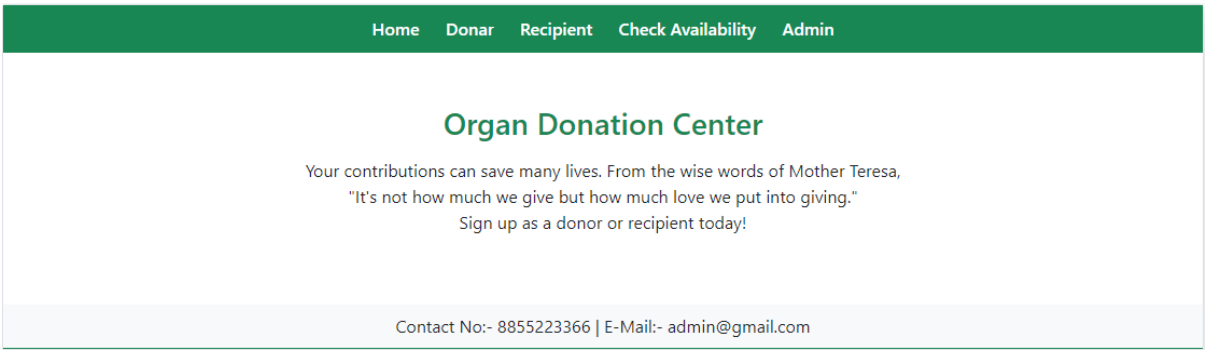
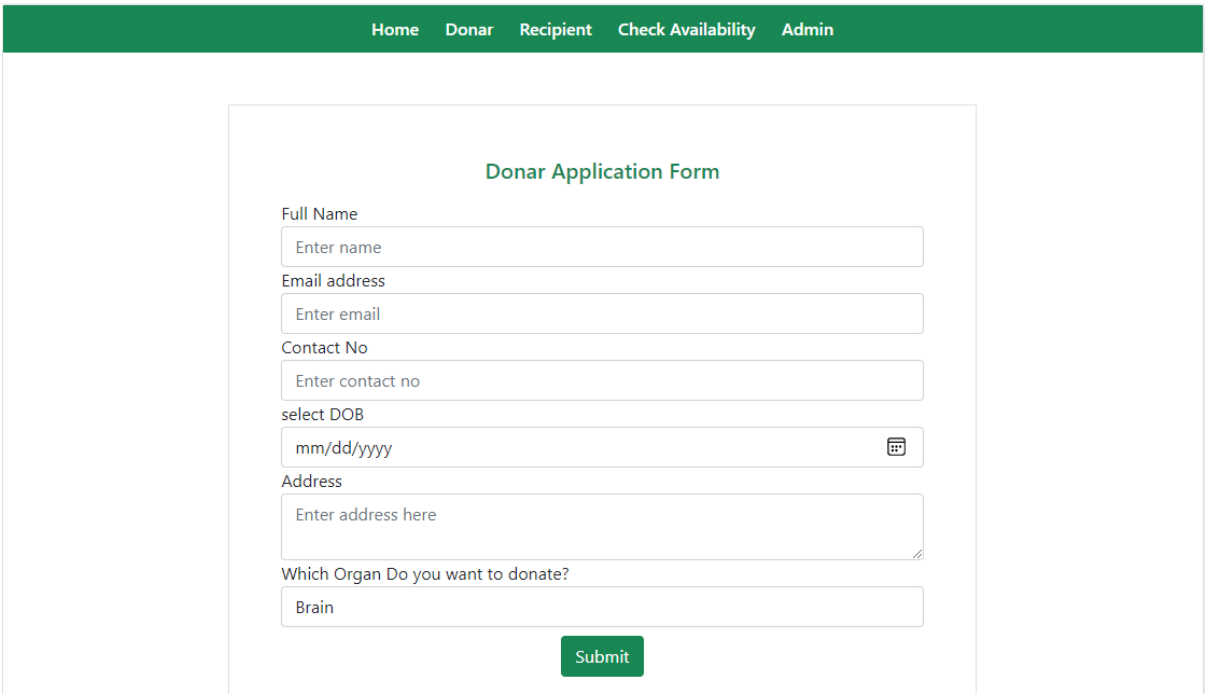
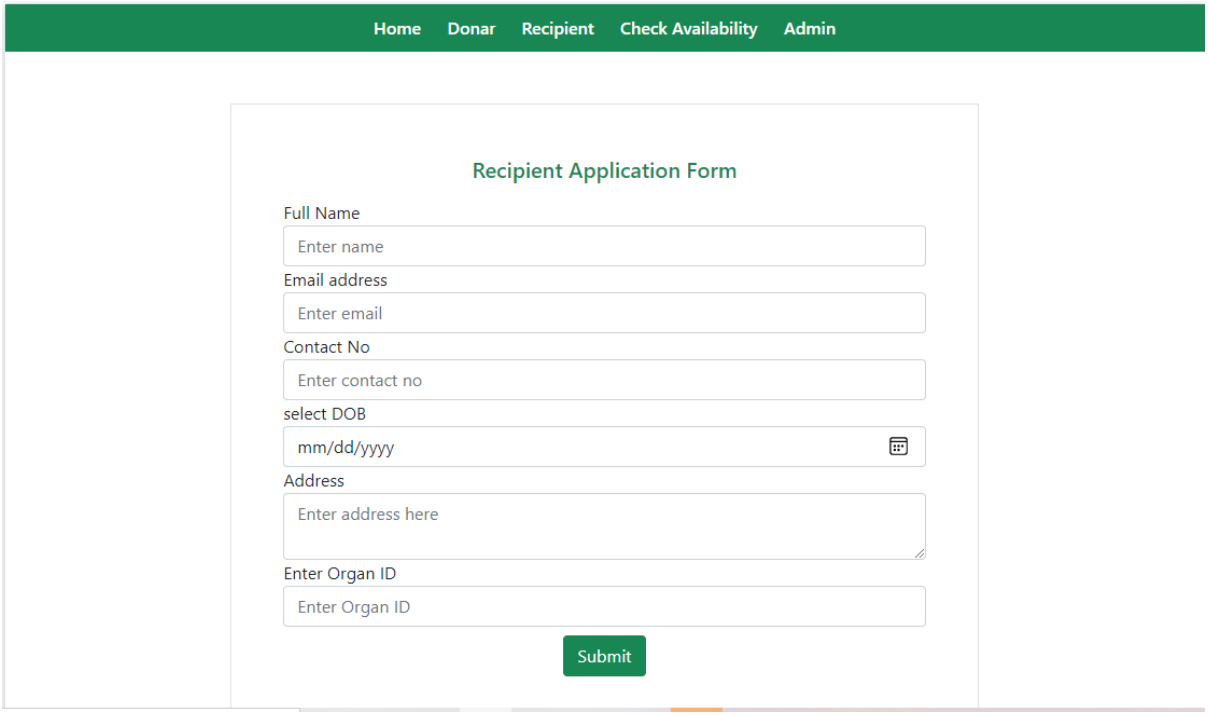
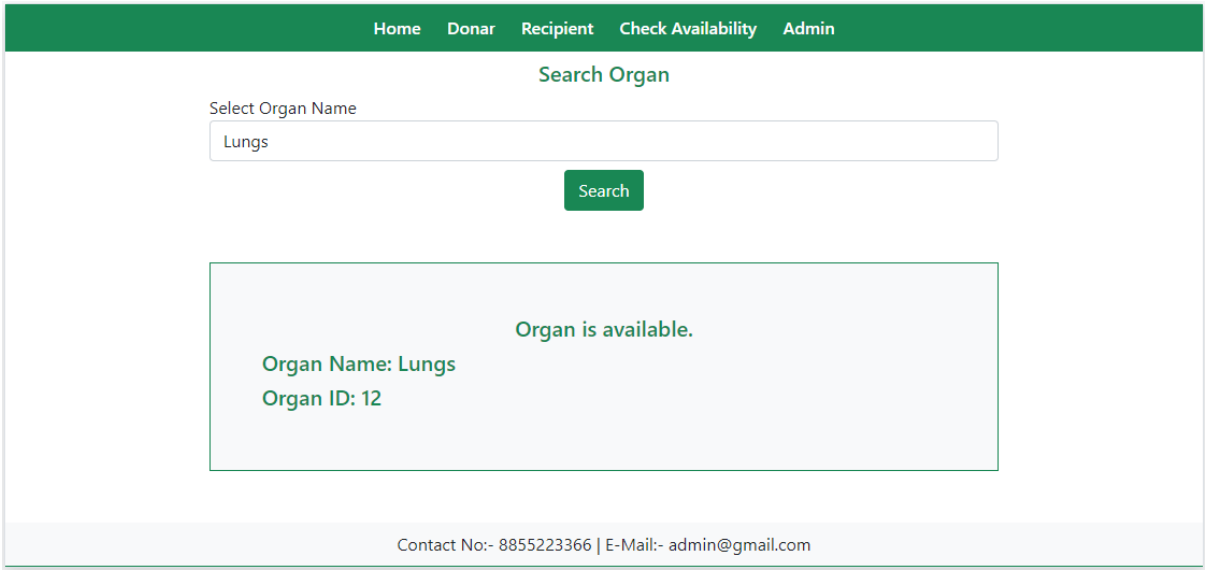
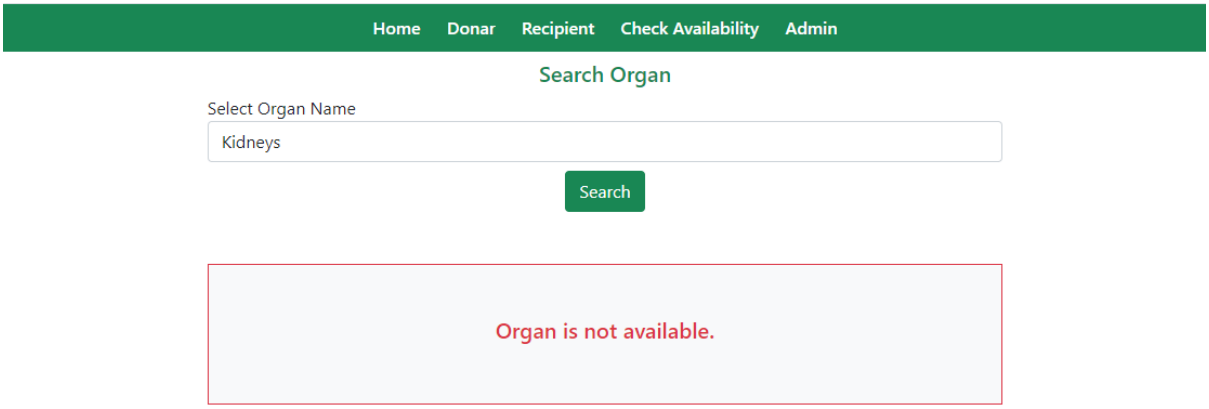
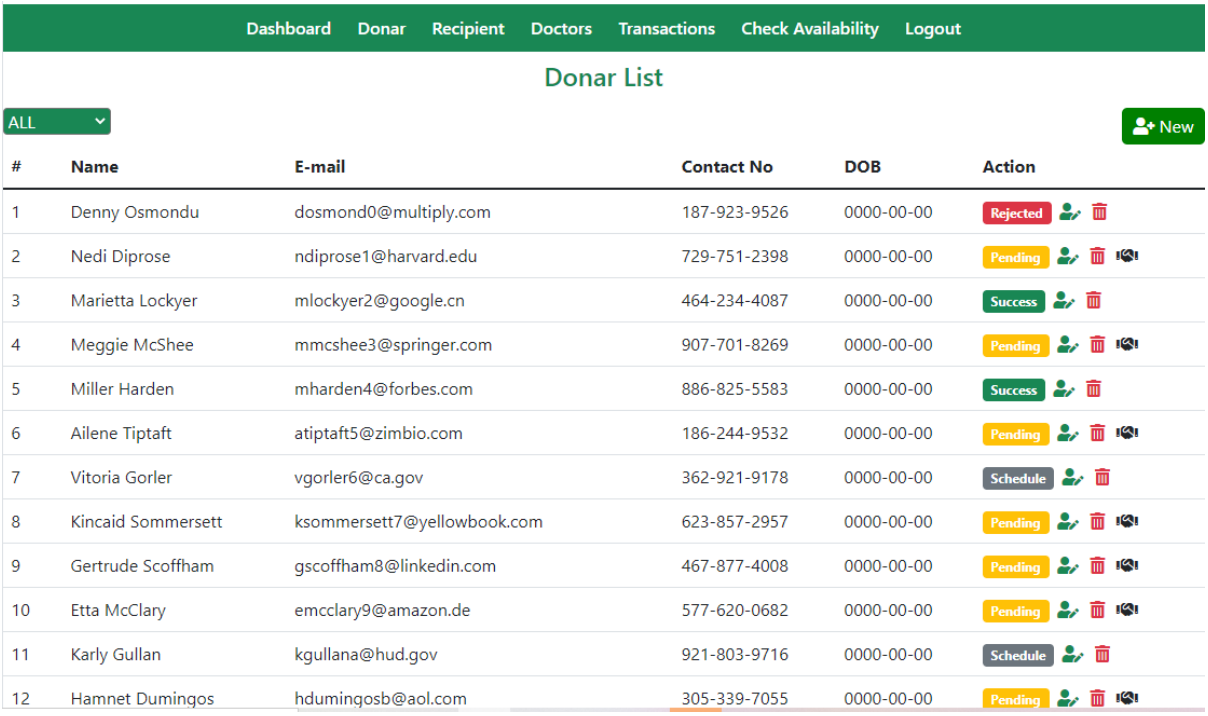

Home
Donar
Recipient
Check Availability
Admin
Organ Donation Center
Your contributions can save many lives. From the wise words of Mother Teresa,
"It's not how much we give but how much love we put into giving."
Sign up as a donor or recipient today!
Contact No:- 8855223366 | E-Mail:- admin@gmail.com


Home
Donar
Recipient
Check Availability
Admin
Donar Application Form
Full Name
Enter name
Email address
Enter email
Contact No
Enter contact no
select DOB
mm/dd/yyyy
Address
Enter address here
Which Organ Do you want to donate?
Brain
Submit


Home
Donar
Recipient
Check Availability
Admin
Recipient Application Form
Full Name
Enter name
Email address
Enter email
Contact No
Enter contact no
select DOB
mm/dd/yyyy
Address
Enter address here
Enter Organ ID
Enter Organ ID
Submit


Home
Donar
Recipient
Check Availability
Admin
Search Organ
Select Organ Name
Lungs
Search
Organ is available.
Organ Name: Lungs
Organ ID: 12
Contact No:- 8855223366 | E-Mail:- admin@gmail.com





#	Name	E-mail	Contact No	DOB	Action
1	Denny Osmondu	dosmond0@multiply.com	187-923-9526	0000-00-00	Rejected
2	Nedi Diprose	ndiprose1@harvard.edu	729-751-2398	0000-00-00	Pending
3	Marietta Lockyer	mlockyer2@google.cn	464-234-4087	0000-00-00	Success
4	Meggie McShee	mmcshee3@springer.com	907-701-8269	0000-00-00	Pending
5	Miller Harden	mharden4@forbes.com	886-825-5583	0000-00-00	Success
6	Ailene Tiptaft	atiptaft5@zimbio.com	186-244-9532	0000-00-00	Pending
7	Vitoria Gorler	vgorler6@ca.gov	362-921-9178	0000-00-00	Schedule
8	Kincaid Sommersett	ksommersett7@yellowbook.com	623-857-2957	0000-00-00	Pending
9	Gertrude Scoffham	gscoffham8@linkedin.com	467-877-4008	0000-00-00	Pending
10	Etta McClary	emcclary9@amazon.de	577-620-0682	0000-00-00	Pending
11	Karly Gullan	kgullana@hud.gov	921-803-9716	0000-00-00	Schedule
12	Hamnet Dumingos	hdumingosb@aol.com	305-339-7055	0000-00-00	Pending

Dashboard Donar Recipient Doctors Transactions Check Availability Logout

Doctor List

New

#	Name	E-mail	Contact No	Qulification	Organization	Action
1	doctor	doctor@gmail.com	123456789	BE	OYO	
2	Jeanie Laise	jlaise4@hhs.gov	544-633-4184	BG	Realfire	
3	Anderson Reville	areville5@nhs.uk	771-333-9981	CN	Photolist	
4	Gladi Molloy	gmolloy6@edublogs.org	313-364-2536	CN	Skippad	
5	Maynord Fernan	mfernan7@timesonline.co.uk	559-479-5356	PH	Edgetag	
6	Allis Dufton	adufton8@spotify.com	927-363-7631	RU	Twitterbeat	
7	Camel Beney	cbeney9@springer.com	427-167-5957	BR	Kare	
8	Mitch Hinstock	mhinstocka@ucsd.edu	129-402-6891	PH	Vinder	
9	Padraig Perillo	pperillob@barnesandnoble.com	134-545-0212	EE	Livepath	
10	Theodoric Hempel	thempelc@thetimes.co.uk	878-990-1167	CN	Eayo	
11	Rick Laugharne	rlaugharned@facebook.com	257-767-5315	CN	Twiyo	
12	Conroy Camplen	ccamplene@wikispaces.com	558-992-6552	KZ	Eabox	

Dashboard Donar Recipient Doctors Transactions Check Availability Logout

Transaction List

#	Organ Name	Donar Name	Donar Email	Recipient Name	Recipient Email
1	Lungs	Sibylle Daintrey	sdaintreyk@unicef.org	MNK	mnk@gmail.com
2	Kidneys	Carmon Venables	cvenablesw@printfriendly.com	Rahul	rahul@gmail.com

Contact No:- 8855223366 | E-Mail:- admin@gmail.com

Dashboard Donar Recipient Doctors Transactions Check Availability Logout

Recipient List

ALL

New

#	Name	E-mail	Contact No	DOB	Action
1	umesh	umesh@gmail.com	4561230	2021-11-18	Success
2	Amol	amol@gmail.com	789456123	2021-11-17	Pending
3	Rahul	rahul@gmail.com	7894563210	2021-11-10	Success
4	Ankur	ak@gmail.com	789456	2021-11-15	Rejected
5	Anmol	anmol@gmail.com	78899456130	2021-11-25	Rejected
6	ak Mk	ak@gmail.com	4561230	2021-11-17	Pending
7	MNK	mnk@gmail.com	122589634	2021-11-18	Success

Contact No:- 8855223366 | E-Mail:- admin@gmail.com

b) **Test cases**

Test Case

Test Case ID:TestCase_1	**Test Designed by:** Jyoti Tapkir
Test Priority (Low/Medium/High): Med	**Test Designed date:**13/11/2021
Module Name: Login Module	**Test Executed by:** Jyoti Tapkir
Test Title: Validate Login procedure	**Test Execution date:** 13/11/2021
Description: Test the Login Page	

Pre-conditions: Login Page should take username and password input

Sr.no	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1	Test the functionality of Login with normal Password	Enter Password: 1701480198	Message will appear "Login Successful "	Message will appear "Login Successful "	Pass
2	Test the functionality of Login with Password having	Enter Password: 170148019	Should not accept the Password	Message appears "Invalid	Pass

	character less than 10 numbers			Password”	
3	Test the functionality of Login with student username	Enter UserName: Jyoti5201	Should not accept username	Message appears “Invalid username”	Pass
4	Test the functionality of Login with student username	Enter UserName: Jyoti	Should not Accept user Name	Accepted User Name	Pass
5	Test the functionality of Login with blank username	Enter UserName: ------	Should not accept username	Message appears “Please enter your username”	Pass
6	Test the functionality of Login withteacher’s blank Password	Enter Password : ------	Should not accept password	Message appears “Please enter your password ”	Pass
7	Test the functionality of Login with Teacher’s username	Enter Username: Mr. Stark	Message will appear “Login Successful ”	Accepted Username	Pass
8	Test the functionality of Login. Provide Teacher’s password lesser than 10 characters	Password: 5201	Invalid Password	Message appears “Enter valid password ”	Pass
9	Test the functionality of Login. Provide valid Teacher’s password	Check characters of minimum 10 character: 9822932171	Accept Password	Accepted Password	Pass
10	Test the functionality of	Enter Username: ------	Should not	Message appears	Pass

	Login with blank teacher's Username		accept username	"Please enter your username"	
11	Test the functionality of Login. Provide admin username	Checking if username length is equal to 5 and username="Admin" "Admin"	Username should be accepted	Username accepted	Pass
12	Test the functionality of Login. Provide admin password	Checking if username length is equal to 5 and username="Admin" "Admin"	Password is accepted	Password accepted	Pass
13	Provide alphanumeric username	Checking if username accepts alphanumeric username	Username should be rejected	Password rejected	Pass
14	Leaving Login form blank	Checking form Validation	Should display "Fill the field its mandatory "	Message displayed "Fill the field its mandatory "	Pass

Test Case

Test Case ID:TestCase_1

Test Designed by: Jyoti Tapkir

Test Priority (Low/Medium/High): Med

Test Designed date:13/11/2021

Module Name: Login Module

Test Executed by: Jyoti Tapkir

Test Title: Validate Login procedure

Test Execution date: 13/11/2021

Description: Test the Login Page

Pre-conditions: Login Page should take username and password input

Sr.no	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Test the functionality of registration of the donor	Enter Details: Add	Message will appear “Registration successful ”	Message will appear “Registration successful ”	Pass	
2	Test the functionality of registration of recipient	Enter Details: add	Message will appear “Registration successful ”	Message will appear “Registration successful ”	Pass	
3	Test the functionality of registration of the donor	Enter Details: Missed a field to be added	Should not accept form	Please fill the details	Pass	
4	Test the functionality of registration of the	Enter Details: Missed a field to be added	Should not Accept the form	Please fill the details	Pass	

	recipient					

Post-conditions: All respective users are logged in successfully and directed to their respective views

Chapter 5: Conclusion

The proposed framework is capable of providing its customizable list of recipients based on multiple possible optimization factors such as HLA matching, waiting time, medical status and distance. This system aims at saving a large amount of man-hours caused during registration, organ allotment, organ procurement, organ transportation and organ transplant which can save lives. It is able to manage priority emergency tag patients. As soon as the life cells are procured, it should be matched with the existing recipients who have registered and should be efficiently utilized for the saving the life of patients suffering from blood cancer.

The system can also enhance to interface with the various third party and government run system to complete the government enforced legal and regulatory requirements.In this, we tried to explore the relevant significant works, their techniques, and the effectiveness of the methods and the scope of the improvement of the results.

References

1) https://www.google.com/
2) https://www.wikipedia.org/
3) https://www.javatpoint.com/dbms-normalization