



AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH

Faculty of Science and Information Technology

Project Name:	SOFTWARE ENGINEERING PROJECT [System for Disasters Affected People]
Course Title:	SOFTWARE ENGINEERING
Section:	F
Group No.	06
Semester:	Summer
Academic Year:	2020-2021
Degree Program:	BSc [CSE]
Course Teacher:	FARZANA BENTE ALAM

GROUP MEMBERS

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System For Disasters Affected People

Our country Bangladesh has been affected by many natural disasters since many years. Sometimes twice-trice in a year and every time this distress affected so many people's life. So, we have designed the system for disasters affected people in a such way so that the affected people can get help very easily and as soon as possible. With the help of this system, we can help them in many ways. The affected people or anybody on the affected area can easily request for any kind of help. In this system there are options for the affected people as well as for every user of this application. Affected people can request for their needs and user can also help them by providing their needs in many ways. This system will be really helpful and beneficial for both affected peoples and the users.

This is how this system solves this problem situation that has no solution yet:

Recently a storm named Yash attack at the southeast part of our country. Many people of that area lost their house. They are seeking for financial help, food and health issues. By our software, affected people can direct request for help. In our software there will be two options, one for donate, another for requesting help. Any kind of person (student, national, international people can donate money by online or offline. They also can donate cloths for needy people. Trustable organization will collect those stuffs and serve them to the affected people. Doctors can list themselves for helping affected people. They will look after those affected persons. A managing team will reach the place as soon as possible and rescue the persons.

Benefits of using this system for affected people:

In the system many helpful sections are involved such as medical students, doctors and local people. Immediately after the disaster, rescue teams came to the place from Bangladesh Armed Forces, Bangladesh Navy, Bangladesh Air Force, and Dhaka Metropolitan and local Police and doctors, medical students, and nurses from nearby medical college hospitals and private hospitals and students from colleges and universities including local civil people. Doctors and medical students provided 24-hour services at the disaster place and in hospitals. Minor injured patients can be treated at health campus and major injured patients were immediately carried to nearby hospital. Affected peoples can be benefited by those goods and necessary supplies also with the help of financial aid that can be come from many sources.

This is how this solution is better than other solution:

During this system development our main focus was to reduce the time and create a platform so that anyone in this world can help affected people by whatever they want. Through this system one can easily help and also the affected people can request for help whenever they needed. This system can track and deliver those goods to them in a way which never happened before and it will be very fast in time.

The key features of this system:

01. Send goods and supplies in affected areas.
02. Creating an Emergency Plan for housing system.
03. Provide special financial assistance from trusted banks and social organizations.
04. Easily can ask for help through online.
05. Provide medical facilities.
06. Providing volunteers from various organizations in a short time.
07. To make arrangements for rescue and protection of cattle.
08. To provide online education to the children of the disaster affected areas.

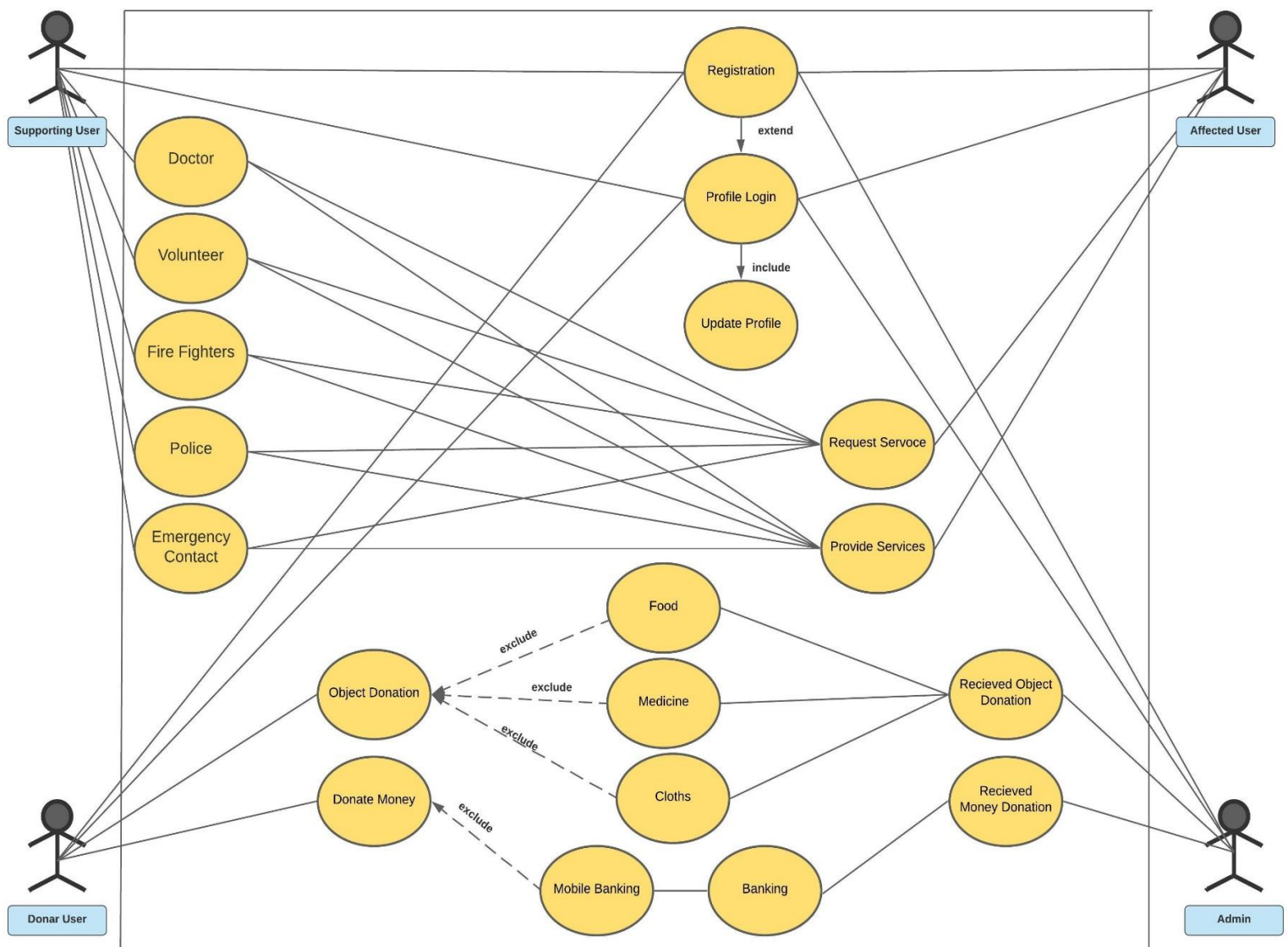
Functional Requirements:

- In the system there will be four types of users. One type of user will be the affected people, others will be donor user, supported user and there will be an also an admin category.
- With the help of the system affected people can update their situation and status.
- The system allows affected people to can request for help.
- The system allows affected people can direct message.
- In the system there will be two categories for donor users.
- In the system donor user can help with financial requirements.
- In the system donor user can help with others object also.
- With the help of the system user can donate to the account of the bank.
- The system allows users to donate money with the help of mobile banking.
- The system allows users to help the affected people with food, medicine and cloths.
- The system allows Doctors, Police, Volunteer, fire fighters to list themselves to the support section of the system.
- The system allows affected people to choose category of their physical problem. They can consult with recommend doctor. There will be some assigned doctor available for 24 hours services.
- The system allows affected people to see doctor's availability. So, they can request for appointment to have an instant treatment.
- The system allows doctors to talk to the affected people and prescribe necessary medicine.
- The system allows fire fighters, police to list themselves through to help those affected people.
- The system allows volunteers to register themselves.
- The system will have a dashboard where users can see the amount of collected money, listed doctors, volunteers, police and fighters to influence people.

FOR THE PROJECT THE UML DIAGRAM IS:

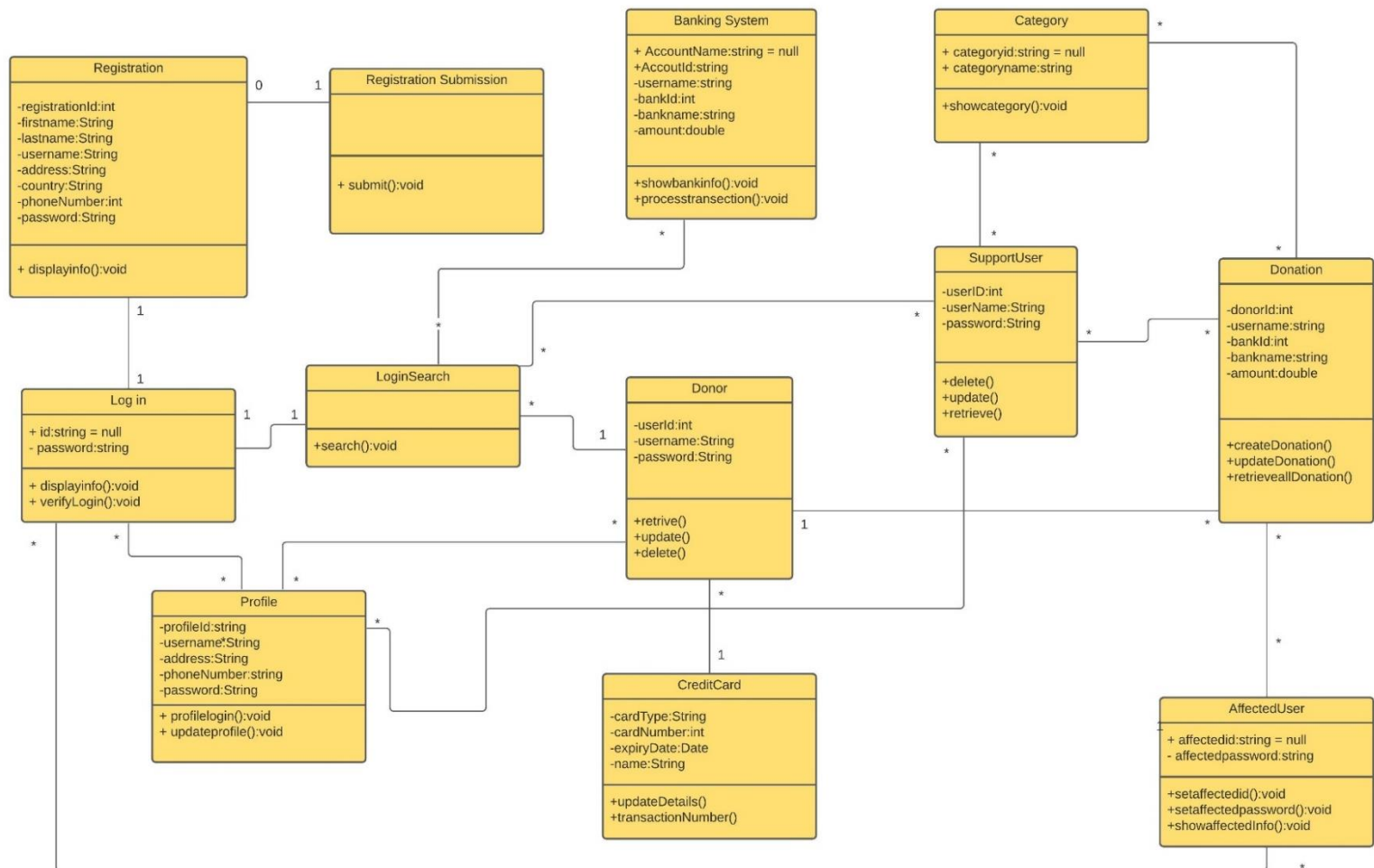
USE CASE DIAGRAM:

SYSTEM FOR DISASTERS AFFECTED PEOPLE



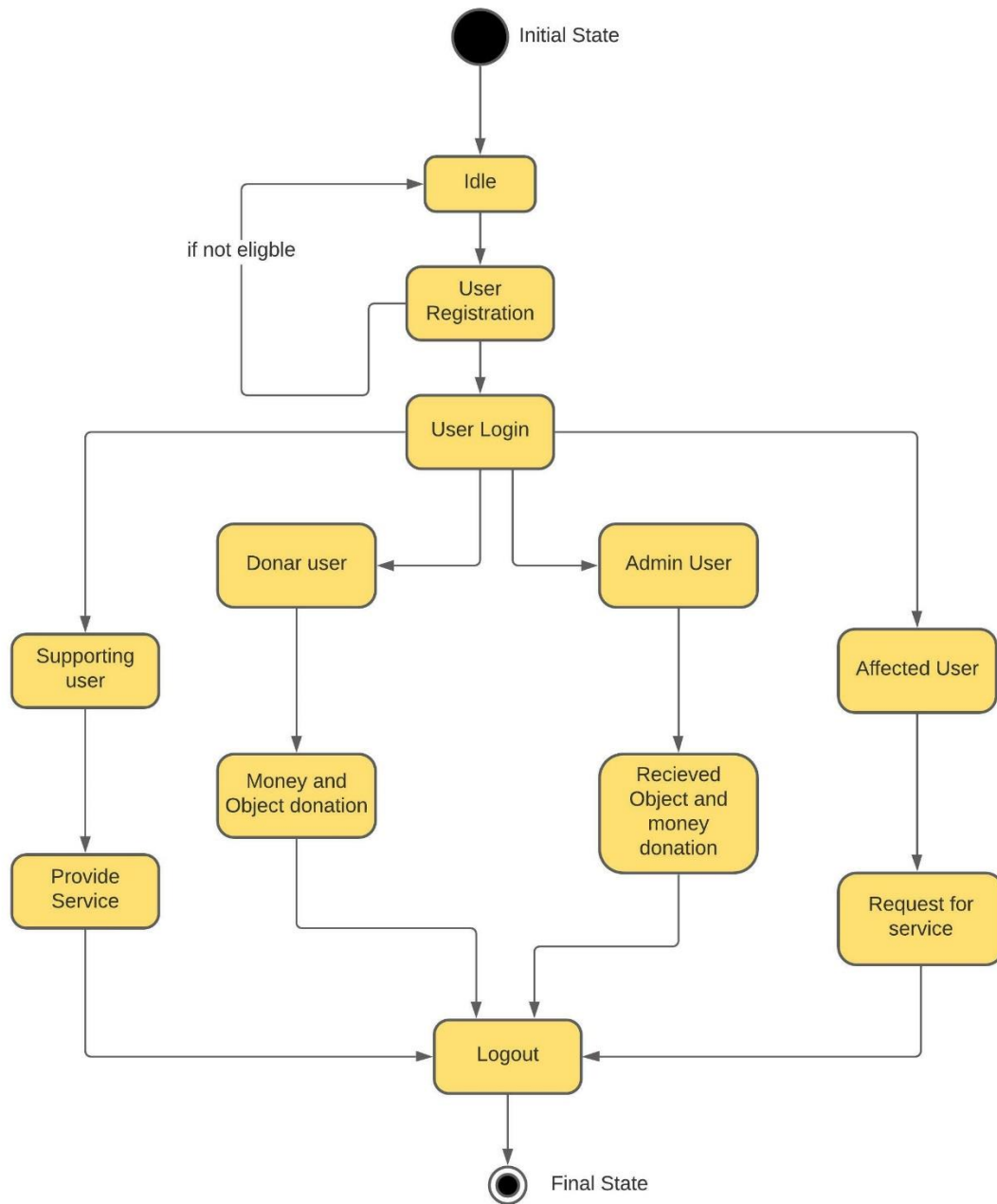
CLASS DIAGRAM:

CLASS DIAGRAM



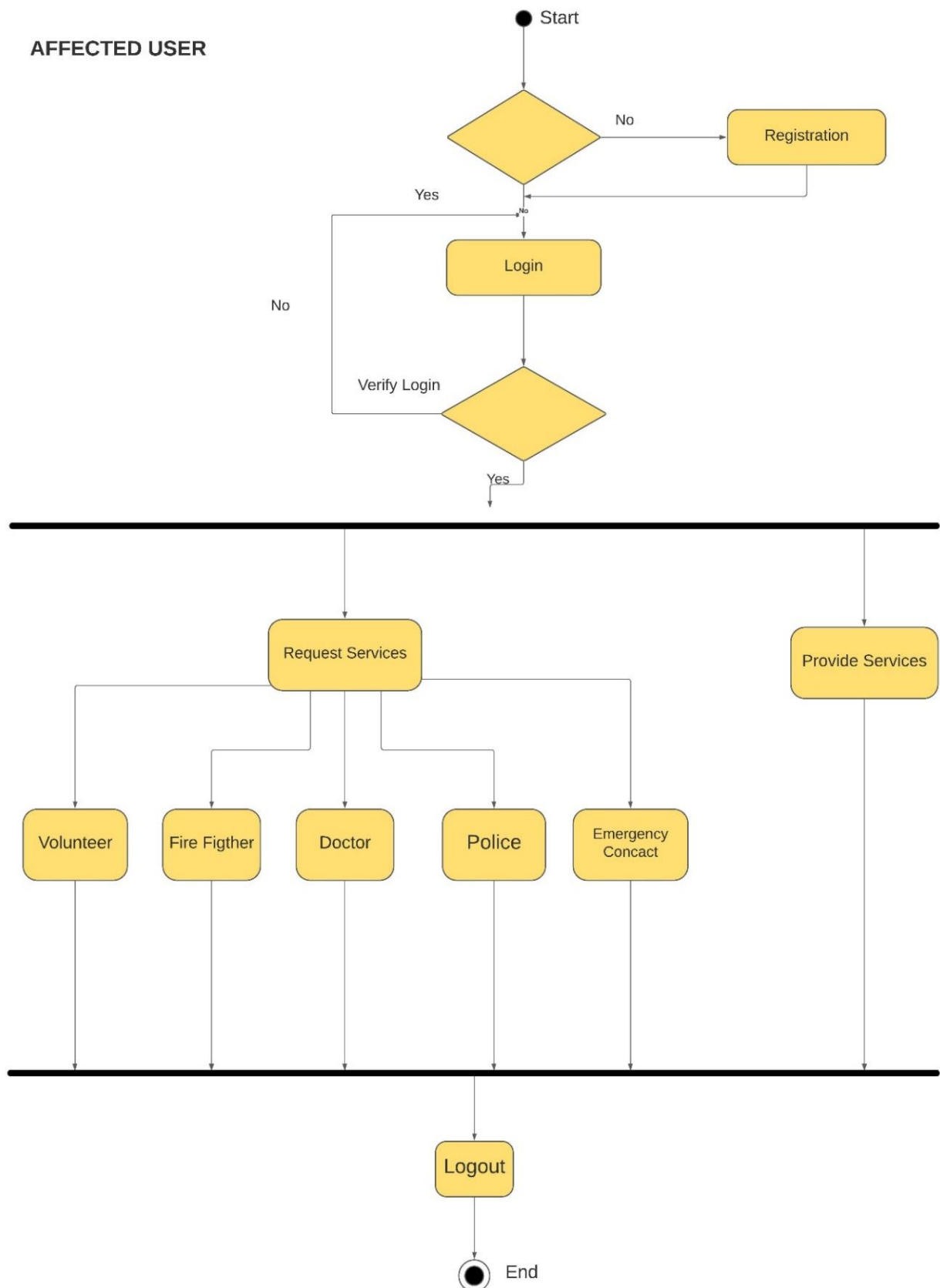
State Chart Diagram:

STATE CHART DIAGRAM

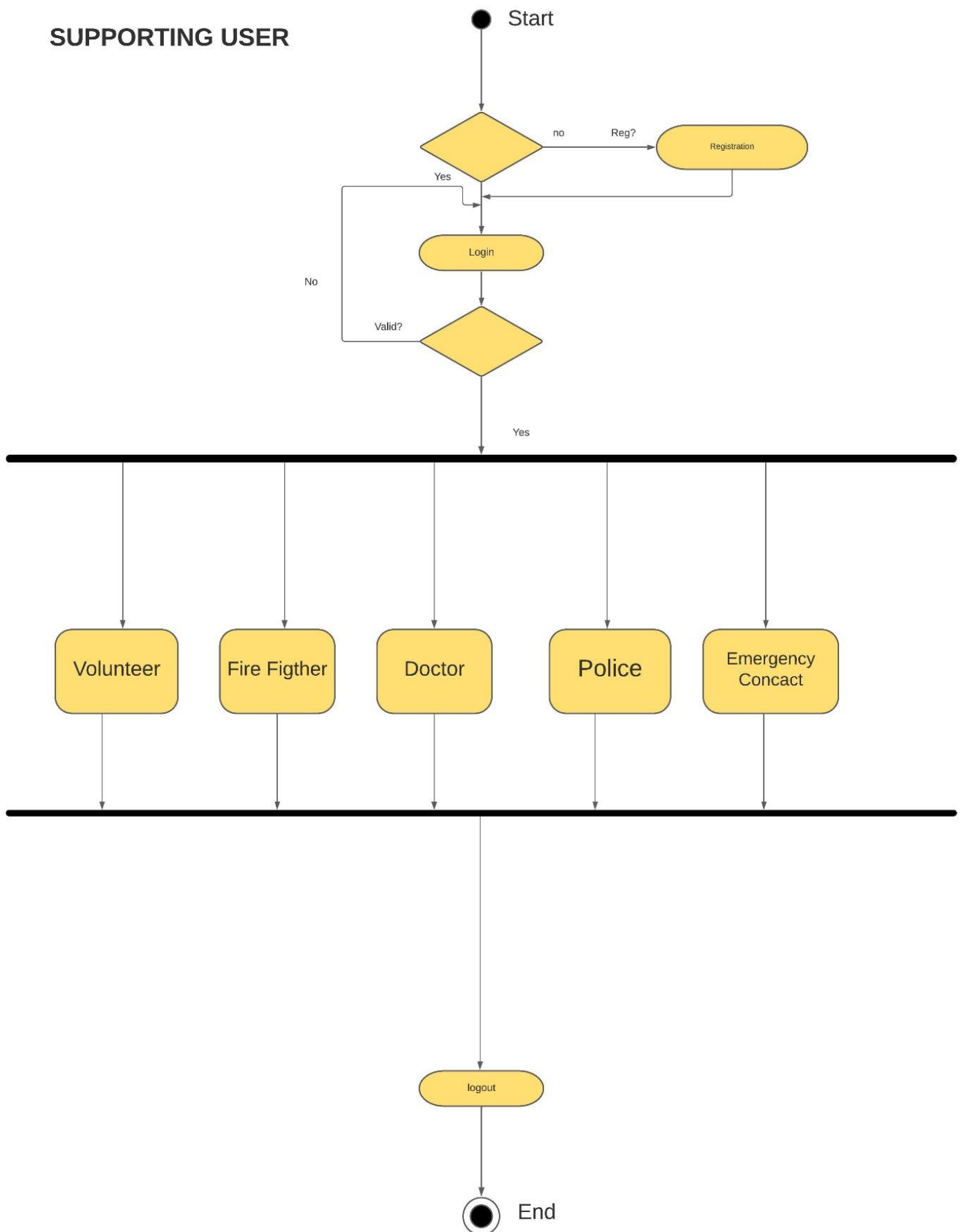


Activity Diagram:

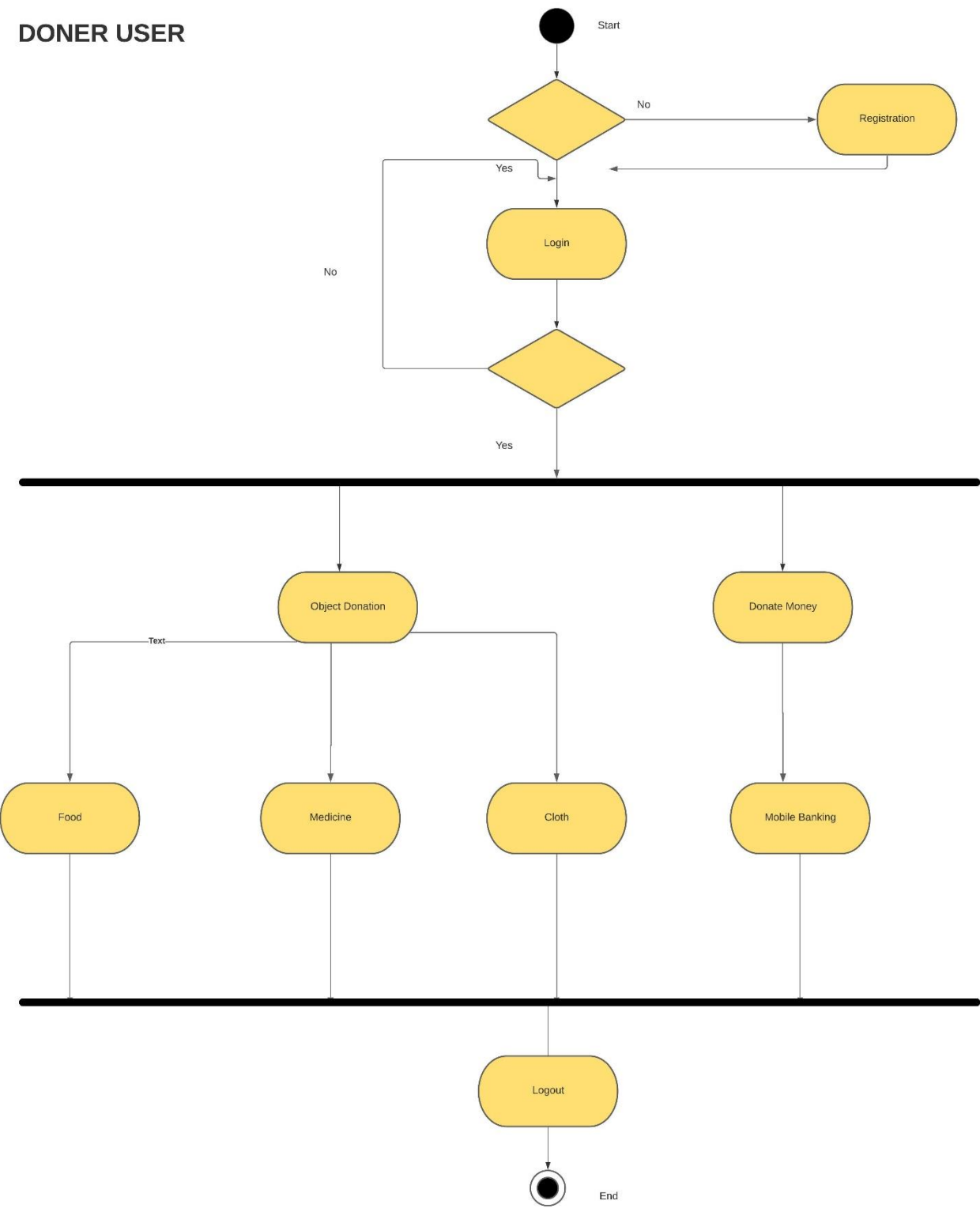
AFFECTED USER



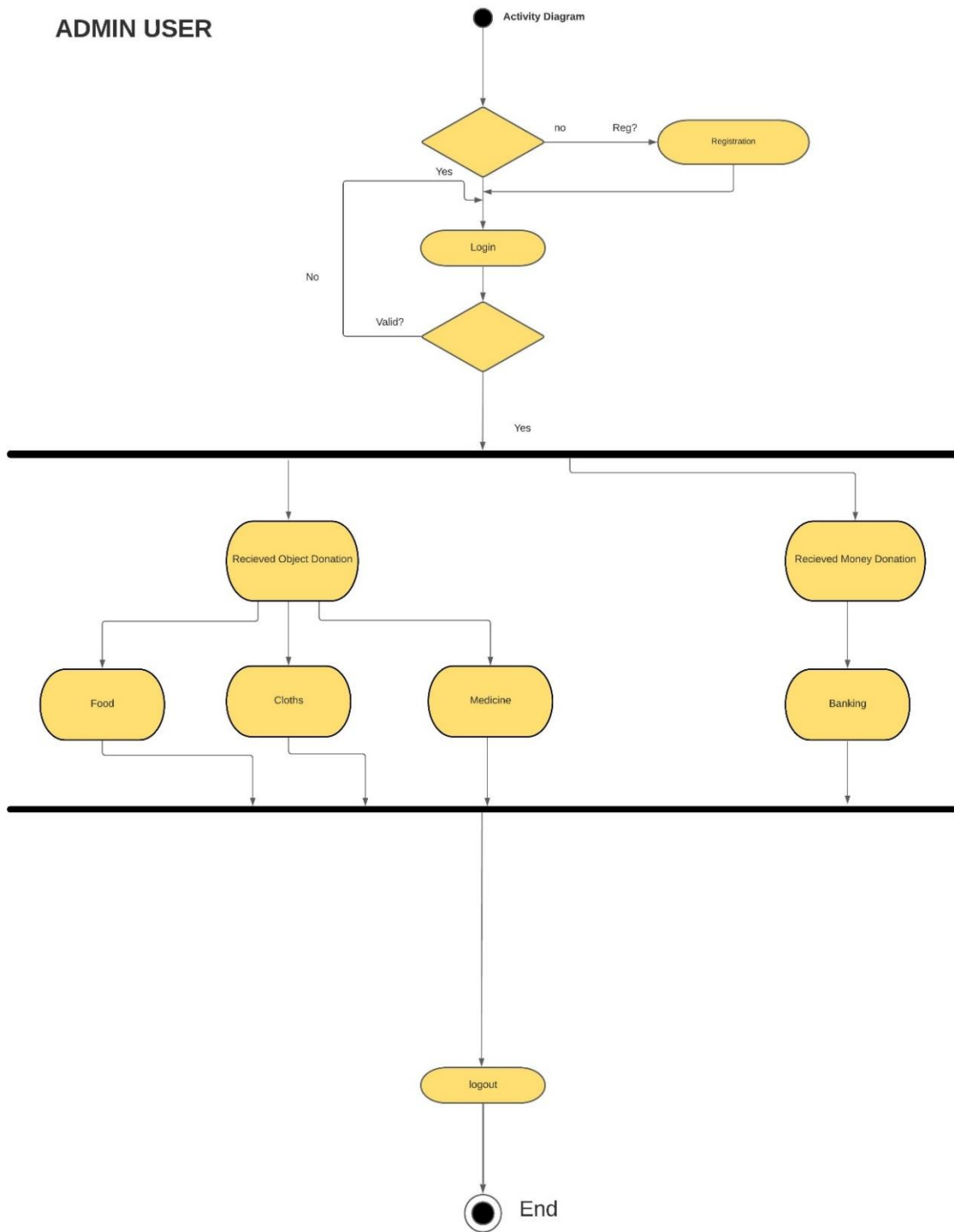
SUPPORTING USER



DONER USER



ADMIN USER



Selection of Process Model

We are going to develop our system which is “**System for Disasters Affected People**”. It is very much important to select the software process model according to the software which is to be developed. The system will be efficient if the process model is selected according to the requirements of the system.

We have to follow some key features to select a waterfall model.

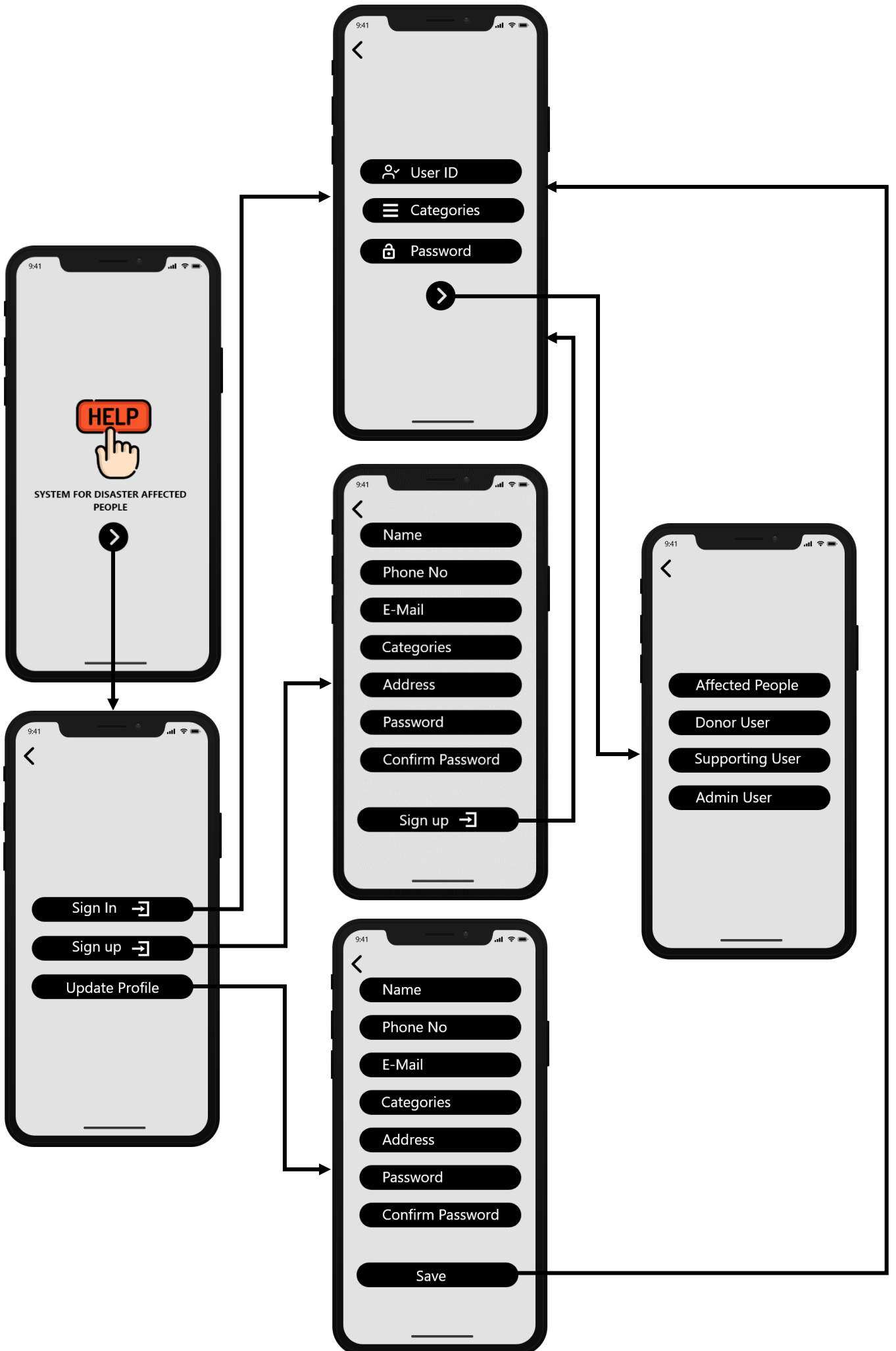
We are using Waterfall Model for our project. Because it is simple and easy to understand and use. The Waterfall Model was the first Process Model to be introduced. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases. The waterfall Model illustrates the software development process in a linear sequential flow. This means that any phase in the development process begins only if the previous phase is complete. In this waterfall model, the phases do not overlap. The advantages of waterfall development are that it allows for departmentalization and control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one. Development moves from concept, through design, implementation, testing, installation, troubleshooting, and ends up at operation and maintenance. Each phase of development proceeds in strict order. Some of the major advantages of the Waterfall Model. This model is easy to manage and works well for smaller and low budget projects where requirements are very well understood. By using this model anyone can clearly defined stages. It is easy to arrange tasks. In this model Process and results are well documented. Phases are processed and completed one at a time.

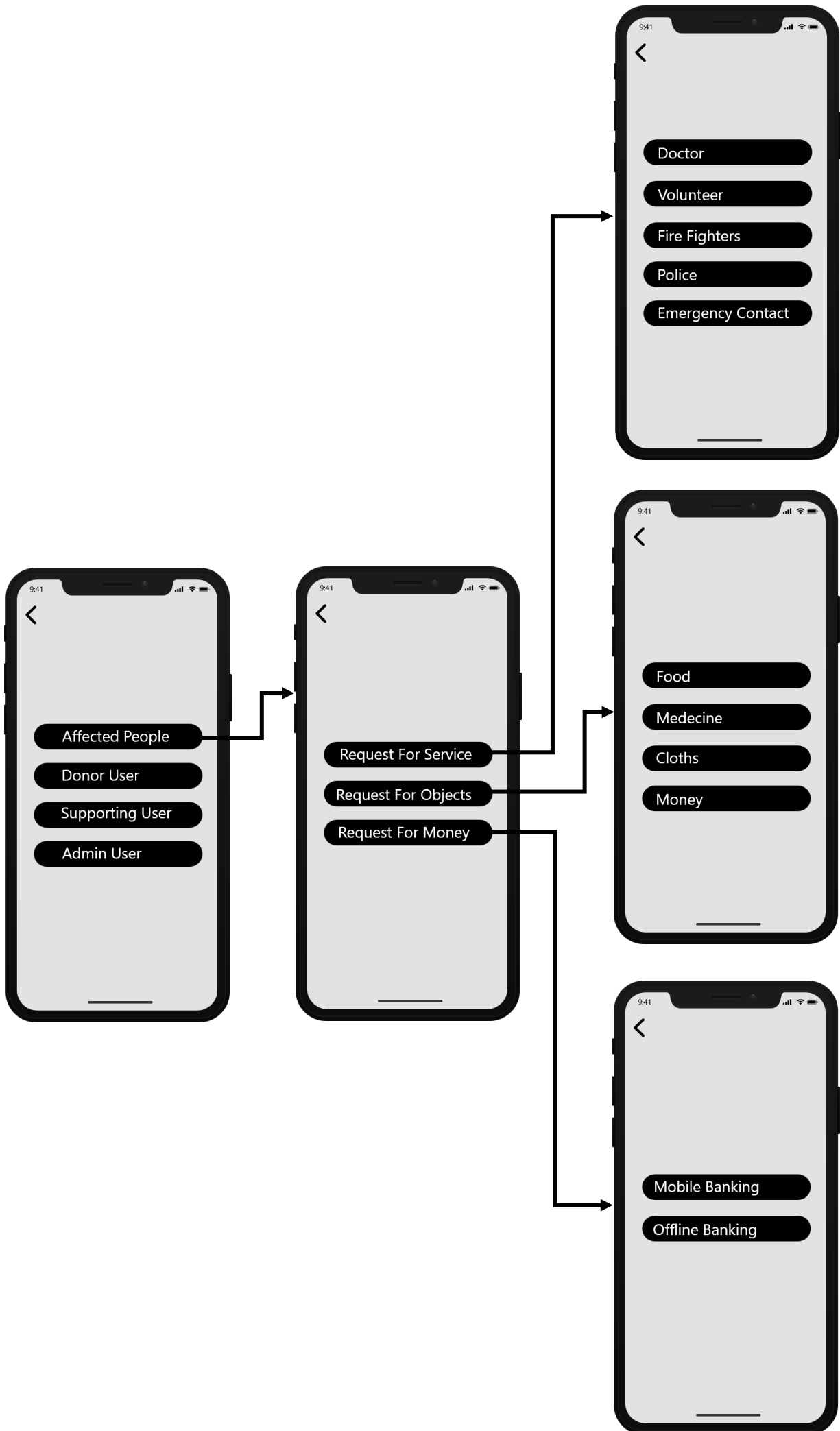
There are three roles in the project management activities in software development. Project Manager: The project manager has the responsibility is to ensure the project execution, cost and time. As the title indicates, their duties are delegating and team management.

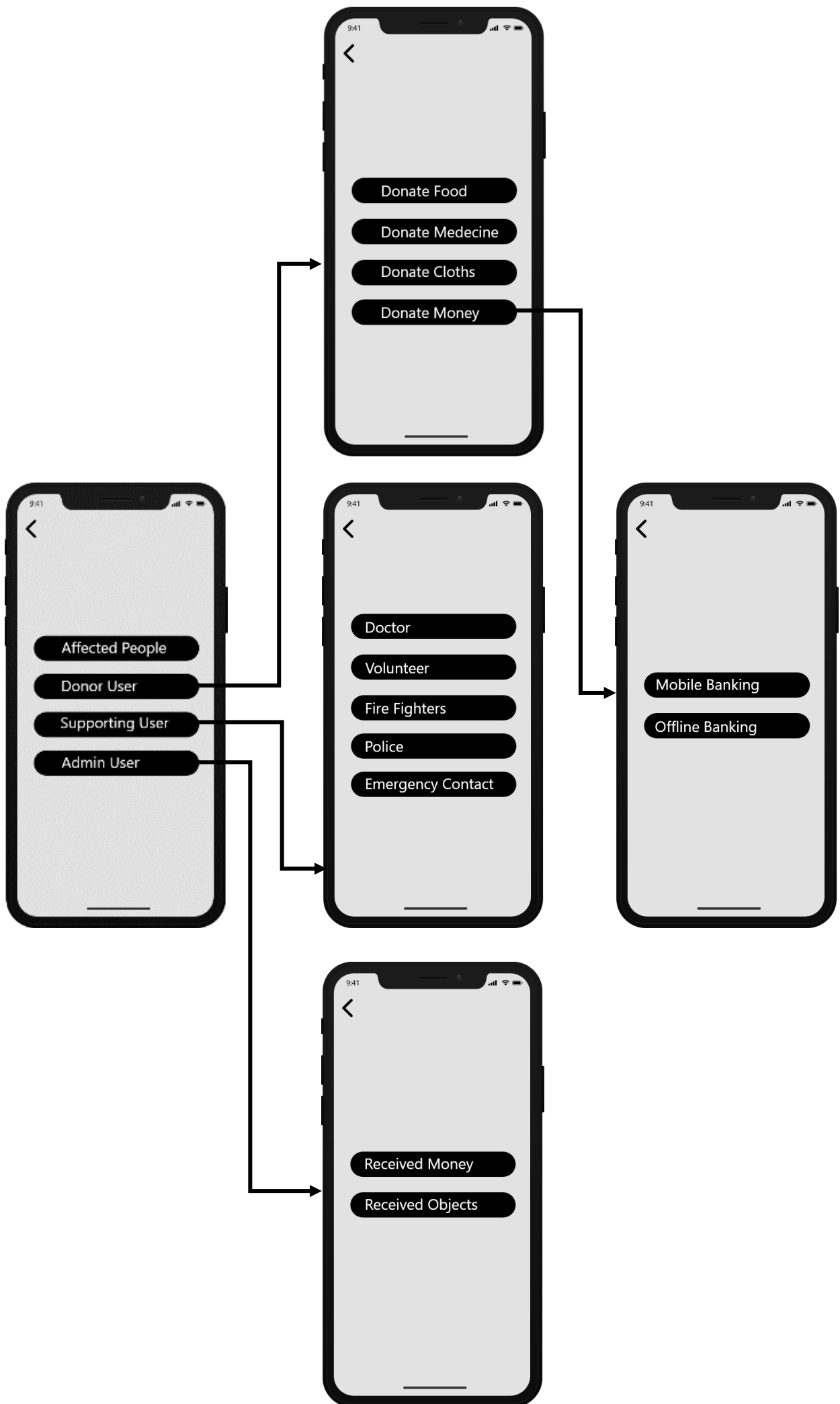
Developer: This member lays down the railroad tracks of the entire project, as the code creator. Their role is integral in that their presence warrants in several separate instances. Such a situation becomes apparent upon bug detection in the software.

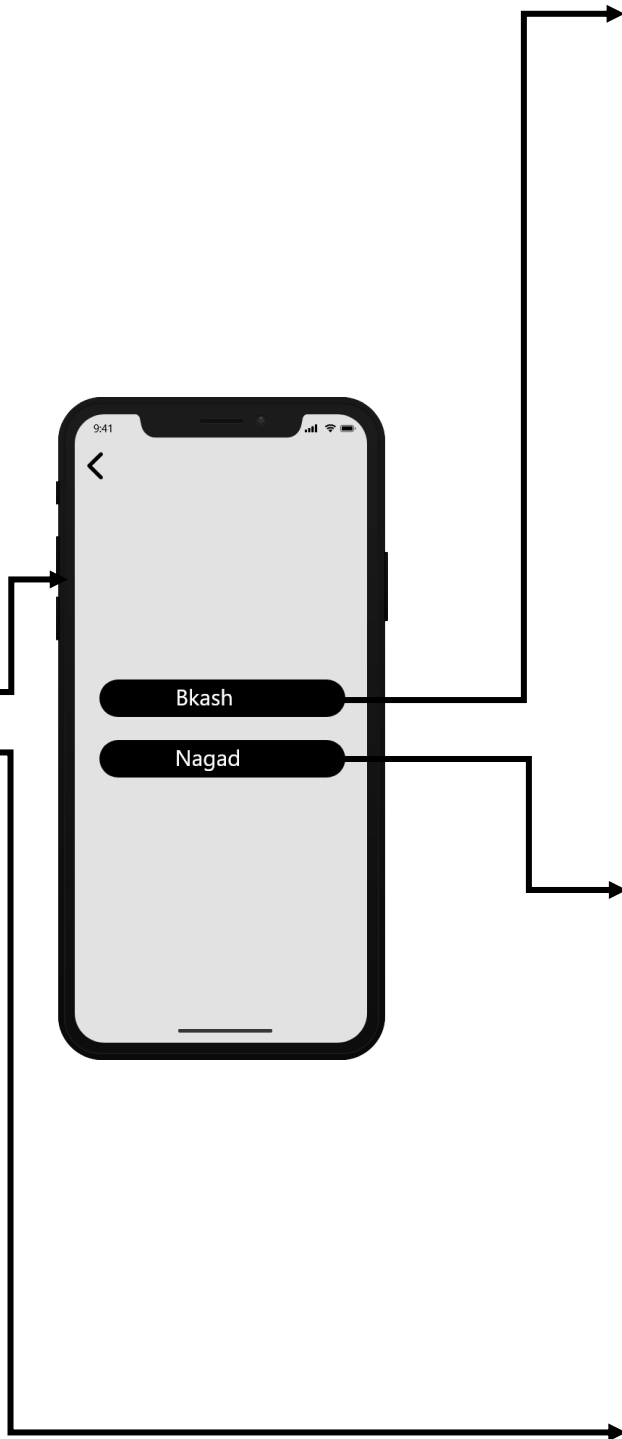
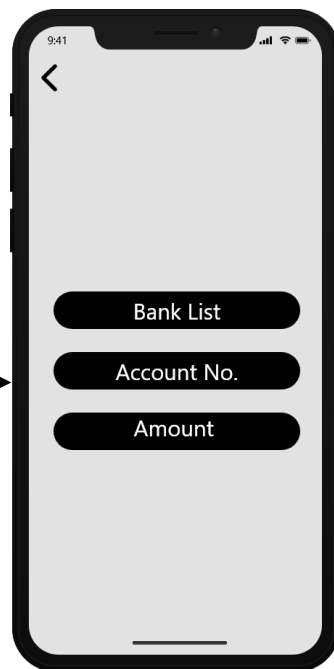
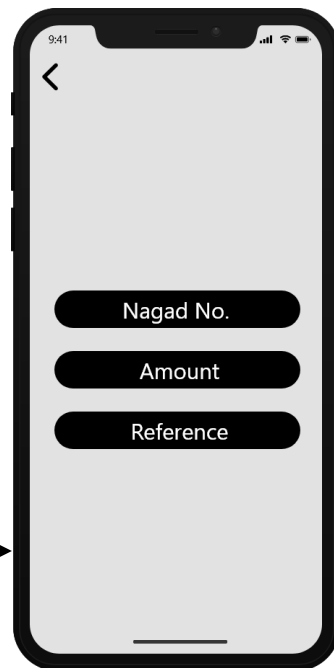
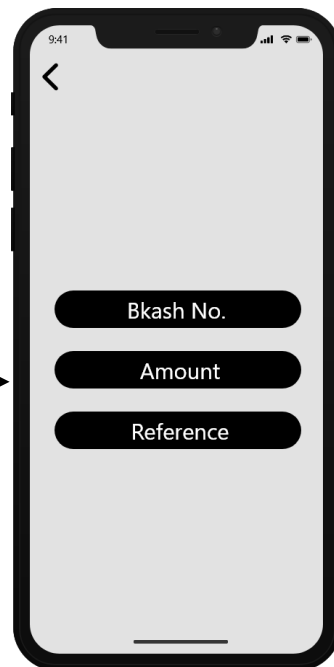
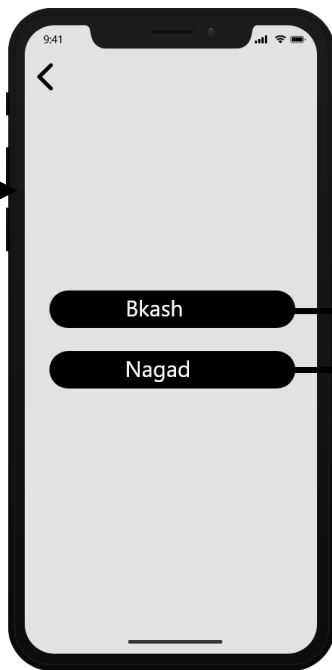
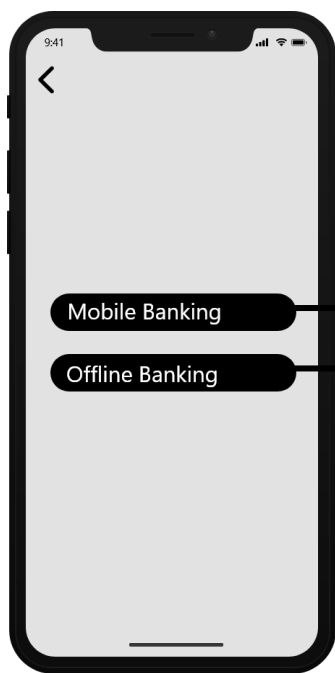
Testers: The last line of defense of the project report for duty during the project's final stages. Their task is to identify the system bugs and defects within the system. it can be identified early and can be solved before delivery of the software product. Properly tested software product ensures reliability, security and high performance which further results in time saving, cost effectiveness and customer satisfaction.

UI/UX Design
Of
System for Disaster Affected People









Test Planning:

Black-Box Testing: In functional testing, one does not have access to the internal details of a program and the program is treated as a black box. A test engineer is concerned only with the part that is accessible outside the program, that is, just the input and the externally visible outcome. A test engineer applies input to a program, observes the externally visible outcome of the program, and determines whether or not the program outcome is the expected outcome. Inputs are selected from the program's requirements specification and properties of the program's input and output domains. A test engineer is concerned only with the functionality and the features found in the program's specification.

In our project test we just need to test through the user, so that we want to use black box testing for our application.

Project Name: System for Disaster Affected People.		Test Designed by: Md. Safin		
Test Case ID: TCF_1		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Md. Safin		
Module Name: Sign Up Session		Test Execution date: 13 th July, 2021		
Test Title: Provide necessary information and login with valid use id and password.				
Description: Test application signup page				
Precondition (If any): User have to provide all the information.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the application. 2. Provide all information. 3. Enter user Id. 4. Enter password. 5. Choose category. 6. Click submit.	Name: ABC Phone Number: 012345678910 E-mail: ABC@outlook.com Categories: Affected People Doner User Supporting User Admin User Address: Dhaka, Bangladesh.	User should login into the application.	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.		Test Designed by: Md. Safin		
Test Case ID: TCF_2		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Md. Safin		
Module Name: Sign in session		Test Execution date: 13 th July, 2021		
Test Title: Verify the sign in with valid use id and password.				
Description: Test application sign in page				
Precondition (If any): User must have valid username and password.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the application. 2. Enter the sign in. 3. Enter user Id. 4. Enter password. 5. Choose category. 6. Click submit.	Username: Systemhelp01 Password: Help001	User should login into the application.	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.		Test Designed by: Md. Safin		
Test Case ID: TCF_3		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Md. Safin		
Module Name: Profile update session.		Test Execution date: 13 th July, 2021		
Test Title: Update user profile.				
Description: Test application update profile page.				
Precondition (If any): User must have created a user account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the application. 2. Enter the update profile. 3. Click save.	Name: XYZ Phone Number: 012345678910 E-mail: XYZ@outlook.com Categories: Affected People Doner User Supporting User Admin User Address: Dhaka, Bangladesh. Password: Help100 Confirm Password: Help100	User should update user information.	As expected,	Pass
Post Condition: User is validated with database and successfully login to account after update profile. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.		Test Designed by: Md. Safin		
Test Case ID: TCF_4		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Md. Safin		
Module Name: Logged in user session.		Test Execution date: 13 th July, 2021		
Test Title: Test user logged in session.				
Description: Test application user logged in page.				
Precondition (If any): User must have created a user account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the application. 2. Enter the sign in. 3. Enter user Id. 4. Enter password. 5. Choose user category. 6. Click submit.	Affected People. Doner User. Supporting User. Admin User.	Users' categories should work.	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.		Test Designed by: Ahsan Newaz Prottush		
Test Case ID: TCF_5		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Ahsan Newaz Prottush		
Module Name: Affected User Session		Test Execution date: 13 th July, 2021		
Test Title: Provide necessary information and login with valid use id and password.				
Description: Test application signup page				
Precondition (If any): Affected User have to provide all the information.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Open the application. 2. Provide all information. 3. Enter user Id. 4. Enter password. 5. Choose Affected User Category 6. Click submit.	1.Request for Service. 2. Request for Money. 3. Request for Object.	Affected User should login into the application.	As expected,	Pass

Post Condition: Affected User is validated with database and successfully login to account. The account session details are logged in the database.

Project Name: System for Disaster Affected People.		Test Designed by: Ahsan Newaz Prottush		
Test Case ID: TCF_6		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Ahsan Newaz Prottush		
Module Name: Affected User Session		Test Execution date: 13 th July, 2021		
Test Title: Provide necessary information and login with valid use id and password.				
Description: Test application signup page				
Precondition (If any): Affected User have to provide all the information.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Choose affected people. 2. Choose request for service.	1. Doctor 2. Volunteer 3. Fire Fighters 4. Police 5. Emergency Contact	Affected User should login into the application and request for service.	As expected,	Pass
Post Condition: Affected User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.		Test Designed by: Ahsan Newaz Prottush		
Test Case ID: TCF_7		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Ahsan Newaz Prottush		
Module Name: Affected User Session		Test Execution date: 13 th July, 2021		
Test Title: Provide necessary information and login with valid use id and password.				
Description: Test application signup page				
Precondition (If any): Affected User have to provide all the information.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Choose affected people. 2. Choose request for objects.	1. Food 2. Medicine 3. Cloths 4. Money	Affected User should login into the application and request for objects.	As expected,	Pass
Post Condition: Affected User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.		Test Designed by: Ahsan Newaz Prottush		
Test Case ID: TCF_8		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Ahsan Newaz Prottush		
Module Name: Affected User Session		Test Execution date: 13 th July, 2021		
Test Title: Provide necessary information and login with valid use id and password.				
Description: Test application signup page				
Precondition (If any): Affected User have to provide all the information.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Choose affected people. 2. Choose request for money.	1. Mobile Banking. 2. Offline Banking.	Affected User should login into the application and request for money.	As expected,	Pass

Post Condition: Affected User is validated with database and successfully login to account. The account session details are logged in the database.

Project Name: System for Disaster Affected People.		Test Designed by: Md. Abir		
Test Case ID: TCF_9		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Md. Abir		
Module Name: Donor User session.		Test Execution date: 13 th July, 2021		
Test Title: Test donor logged in session.				
Description: Test application Donor logged in page.				
Precondition (If any): Donor must have created a valid donor account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the application. 2. Enter the sign in. 3. Enter user Id. 4. Enter password. 5. Choose Donor category. 6. Click submit.	Donate Food Donate Medicine Donate money Donate Cloths	Donor Users' categories should work.	As expected,	Pass
Post Condition: Donor user is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.			Test Designed by: Md. Abir	
Test Case ID: TCF_10			Test Designed date: 13 th July, 2021	
Test Priority (Low, Medium, High): Medium			Test Executed by: Md. Abir	
Module Name: Donor User session.			Test Execution date: 13 th July, 2021	
Test Title: Test donor logged in session.				
Description: Test application Donor logged in page.				
Precondition (If any): Donor must have created a valid donor account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Click Donate Money 2.Click Mobile Banking	Bkash Nagad Rocket	Donor Users’ categories should work.	As expected,	Pass
Post Condition: Donor user is validated with database and successfully login to account. The account session details are logged in the database.				

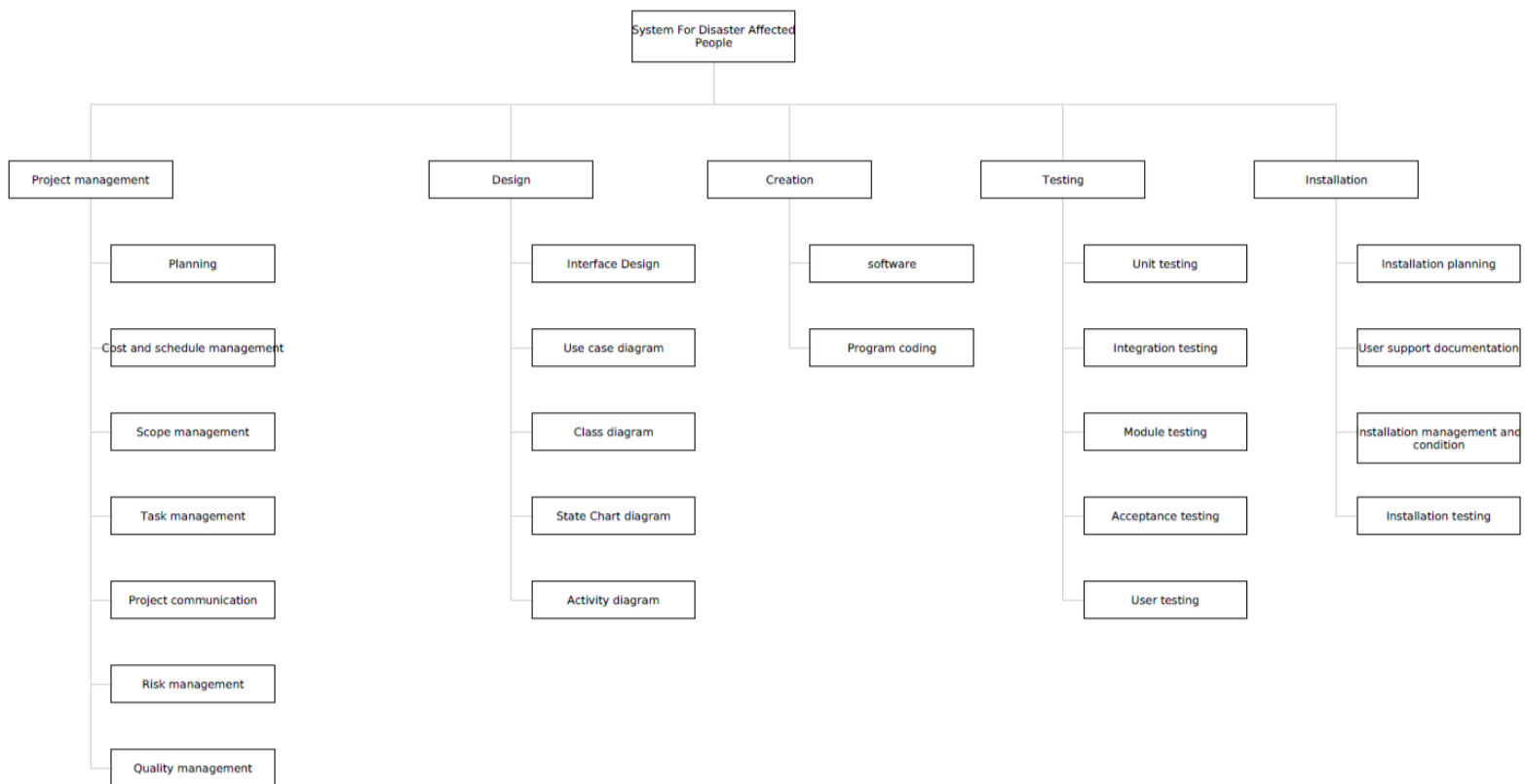
Project Name: System for Disaster Affected People.		Test Designed by: Md. Abir		
Test Case ID: TCF_11		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Md. Abir		
Module Name: Donor User session.		Test Execution date: 13 th July, 2021		
Test Title: Test donor logged in session.				
Description: Test application Donor logged in page.				
Precondition (If any): Donor must have created a valid donor account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1.Click Offline Banking 2.Click Bank List 3. Log out	Amount Reference number	Donor Users’ categories should work.	As expected,	Pass
Post Condition: Donor is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.		Test Designed by: Israt Sharmin		
Test Case ID: TCF_12		Test Designed date: 13 th July, 2021		
Test Priority (Low, Medium, High): Medium		Test Executed by: Israt Sharmin		
Module Name: Supporting User session.		Test Execution date: 13 th July, 2021		
Test Title: Test supporting user logged in session.				
Description: Test supporting user logged in page.				
Precondition (If any): Supporting user must have created a valid supporting user account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the application. 2. Enter the sign in. 3. Enter user Id. 4. Enter password. 5. Choose supporting user category. 6. Click submit.	Doctor Volunteer Fire Fighters Police Emergency Contact	Supporting users' categories should work.	As expected,	Pass
Post Condition: Supporting user is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: System for Disaster Affected People.			Test Designed by: Israt Sharmin	
Test Case ID: TCF_13			Test Designed date: 13 th July, 2021	
Test Priority (Low, Medium, High): Medium			Test Executed by: Israt Sharmin	
Module Name: Admin User session.			Test Execution date: 13 th July, 2021	
Test Title: Test admin user logged in session.				
Description: Test admin user logged in page.				
Precondition (If any): Admin user must have created a valid supporting user account.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Open the application. 2. Enter the sign in. 3. Enter user Id. 4. Enter password. 5. Choose supporting admin user category. 6. Click submit.	1.Received Money 2.Received Objects	Admin users’ categories should work.	As expected,	Pass

Post Condition: Admin user is validated with database and successfully login to account. The account session details are logged in the database.

Work Breakdown Structure:



COCOMO (Constructive Cost Model) :

Based on SLOC characteristic, and operates according to the following equations:

$$\begin{aligned}\text{Effort} = \text{PM} &= 2.4 * (8000/1000)^{1.05} \\ \text{PM} &= 21.3037 \text{ person months}\end{aligned}$$

$$\begin{aligned}\text{Development time} = \text{DM} &= 2.50 * (\text{PM})^{0.38} \\ &= 2.50 * (21.3037)^{0.38} \\ &= 7.99 \text{ person months} \\ &= 8 \text{ person months} \\ \text{DM} &= 32 \text{ weeks}\end{aligned}$$

$$\begin{aligned}\text{Required number of people} = \text{ST} &= \text{PM}/\text{DM} \\ &= 21.3037 / 8 \\ &= 2.66 \\ \text{ST} &= 3 \text{ Average persons}\end{aligned}$$

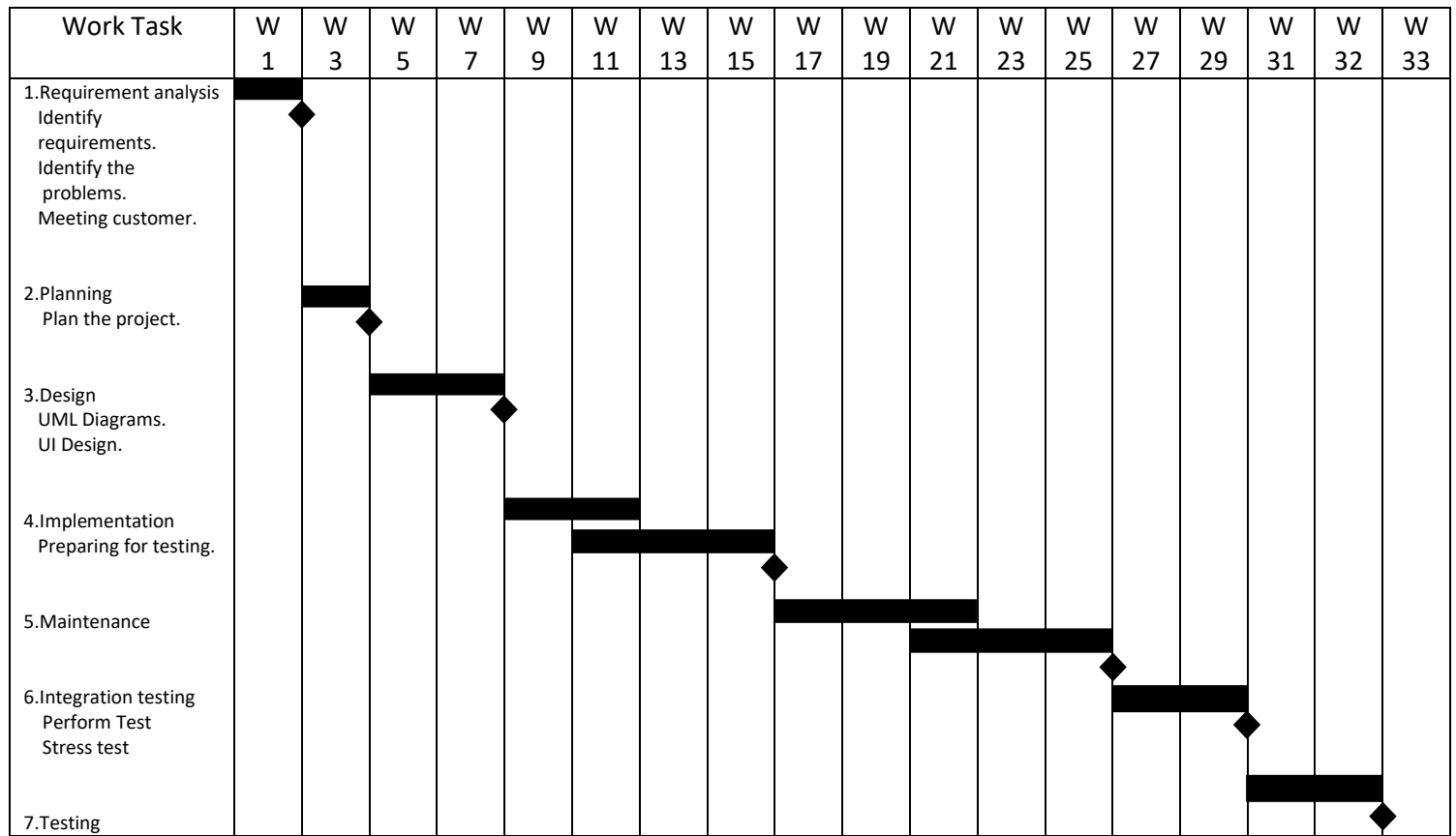
Timeline Chart 01

WEEKS TASK: PERSON	01	03	05	07	09	11	13	15	17	19	21	23	25	27	29	31	32	33
A: Safin																		
B: Safin																		
C: Abir																		
E: Abir																		
D: Prottush																		
G: Prottush																		
F: Arpa																		
H: Arpa																		

Activity Key:

- A: Planning
- B: Designing
- C: Implementation
- D: Coding
- E: Documentation
- F: Maintenance
- G: Integration testing
- H: System testing

Timeline Chart 02



EVA

Task	Planned Effort	Actual effort
1	12.0	12.5
2	15.0	11.0
3	13.0	17.0
4	8.0	19
5	9.5	8.5
6	18.0	8.0
7	10.0	19.0
8	15.5	17.0
9	14.0	10.5
10	9.0	8.5
11	4.0	10.0
12	12.0	4.5
13	6.0	
14	5.0	
15	14.0	
16	16.0	
17	8.0	
18	7.5	
19	18.5	
20	19.0	

BCWP= 140

BCWS= 234

ACWP= 145.5

Given Total Task= 24, Effort Estimated= 469

BAC = 469

$SPI = BCWP / BCWS = 140 / 234 = 0.5982$

$SV = BCWP - BCWS = 140 - 234 = -94$ person-day

$CPI = BCWP / ACWP = 140 / 145.5 = 0.96$

$CV = BCWP - ACWP = 140 - 145.5 = -5.5$ person-day

% Schedule for completion = $BCWS / BAC = 234 / 469 =$
 $= 49.89\%$

[% of work scheduled to be done at this time]

% complete = $BCWP / BAC = 140 / 469 = 29.85\%$

[% of work completed at this time]

BUILDING RISK TABLE-2

RISKS	CATEGORY	PROBABILITY	IMPACT
Schedule of the project may delay	PS	70%	2
Increase of users	PS	60%	3
Funding can be hampered	CU	30%	1
Technical errors can be happened	TE	30%	1
Lack of proper training on tools	DE	70%	2
Acceptance of the system	PS	30%	2
Staff turnover will be high	ST	60%	1
Inexperienced members	ST	30%	1
Failure to meet the requirements	CU	50%	1
Decreases of user	BU	40%	2

Impact value:

- 01.Catastrophic
- 02.Critical
- 03.Marginal
- 04.Negligible

END