B.Sc. Engg. Report

A project report on the Smart Healthcare System

by

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(In partial fulfillment of the requirements for the software development course in Computer Science Engineering)

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Abstract

Health is very important for every person. Everyone tries to stay healthy and happy, that's the goal of a human. So, we can say everything Is actually related to health. That is why we want to make an easier path to keep our body safe and healthy. As we can see people are getting busier and all the disease becoming stronger, so we need to take good care of our health with this busyness. That is why we want to create a system by using c program that will help us to take proper care of our health at any time we want or we need. A person will be able to take advise from a doctor, can do a check-up or can take emergency facilities at any time or anywhere they want. So, we want to transform it into reality by using technologies. We want to take our civilization forward through this small effort. .

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Acronyms List

RSA = Rivest–Shamir–Adleman

DAO = Decentralized Autonomous Organization

DES = Data Encryption Standard

USD = United State Dollar

UK = United Kingdom

IPFS = Inter Planetary File System

IoT = Internet of Things

IBM = International Business Machines Corporation

SSL = Secure Sockets Layer

AML = Anti-Money Laundering

KYC = Know Your Customer

TiM = Trust in Motion

MIT = Massachusetts Institute of Technology

ASX = Australian Securities Exchange

JPX = Japan Exchange Group

IPO = Initial Public Offering

QR = Quick Response Code

MD5 = Message-Digest Algorithm

MAC = Message Authentication Codes

BTC = Bitcoin

NIST = National Institute of Standards and Technology

GCD = Greatest Common Divisor

AES = Advanced Encryption Standard

TLS = Transport Layer Security

VPNs = Virtual Private Network

ECC = Elliptic Curve Cryptography

DDoS = Distributed Denial of Service

URL = Uniform Resource Locator

M2M = Machine to Machine

CPU = Central Processing Unit

GPU = Graphics Processing Unit

SPV = Simplified Payment Verification

HTLCs = Hashed Timelock Contracts

ACH = Automated Clearing House

HDAC = Hyundai Digital Access Currency

ePoW = Electronic Proof of Warranty

Contents

Chapter 1

Introduction

Nowadays the world moving forward with technologies, we have participated in that move with a small step by creating a Smart Healthcare System.

1.1 Introduction

Our project is about how we can simplify our healthcare system for every human by using technologies. Through the application of our project people can take medical treatment by setting at home. A person will always be wearing a smart device. By using that device, the owner will share his/her physical problems with the doctor. They will share their physical difficulties in a description box. Also, they can call a nurse whenever they need one. A nurse from a nearby hospital will come to collect the patient physical condition by collecting their blood sugar rate, blood pressure, temperature, etc. she will send it to the nearby hospital, the doctor in charge will analyse it. If the patient wants any initial advice they can ask for advice on that device, the device will take him to a website that provides advice. If the person got into an emergency such as a heart attack, stroke, extreme fracture or things like that they will select an option from the emergency section. By choosing a relatable option from the section that person condition will be informed to the nearby hospital and the nearby ambulance service. The ambulance will take him or her to the hospital within some moment. They can enjoy this service by selecting a premium method provided by the admin. We implemented this effective system by using c program. We have used pattern matching algorithm for

searching users, multiple users registration system, powerful admin panel, etc. to fulfil all the needs of a person.

1.2 PROBLEM STATEMENT:

The population of our country is about 17 crores. With the increase in population, the demand for people is much higher. If we think about the medical system of our country, we can see that many people are suffering from a lack of treatment. They are facing this problem due to the lack of adequate hospitals. An effectively performing health sector is an essential pre-condition for the overall development of a society. It is often seen that ordinary people cannot measure their blood sugar, blood pressure etc. Recently the Bangladesh Health Facility Survey found that only around 25 per cent of our health facilities have some basic equipment, like a stethoscope, thermometer, blood pressure apparatus, adult weighing scale, child or infant weighing scale. The remaining 75 per cent are not getting these facilities. In that case, a nurse is needed. It is not always possible to go to the hospital. Even if you go to the hospital, you have to wait with the serial. Sometimes it is seen that there is no doctor in the hospital or the doctor comes late. Here are some commonly observed healthcare system issues, and how technological solution can be employed to do things right. Most common problems in the healthcare system:

Most common problems in healthcare system:

1. Communication
2. Healthcare Service System
3. Wastage of Time
4. Facing Hassle
5. Hospital difficulties
6. Traffic
7. Emergency
8. Poverty
9. People's Unconsciousness

1.3 PROBLEM SOLUTION

1.3.1 Communication

The medium of communication plays the biggest role in healthcare system.Communication issues in the healthcare industry can be detrimental to patient care, waste time and negatively affect a provider's bottom line.Proper communication amongst doctors, nurses and all care staff is vital to optimum patient care and satisfaction. It is possible to get healthcare at home in a short time, in a short time, just by using a device. The current technology system is very good.Due to which we can easily get all kinds of services without any hassle.We can keep in touch with doctors, hospitals, ambulances, check our bodies all the time, do health monitoring.

1.3.2 Health Service System

Smart healthcare system which is undoubtedly much better than health service.Where there are enough doctors, nurses, ambulances, advice, treatment so that the user will not have any problems.They can take treatment as per their convenience.Many times there are hospitals and there are not enough doctors, so the patient suffers.If the user wants, he can call the nurse to have all his check-ups done, or he can call an ambulance immediately in case of any emergency situation. It is only through our healthcare system that it is possible to get all the health services without any hassle.

1.3.3 Saving Time

This time we will discuss the most important topic is Saving Time.Time is of the essence for all of us.With this technology we can get health care in a very short time.We can get this opportunity even sitting at home.We have to save the time of traveling to the hospital and waiting time with the serial in the hospital.A smart healthcare system is a system whose

services we can get at home,Where we do not have to go to the hospital separately,We can accept this service with any Android device,You can get doctor's advice. By doing this we can save our precious time.

1.3.4 Reducing hassle

It is often seen that when we go to the hospital, we have to face many problems which makes us sick.There is a long line to wait for the treatment of any minor ailment.Sometimes it is seen that there is no doctor, the doctor is late to come, it wastes a lot of our time.But our healthcare system is a system through which the user can take all kinds of services sitting at home.If you want, you can call the nurse and do a body checkup,Or you can take advice from the doctor with all the information.In this way, the user does not have to go to the hospital separately, the hassle-free service is available at home.

1.3.5 Hospital difficulties

If it is necessary to go to the hospital due to any illness of the body, then it is seen that we have to give the serial to the hospital in advance.It is seen that the number of people in the hospital becomes more and more. This causes a lot of problems.Which creates hospital and social dentures. Differences are created between people.But the easiest way is to sit at home and if our healthcare system is used, users will not have to go to the hospital.There is no need to face any problem.It is very easy to get all kinds of healthcare at home.If needed, Just called the nurse and checked the body with all the information.You can also consult a doctor and even get a daily check-up.

1.3.6 Traffic

It is often seen that there is a serial in the hospital but it is not possible to reach on time due to traffic jam, so the serial is delayed and it is late to see a doctor. But we do not have these problems in this smart healthcare system, all kinds of health treatment and health service can be easily found directly at home through Android device. There will be no traffic problem.If

you want, it is possible to get doctor's advice with all the information.Many times the condition of the patient is seen to be serious but due to the traffic it is too late to go to the hospital, this may make the condition of the patient worse,Which allows the user to make an emergency ambulance call through his device. By doing this, he does not have to read any other traffic problem.

1.3.7 Emargency

Sometimes the patient develops some emergency conditions like heart attack, brain stock, burnt in the-fire etc ,It is possible to receive services through time and our emergency side, the server will send an ambulance to the specified address in case of emergency call.Even if the doctor calls, the doctor and nurse will wait there in an emergency. The cabin will be fixed in advance for the emergency patient.None of this is possible just by our smart healthcare system. Through which it is possible to get all the services of easily.Using technology we can get everything in the palm of our hand.

1.3.8 Proverty

Poverty plays the biggest role in the medical field.Poverty does not get adequate treatment.Even if you can take an advance for a minor illness, it is seen that a lot of money is needed.In that case it is possible to receive services from our healthcare system at a very low cost.Will be able to receive services from all types of people.Many times poor people are deprived of health care just because they do not have enough money,Because of this poverty, they do not even go to the doctor's office, which makes their illness worse.But it is possible to get all these health services at very low cost through our service.By doing this, they will also get adequate services and the cost will be less.

1.3.9 People's Unconsciousness

The world is busy , in recent time people are too busy that they can't take care of their health. Now, they can take care of their health at any time without wasting precious time by using out creation. They can take good care of their health by setting at home. here are some

facilities that a user can get- always health monitoring, anytime health advice and treatment, can save a huge amount of time and money for fulfilling.

1.4 Motivation

In recent time our country healthcare system is in a very bad situation. People are not getting proper treatment and the management of our healthcare system is most worse. People are dying because of lack of treatment or too much suffering because of that. So, we thought how can we simplify our healthcare system and make it obtainable for every person by using our technology. Then we came up with an idea of a smart device that will guide a person to the right path according to his/her health condition. So, that they don't have to suffer from mistreatment and also they could treat themselves fast. If we can assure that, then everyone can enjoy a healthy life and might be can get a long life. Then we decided that we will create a system that will monitor a person health condition and will call for an ambulance in an emergency on its own so that the person gets treatment as soon as possible. Then we created this system by using c program with some algorithm, function, method etc. When we started doing the project we faced that a smart device can not check up on a persons health condition on its own because we don't have that kind of technology. So, we solve that problem by calling a nurse whenever they need one. Now A person can do a full-body check-up without any hassle, can get an ambulance quickly, can take health advice, can stay updated about their health. We created these methods successfully.

1.5 Objectives of This Project

our goal is to simplify our healthcare system and make it obtainable for everyone. There are some objectives of our project is as following-

1. Pattern matching for searching.
2. Telemedicine service.

3. Always health monitoring.
4. Emergency ambulance service.
5. Centralized database system.

1.6 Conclusion

Our project report has been fully credited to the Healthcare system.Through which all health related problems will be solved from home.Communication issues in the healthcare industry can be detrimental to patient care, waste time and negatively affect a provider's bottom line.Which will now be easily accessible through our technology.Smart healthcare system which is undoubtedly much better than health service.It is only through our healthcare system that it is possible to get all the health services without any hassle.With this technology we can get health care in a very short time.A smart healthcare system is a system whose services we can get at home,Where we do not have to go to the hospital separately,We can accept this service with any Android device,You can get doctor's advice. By doing this we can save our precious time.It is often seen that when we go to the hospital, we have to face many problems which makes us sick.In this way, the user does not have to go to the hospital separately, the hassle-free service is available at home.We have adequate services.There are enough doctors through whom treatment can be obtained in less time.If we can successfully implement the whole system,we hope it can make a vast change on healthcare system and health service.Through which people will benefit.

Chapter 2

Existing Literature

2.1 Introduction

We visited number of hospital and known the procedure of some application for our project . We observe many things and find some idea to improve our smart healthcare system. We find many good things and bad things. We added all of good things to our system so that we can create the different from other similar systems. We go to five Hospital for knowing how actually manage Hospital , Doctors and Nurse. For Ambulance service and Telemedicine service we contact administrator of Ambulance BD and Maya application.

2.1.1 Lab Aid Specialized Hospital

Labaid Hospital - the fist international standard super-specialty hospital of the country, dedicated exclusively to the diagnosis and treatment of cardiovascular diseases have been built on a six storied building at, Dhanmondi - a commercial cum residential hub of Dhaka City, covering a floor space of more than 100000 sq. feet.

Equipped with most modern and state-of-the-art equipment and machineries, the Labaid Hospital makes a solemn commitment to the patients of the country - a commitment to maintain mastery and marvel in acre, to be compassionate and respectful to patients' beliefs and values and to make sound decision in the interest of the patients.

A band of highly skilled, dedicated and experienced surgeons, anaesthesiologists, perfu-

sionists, nurses and technicians garnered from both home and abroad work synergistically and collaboratively under close supervision of renowned specialists of international repute not only provide 24-hour services to the patients but also remain standby to deal with any emergency conditions. Labaid Hospital - a hospital with a difference, strives to ensure that patients receive care in the most appropriate setting - in an environment of privacy, kindness and understanding based on LCH spirit of 'Care First' resulting in optimum clinical outcome, greater patient convenience and lower treatment costs. Our approach is comprehensive, physician-led and cost-effective. All our resources are dedicated to keeping the heart healthy and treating it when it is not. Total Team

The fundamental strength of Labaid Hospital is its two teams - one of cardiologists and other surgery. The teams are composed of highly skilled, experienced and eminent cardiologists, surgeons and anaesthesiologists. Besides, a band of qualified and experienced nurses, technicians and other support personnel garnered from home and abroad are providing constant care to the patients. There exists an unprecedented amount of amity, understanding and cooperation among the members of the teams which are sine-qua-non for successful treatment out come of ailments.

Patient Well Being - A Priority Concern

Patients' well being and recovery hinge around good nursing care and comfort to be derived from friendly and cheerful services and appropriate surrounding. Labaid Hospital assures its patients unsurpassed level of comfort, nursing care and convenience in an atmosphere of peace, tranquility and understanding. Its customer care service department works full time to ensure that patients return home with positive experience.

Commitment to Highest Standard

The highest standard of internationally accepted operational procedures, infection control protocols and safety guidelines are practices in Labaid Hospital. The hospital enforces zero tolerance in compromising on such vital issues.

2.1.2 Square Hospitals Ltd.

Square Hospitals Limited is a tertiary care hospital and the leading contributor of private healthcare services in Bangladesh. This has been achieved only through consistent commitment to improve the lives of people through utmost service excellence since its inception on 16th December, 2006. Square Hospital is one of the ventures of Square Group which is the top business group of the country.

The reputation of Square Hospital is the result of quality clinical outcome and comprehensive care, made achievable through world class integrated healthcare facilities by highly trained professionals. Thus, Square Hospitals strives to meet patients' standards through quality healthcare and making a difference in their lives. .

2.1.3 Evercare Hospital Dhaka

Evercare Hospital Dhaka is part of Evercare Group, present in over 25 cities, with 30+ hospitals, 15 clinics and 50+ diagnostic centers across 2 continents, in their mission to provide quality healthcare in emerging markets.

Evercare Hospital Dhaka is the first and only hospital to be accredited by the Joint Commission International (JCI) 5 times in a row. The JCI Gold Seal of Approval is a globally recognized and reflects an organization's commitment to best practices in quality and patient safety. Evercare Hospital Dhaka was first accredited by JCI in 2008 and till date remains the only hospital in Bangladesh to hold this international recognized standard. Accreditation by recognized international institutions such as JCI are crucial to drive compliance and improve quality and cost-effectiveness across the hospitals and has become a priority for healthcare organizations across the world.

EHD is a 425-bed multi-disciplinary super-specialty tertiary care hospital in Bangladesh, providing comprehensive health care with the latest medical, surgical and diagnostic facilities. These services are provided by expert medical professionals, skilled nurses and technologists using state-of-the-art equipment, modern well researched protocols processes. The eleven-storied modern structure with 435,000 square feet floor space, was conceptualized designed by renowned architecture company Smith Group of United States of America.

Evercare Hospital Dhaka is a world-class hospital with an aim to establish a close synergy among medical skills, trained manpower, technology and advancements in IT. Because– we believe in Transforming Healthcare.

2.1.4 Ibn Sina Specialized Hospital

The Ibn Sina Hospital was established in July 1983, Keeping in Pace with continuous development of medical technologies,Ibn Sina hospital has been rendering its services in the field of Medicine (Internal, Neuro, Nephro, Gastro-liver, Cardiac, Onco, Endocrine etc.), Surgery, Gynae, Neuro surgery, Spine Surgery, Knee Surgery, colorectal Surgery, Orthopedics Surgery, urology etc. It provides tertiary level of medical care in those fields. Besides it has opened a new horizon in Laparoscopic Abdominal and colorectal Surgery. With affordable cost it gives services to the ever increasing number of kidney patients through its dialysis unit equipped with most modern equipment and backed by a dedicated medical team.

Ibn SinaHospital is proud of its ICU unit for rendering round the clock intensive care services with the help of most modern and sophisticated equipments supported by a very dedicated, skilled, and efficient team of doctors, nurses and other staffs. Ibn Sina Hospital has 8 well equipped operation theater where C-Arm, Operating Microscope available to make operation more effective.

2.1.5 BIRDEM Hospital Pvt.

BIRDEM (Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders) is the first institute of diabetes, endocrine and metabolic diseases in Bangladesh. Though primarily focusing on diabetes care, it is now taking care of patients of all disciplines, hence later named as BIRDEM General Hospital. It is a tertiary care hospital. It is now a 16-storied building with nearly 600 beds.

The founder of BIRDEM, Professor Mohammad Ibrahim (1911-1989) was very much interested in social works, like social rehabilitation of patients. In the mid-fifties, he first thought of diabetes care in this country. He understood it very well that diabetes might not be cured; but persons affected would be able to maintain productive and respectful life. He thought

the matter as a socio-medical care. Although the real extent of the problem of diabetes in the country was not evident, he could foresee the present picture at that time and organized a group of social workers, philanthropists and professionals. With the help of them he established the Diabetic Association of Bangladesh (then East Pakistan) on February 28, 1956.

The motto of Professor Ibrahim was, 'No diabetic patient shall die untreated, unfed or unemployed even if poor'. He used to address the patients by saying that 'We are grateful to you for giving us the opportunity to serve'. He always aspired to serve the patients with empathy.

Diabetes care as out-patient service only was started in a tin-shed building at Segun Bagicha, Dhaka in 1957. There were no indoor facilities initially. Patients in need of hospitalization were sent to other hospitals. In the beginning of 70's few short-stay beds were established to take care of the seriously ill patients. He included social welfare, health education, nutrition and rehabilitation in the diabetes healthcare delivery system.

In 1976 a land was allocated in Shahbag of Dhaka by the Bangladesh government for the Diabetic Association of Bangladesh (Bengali acronym 'Bangladesh Diabetic Somiti'- BADAS). Upon this land foundation of BIRDEM was laid in 1977. The diabetes care facility of Segun Bagicha was shifted to this building. At first it was named as 'Bangladesh Institute of Diabetes and Rehabilitation'. Later it was changed to the current name 'BIRDEM'. Professor M. Ibrahim created and built up this institute with all his commitments; BIRDEM is the symbol of dedication of this great man; it is proclaiming the glory of this philanthropist. In 1982 it was designated as WHO Collaborating Center. After the demise of Professor M. Ibrahim in 1989, the diabetes care complex of BIRDEM has been named as 'Ibrahim Memorial Diabetes Centre'.

BIRDEM General Hospital-2 is the wing for women and children with nearly 150 beds. It is situated in the historic site of Segun Bagicha. It started working in 2012.

2.1.6 Maya Apa - Help at hand (Android App)

2 February 2015, Dhaka. In partnership with BRAC, maya.com.bd has launched the first ever one-touch help service app for women in Bangladesh. 'Maya Apa' is an android-based

mobile application, designed, developed, and implemented by female engineers, doctors, and entrepreneurs. It allows women (or any other user) to post questions anonymously, on health, legal and psychosocial issues. Within 48 hours, experts respond with tailor-made answers.

Maya Apa mobile app is based on the hugely successful web application 'Maya Apa Ki Bole' on maya.com.bd's website, the first anonymous question and answer platform in the country. Users can log in via their email address to post questions, allowing them to retain their anonymity. The platform is curated in both English and Bangla, where experts – a team of doctors, lawyers and psychosocial counsellors –respond in the language preferred by the users.

With the service developed for basic smartphones, BRAC Maya team is aiming to reach women and girls in both urban and rural areas of Bangladesh. At the app launch, director of BRAC's gender, justice and diversity, Sheepa Hafiza stated, "This app will not only create a greater access to information and services for women all over the country but also a nationwide consensus for a supportive society."

The app sets a precedence in the booming start-up culture whereby two female engineers developed a one-touch service app for women in Bangladesh. Achia Khaleda Nila and Shubrami Moutushy Mou, the developers of the application, believe that this 'one of a kind' app is instrumental in empowering women through technology.

Ivy H Russell, founder of Maya, added "We are motivated to continue innovating with the Maya Apa app. Our mission is to connect women to the knowledge they are looking for through technology, and there is a lot more on the roadmap this year". The app aims to bridge the digital divide by providing information to women, and empowering women of all walks of life in Bangladesh. The Maya Apa app is launching in both Bangla and English on 3 February2015. It can be found on Google Play Store for immediate download and usage.

2.1.7 URAL EMS (Android App)

For the first time in Bangladesh, URAL EMS introduced a convenient and simple emergency medical service platform. This is a location-based service that makes hiring an on-demand ambulance easy from mobile or desktop. With the tap of a button on smartphone device, hire an ambulance during emergency to pick up your critically ill patient and take him or her to

the desired hospitals or clinics. URAL EMS helps saving lives. It aims to transform the health space by bringing transparency in the ecosystem and ensuring faster ambulance response time.

Currently, URAL EMS offers four types of ambulances.

(1) AC Ambulance This is similar to standard ambulance with an additional feature of air conditioning. The base fare for this type of ambulance is BDT 500 and minimum fare is BDT 1000. There will be a paramedic/nurse and an oxygen cylinder with the vehicle. Additionally, there will be lifesaving medicines available in the ambulance.

(2)Non AC Ambulance This is the most basic non-A/C ambulance type. The base fare as well as minimum fare for this type of ambulance is BDT 500. There will be a paramedic/nurse and an oxygen cylinder with the vehicle. Additionally, there will be lifesaving medicines available in the ambulance.

(3)Freezer Ambulance A freezer ambulance is a dead body carrier ambulance. It has freeze box in it. The freezer ambulances can intact the dead body several hours and days. The base fare as well as minimum fare for this type of ambulance is BDT500. This initial contract will be valid for 24 hours.

(4)ICU Ambulance This is the ambulance type with intensive care for the patients. This is our high-end ambulance, which will be provided by renowned hospitals only. The base fare for this type of ambulance is BDT 1000 and minimum fare is 3000. There will be a team consisting doctor and nurse and a complete ICU setup within the vehicle.

How service works: Just a few easy steps serves your emergency medical trip.

1. Select pickup location of your patient and destination 2. Receive estimate of trip cost 3. Request for an ambulance service 4. Track assigned ambulance 5. Receive bill at the end of trip 6. Rate the trip

2.2 Conclusion

In our project we have added some functions, algorithms, methods, systems which will make our project stronger.Through which our healthcare will be further improved.People will benefit by accepting our services. Where some more function has been used, where there is a powerful admin panel, user approval system. We have developed an important algorithm in this project which is the pattern matching algorithm for searching users.As a result of using which the project has become more uniqe.

Chapter 3

Proposed Model

3.1 Introduction

After visiting those hospital and health related apps then we make a proposed model.We observation those healthcare systems and makes our proposal.First we visited a few hospitals where we took notes about their healthcare and doctor services.Where the procedures of Lab Aid Specialized Hospital are much better.Maintains all the health services and services of the hospital (doctors, nurses, treatments) very well.They maintain the procedure for admitting patients well, this service of their hospital gives it a good service. In the same way, the hospital's procedure in Square Hospital Ltd. is good and everything is under control.Then we visited EverCare Hospital Dhaka where their doctor service is much better,There are no treatment errors in this hospital due to the availability of adequate doctors.Then we visited Ibn Sina Specialized Hospital their nurse service there is much better ,Patients do not suffer from any slight problems.Then we visited some health service related apps. Where we have taken all the functions of the Uthers problem from Maya Apa - Help at hand (Android App) , including solutions to some of the patient's normal problems (cold fever, headacehe, hand and foot pain, allergies etc).In Maya Apa Apps, they solve the solution of these normal problems in a good way, the concept of which we have used in our project.Then we got the idea for the ambulance from URAL EMS (Android App), where the ambulance service is much better.Emergency calls actually reach their ambulance service quickly. This is how we visited various hospital and health related apps and developed the proposed model.

3.2 Proposal Concept

1. Users
    - Registration
    - Log in
    - Emergency
    - Information Collecting
    - Others Problem
    - Profile
2. Admin
    - Registration
    - Log in
    - Account Approval
    - Users info.
    - Nurse.
    - Ambulance
    - Hospital
    - Profile

3.3 Proposal Concept Details

3.3.1 Users:

1. Registration
    - Select Package
    - Payment
    - Username

- Password
- Age
- Gender
- Height
- Weight
- Regular disease Name and Details
- Drug Addicted

2. Login
    - Username
    - Password
3. Emergency
    - Heart attack
    - Brain stroke
    - Breathing Problem
    - Fracture sprain
    - Extreme stomach pain
4. Information Collecting
    - Systolic pressure(upper)
    - Diastolic pressure(lower)
    - Blood Sugar(mmol/L)
    - Heart rate at rest(BPM)
    - Body Temperature (F)
    - BMI
5. Others Problem

6. Profile
    - View Profile
    - Update Profile
    - Previous Record
    - Log out
    - Delete Account

3.3.2 Admin:

1. Account Approval
2. Users info.
    - Users list
    - User Details
    - Users Record
    - Add User
    - Delete User
3. Nurse.
    - Nurse list
    - Nurse Details
    - Add Nurse
    - Remove Nurse
4. Ambulance
    - Ambulance list
    - Ambulance Details
    - Add Ambulance

- Delete Ambulance

5. Hospital

- Hospital list
- Hospital Details
- Add Hospital
- Delete Hospital

6. Profile

- View Profile
- Update Profile
- Previous Record
- Log out
- Delete Account

3.4 Diagram:

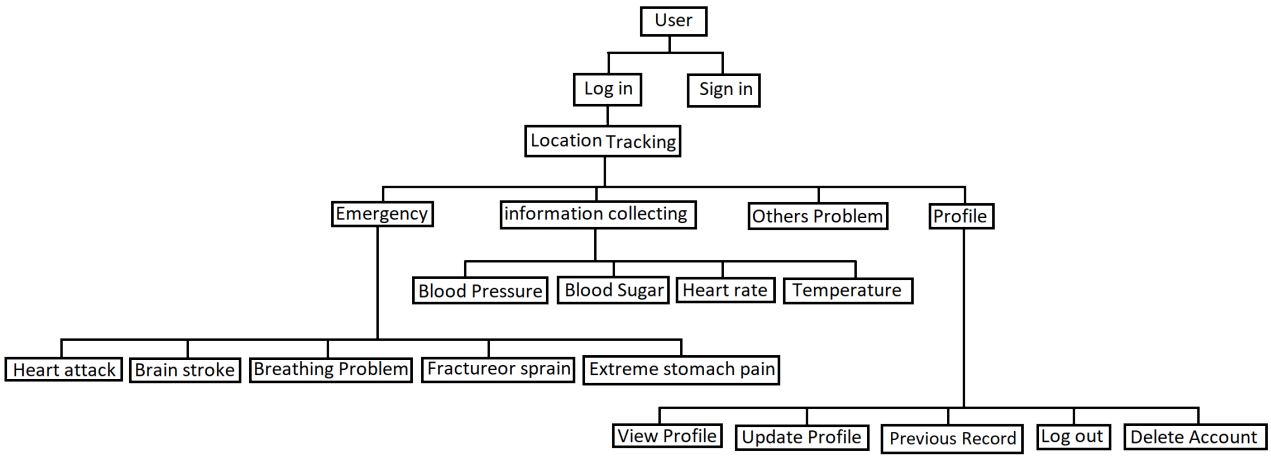


diagram-1

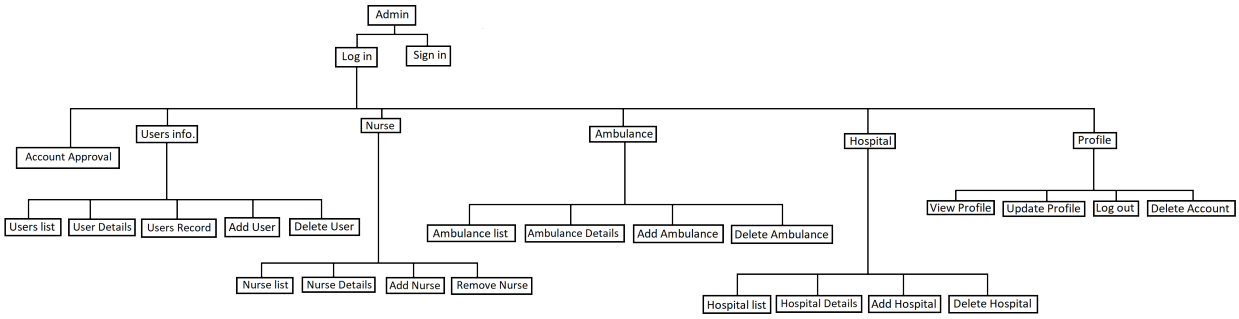


diagram-2

3.4.1 Figure:

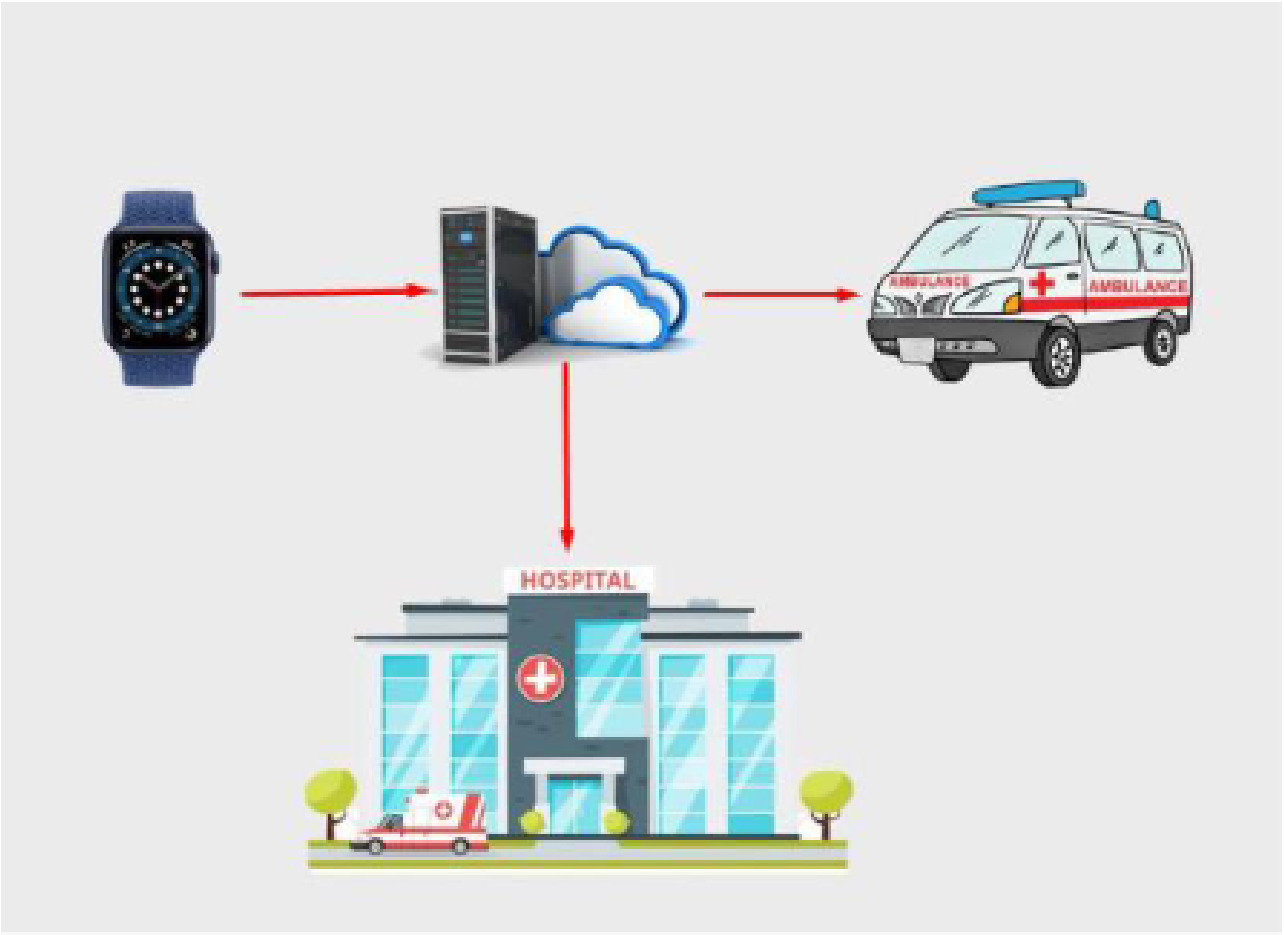


Figure-1

Chapter 4

System analysis

4.1 HARDWARE CONFIGURATION

Processor : core i3 8th Generation

RAM : 8GB

Hard Disk : 1TB

4.2 SOFTWARE CONFIGURATION

Operating System : Windows 10

Programming Language : c

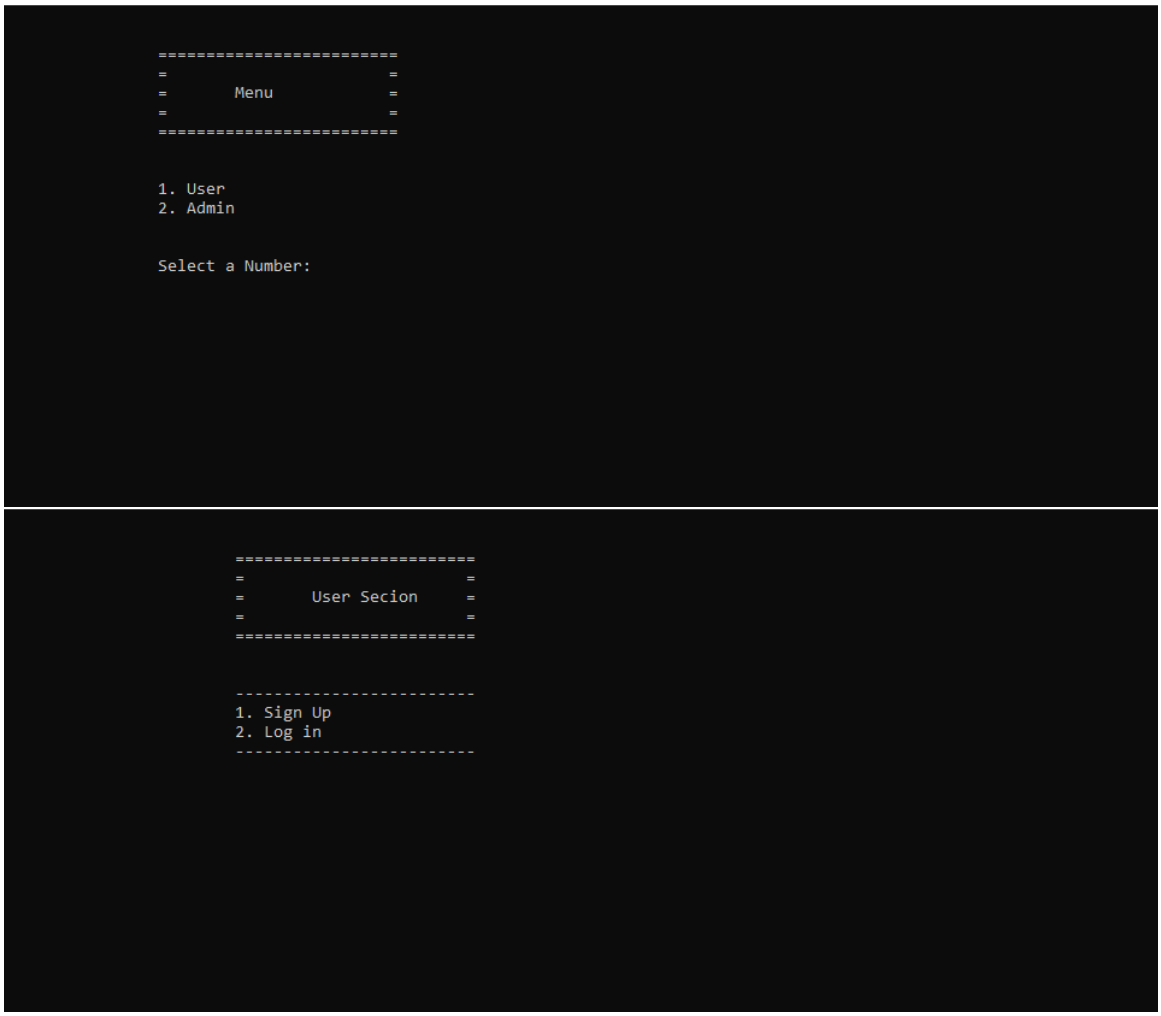
IDE: Code::Blocks

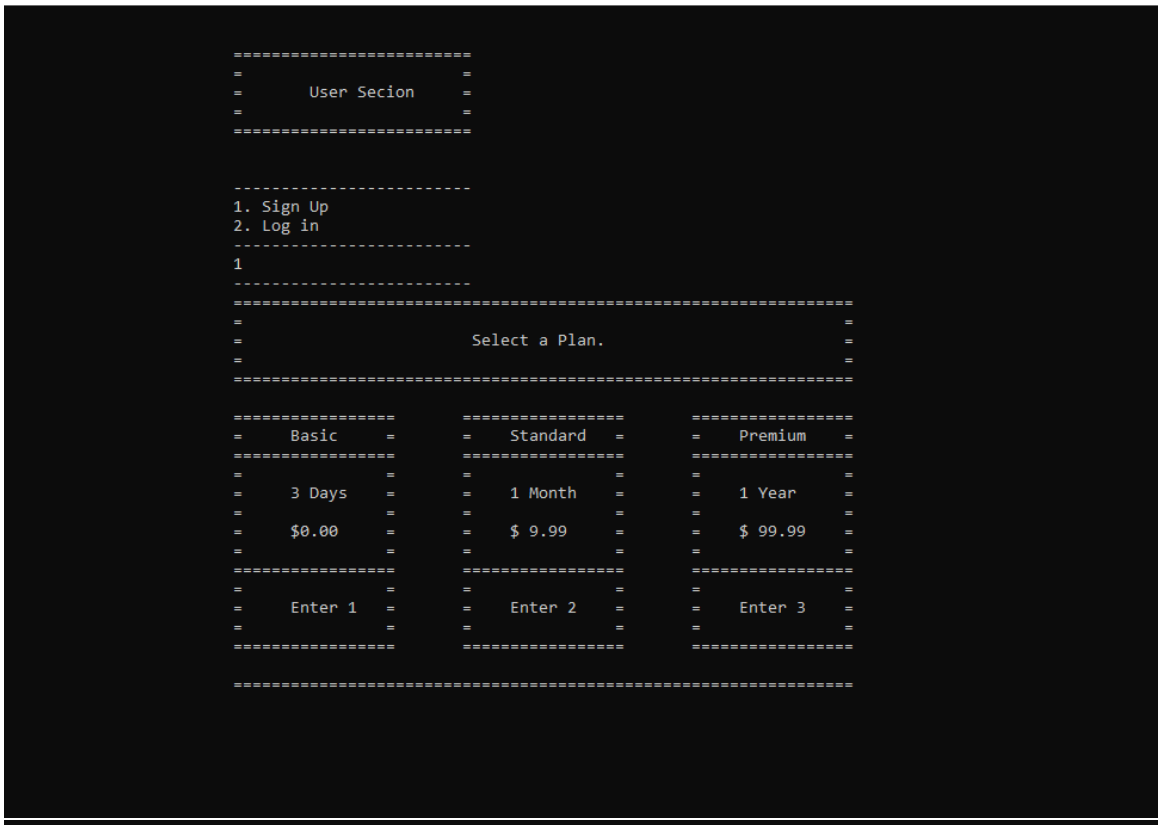
Used Software: Lightshot , Latex, GitHub

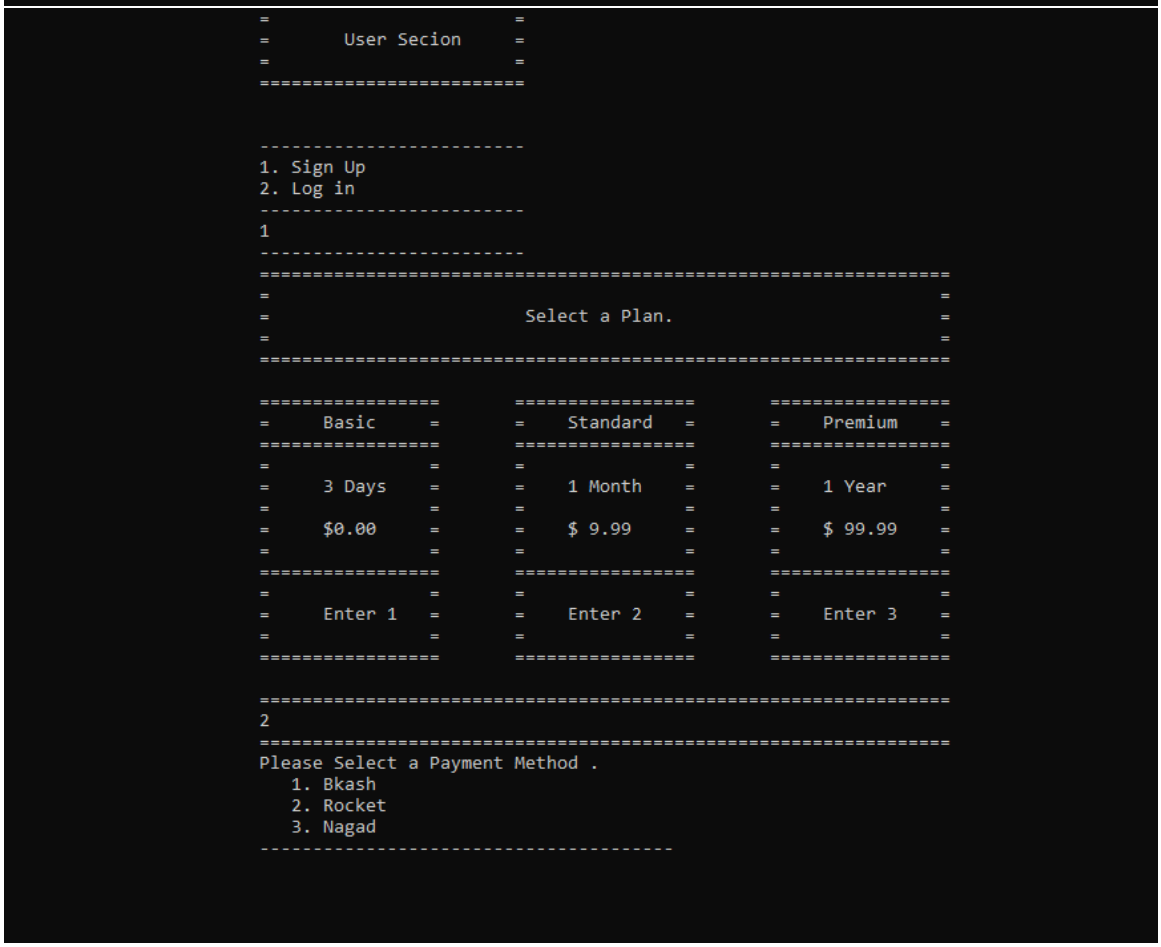
Chapter 5

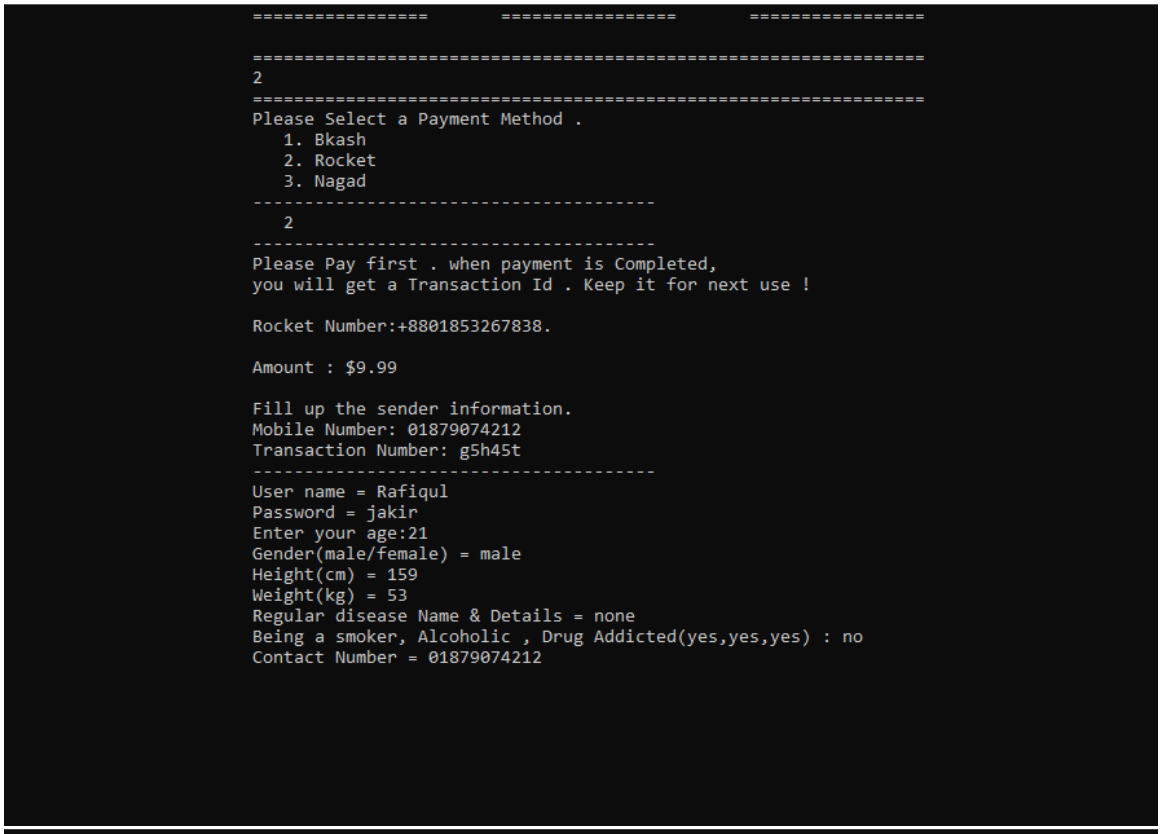
Experimental Results and Evaluation

5.1 Result Analysis




User Secion
1. Sign Up
2. Log in
1
Select a Plan.
Basic
3 Days
$0.00
Standard
1 Month
$ 9.99
Premium
1 Year
$ 99.99
Enter 1
Enter 2
Enter 3

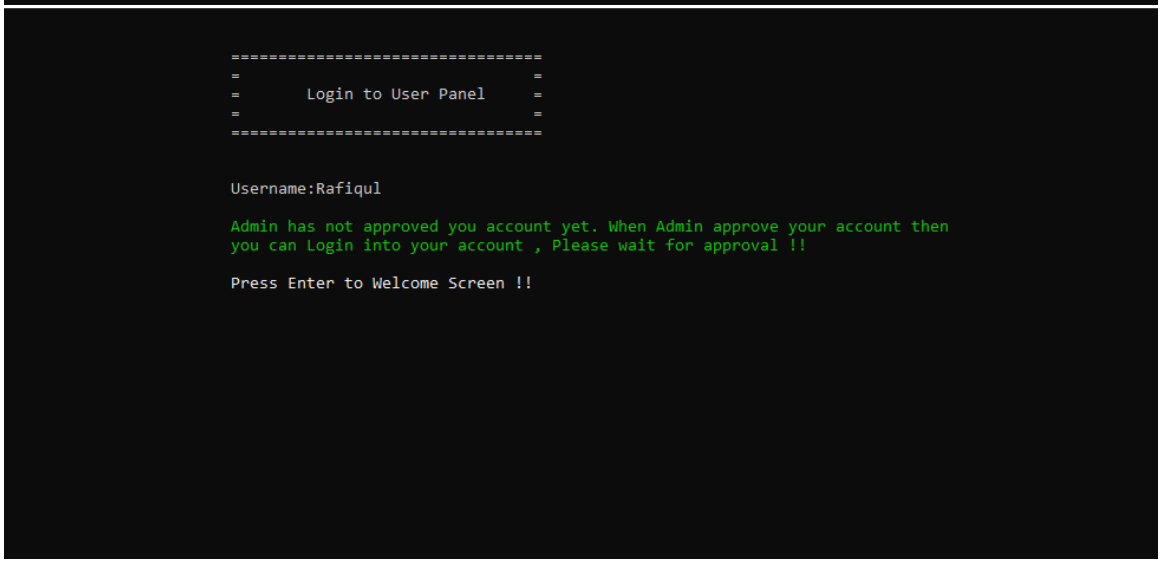

User Secion
1. Sign Up
2. Log in
1
Select a Plan.
Basic
3 Days
$0.00
Standard
1 Month
$ 9.99
Premium
1 Year
$ 99.99
Enter 1
Enter 2
Enter 3
2
Please Select a Payment Method .
1. Bkash
2. Rocket
3. Nagad


========== ========== ==========
==========
2
==========
Please Select a Payment Method .
1. Bkash
2. Rocket
3. Nagad

2

Please Pay first . when payment is Completed,
you will get a Transaction Id . Keep it for next use !
Rocket Number:+8801853267838.
Amount : $9.99
Fill up the sender information.
Mobile Number: 01879074212
Transaction Number: g5h45t

User name = Rafiqul
Password = jakir
Enter your age:21
Gender(male/female) = male
Height(cm) = 159
Weight(kg) = 53
Regular disease Name & Details = none
Being a smoker, Alcoholic , Drug Addicted(yes,yes,yes) : no
Contact Number = 01879074212


Login to User Panel
Username:Rafiqul
Admin has not approved you account yet. When Admin approve your account then
you can Login into your account , Please wait for approval !!
Press Enter to Welcome Screen !!

```
=========================
=                       =
=       User Secion     =
=                       =
=========================


-------------------------
1. Sign Up
2. Log in
-------------------------
2
-------------------------
Username:Rafiqul
Password:*****
Login successfully !!!

Enter your Current Location:Sonaimuri,Noakhali

-----------------------------------------
1. Emergency
2. Information Collecting
3. Others Problem
4. Profile
-----------------------------------------
```

```
361
362  //----------------------------------------emergency function start ----
363  void emergency()
364  {
365     int emergency_number ;
366     printf("\t\t\t\t1.Heart attack\n");
367     printf("\t\t\t\t2.Brain stroke\n");
368     printf("\t\t\t\t3.Breathing Problem\n");
369     printf("\t\t\t\t4.Fractureor sprain\n");
370     printf("\t\t\t\t5.Extreme stomach pain\n");
371     printf("\t\t\t\t----------------------------------------\n");
372     printf("\t\t\t\twhen you select any option from the li
373     printf("\t\t\t\t----------------------------------------\n\t\t\t\t");
374     scanf("%d",&emergency_number);
375     printf("\t\t\t\t----------------------------------------\n");
376     if(emergency_number == 1)
377     {
378        char Heart_attack[50] ="got Heart Attack";
379        ambulance(location, user_name, Heart_attack);
380        hospital(user_name,Heart_attack);
381        printf("\t\t\t\tFor User Menu press Enter!\n\t\t\t
382        gets(back_button);
383        getchar();
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                        -----------------------------------------
                        1. Emergency
                        2. Information Collecting
                        3. Others Problem
                        4. Profile
                        -----------------------------------------
                        1
                        -----------------------------------------
                                1.Heart attack
                                2.Brain stroke
                                3.Breathing Problem
                                4.Fractureor sprain
                                5.Extreme stomach pain
                                ----------------------------------------
                                when you select any option from the list,
                                we send it nearby  hospital and ambulance service !!
                                ----------------------------------------
```

```
//----------------------------Information_Collecting function start-----------------------------------------
void Information_Collecting()
{

   char nurse_username[30], nurse_pas
   int call_a_nurse;
   printf("\t\t\t\tCall a Nurse ?\n");
   printf("\t\t\t\t1. Yes\t 2.NO\n\t\t\t\t
   printf("-----------------------------\n\t\t\t\t")
   scanf("%d",&call_a_nurse);
   printf("\t\t\t\t-----------------------------
   if(call_a_nurse == 1)
   {
      nurse_message_sender();
      char folder[]="Nurse/";
      printf("\t\t\t\tNurse will come to yo
      printf("\t\t\t\t-----------------------------
      printf("\t\t\t\tUsername: ");
      getchar();
      gets(nurse_username);
      strcat(folder,nurse_username);
      strcat(folder,".txt");
      reg_info = fopen(folder,"r");
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                    ----------------------------------------
                    1. Emergency
                    2. Information Collecting
                    3. Others Problem
                    4. Profile
                    ----------------------------------------
                    2
                    ----------------------------------------
                            Call a Nurse ?
                            1. Yes   2.NO
                            ---------------------------------
                            1
                            ------------------------------------------------------
                            Nurse will come to your house as soon as possible.
                            Please wait for few minutes. When the nurse arrives she will
                            use her username and Password to send the necessary information to the server.
                            ------------------------------------------------------
                            Username: tonima
                            Password: abc
                            ------------------------------------------------------

                            Systolic pressure(upper):
```

```
      if(strcmp(nurse_username,nurse_f_username) == 0 && s
      {
         printf("\t\t\t\tSystolic pressure(upper):");
         scanf("%d",&systolic);
         printf("\n\t\t\t\tDiastolic pressure(lower):");
         scanf("%d",&diastolic);
         printf("\n\t\t\t\tBlood Sugar(mmol/L):");
         scanf("%f",&blood_sugar);
         printf("\n\t\t\t\tHeart rate at rest(BPM):");
         scanf("%d",&heart_rate);
         printf("\n\t\t\t\tBody Temperature (F):");
         scanf("%f",&body_temperature);
         printf("\t\t\t\tWe successfully collected all the data !");
         printf("\n\t\t\t----------------------------\n");
         Data_analysis();
      }
      else
      {
         printf("\t\t\t\tUser name or Password incorrect !!\n\n");
         printf("\t\t\t\tFor User Menu press Enter!\n\t\t\t\t");
         gets(back_button);
         system("cls");
         //----------for loading animation----------
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                                1. Yes   2.NO
                                ---------------------------------
                                1
                                ----------------------------------------
                                Nurse will come to your house as soon as po
                                Please wait for few minutes. When the nurse
                                use her username and Password to send the ne
                                ----------------------------------------
                                Username: tonima
                                Password: abc
                                ----------------------------------------

                                Systolic pressure(upper):158

                                Diastolic pressure(lower):92

                                Blood Sugar(mmol/L):6.5

                                Heart rate at rest(BPM):68

                                Body Temperature (F):102
```

```
//----------------------------data analysis function start-----------------------------------------
void Data_analysis()
{
   int advice_value;
   float  body_temperature ;
   printf("\t\t\tBlood pressure result: \n\t");
   blood_pressure();
   printf("\n\t\t\tBMI result: \n\t");
   BMI();
   printf("\n\t\t\tBlood sugar result: \n\t");
   blood_sugar_function();
   printf("\n\t\t\tHeart rate result: \n\t");
   Heart_rate();
   printf("\n\t\t\tBody Temperature result: \n\t");
   body_temperature_function();
   printf("\t\t\t----------------------------\n\t\t\t");
   printf("\n\t\t\tNeed Advice !\n");
   printf("\t\t\t1. Yes\t2.No\n");
   printf("\t\t\t----------------------------\n\t\t\t");
   scanf("%d",&advice_value);
   if(advice_value == 1)
   {
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                                We successfully collected all the data !
                            ----------------------------------------
                            Blood pressure result:
                                    High Blood Pressure (Hypertension) ,Stage-2

                            BMI result:
                                    BMI = 88.89
                                    Obesity class - III !

                            Blood sugar result:
                                    Normal !

                            Heart rate result:
                                    Great !

                            Body Temperature result:
                                    Severe sweating, flushed and red. Fast heart rate and breathlessn
stion accompanying this. Children and people with epilepsy may be very likely to get convulsions
                            ----------------------------------

                            Need Advice !
                            1. Yes  2.No
                            ----------------------------------
```

```
676 //-------------------------Others Problem function start ----------------------------------------------
677 void Others_Problem()
678 {
679
680     printf("\t\t\t\tplease write down you problem De
681     getchar();
682     gets(other_problem);
683     hospital_others_problem(user_name,other_pro
684     system("cls");
685
686     //----------for loading animation----------
687     int j,i;
688     //----------for loading animation----------
689     gotoxy(46,10);
690     printf("Loading...");
691     gotoxy(46,12);
692     for(i=1; i <= 20 ; i++)
693     {
694         for(j=0; j<=30000000 ; j++);
695         printf("%c",177);
696     }
697     system("cls");
698     printf("\n\n\t\t\t=========================\n\t\t\t=\t\t\t=\n\t\t\t=\tUser Section\t= \t\t\n\t\t\t=\t\t\t=\n\t\t\t=====
```

```
Select "C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                        =========================
                        =                       =
                        =       User Section    =
                        =                       =
                        =========================



                        ----------------------------------------
                        1. Emergency
                        2. Information Collecting
                        3. Others Problem
                        4. Profile
                        ----------------------------------------
                        3
                        ----------------------------------------
                                please write down you problem Details:
                                I have extream headech for last 2 days
```

```
65 //-------------------------------profile function start-----------------------------------------------
66 void profile()
67 {
68     int profile_number;
69     printf("\t\t\t\t1. View Profile \n");
70     printf("\t\t\t\t2. Update Profile \n");
71     printf("\t\t\t\t3. Log out \n");
72     printf("\t\t\t\t4. Delete Account \n");
73     printf("\t\t\t\t---------------------------------\n\t\t\t\t");
74     scanf("%d",&profile_number);
75     printf("\t\t\t\t---------------------------------\n");
76     if(profile_number == 1)
77     {
78         reg_info = fopen(temp_for_read,"r");
79         if(reg_info == NULL)
80         {
81             printf("File does not exist !!\n");
82         }
83         else
84         {
85
86             fscanf(reg_info, "%s", &user_name);
87             printf("\t\t\t\t\tUser name =  %s\n", user_name);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                        =========================
                        =                       =
                        =       User Section    =
                        =                       =
                        =========================



                        ----------------------------------------
                        1. Emergency
                        2. Information Collecting
                        3. Others Problem
                        4. Profile
                        ----------------------------------------
                        4
                        ----------------------------------------
                                1. View Profile
                                2. Update Profile
                                3. Log out
                                4. Delete Account
                                ----------------------------------------
```

```
    else
    {

      fscanf(reg_info, "%s", &user_name);
      printf("\t\t\t\tUser name =  %s\n", user_name);

      fscanf(reg_info, "%s",&password);
      printf("\t\t\t\tPassword = %s\n", password);

      fscanf(reg_info,"%d",&age);
      printf("\t\t\t\tAge = %d\n",age);

      fscanf(reg_info, "%s", &gender);
      printf("\t\t\t\tGender = %s\n",gender);

      fscanf(reg_info, "%f", &height);
      printf("\t\t\t\tHeight = %0.2f\n", height);

      fscanf(reg_info, "%f", &weight);
      printf("\t\t\t\tWeight = %0.2f\n", weight);

      fscanf(reg_info, "%[^\n]%*c", &regu_disease);
      printf("\t\t\t\tRegular disease Name& Details =  %s\n", regu_disease);
```

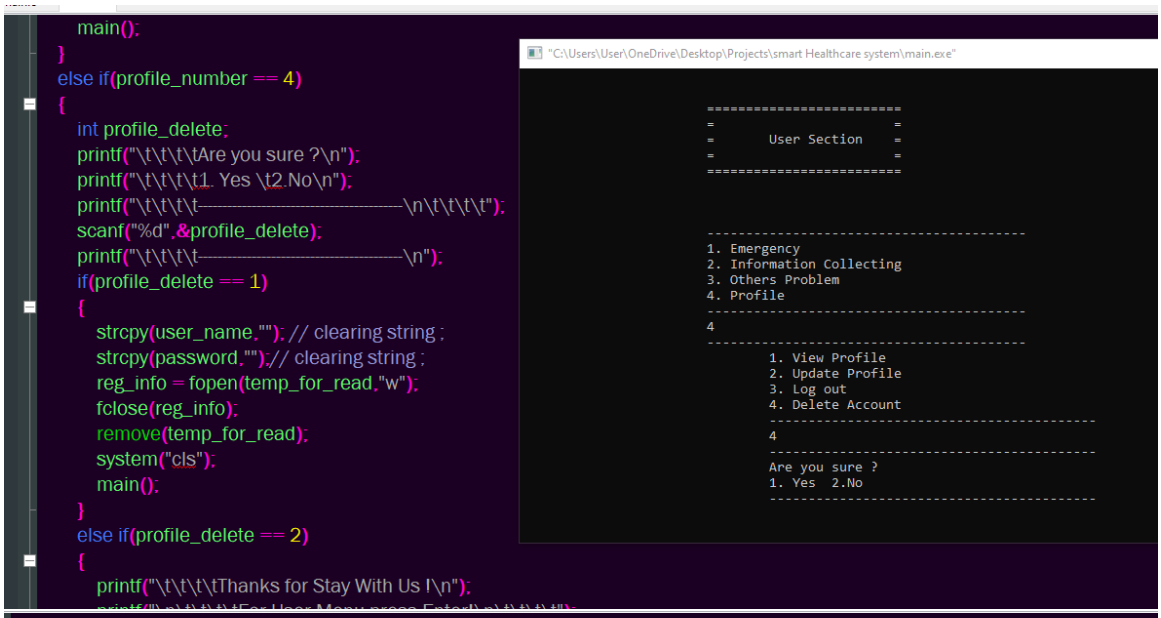
```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    3. Others Problem
                    4. Profile
                    ----------------------------------------
                    4
                    ----------------------------------------
                            1. View Profile
                            2. Update Profile
                            3. Log out
                            4. Delete Account
                            ----------------------------------------
                            1
                            ----------------------------------------
                                    User name =  Sanzida
                                    Password = abc123456
                                    Age = 21
                                    Gender = female
                                    Height = 105.00
                                    Weight = 98.00
                                    Regular disease Name& Details =  none
                                    Being a smoker, Alcoholic , Drug Addicted(yes,yes
                                    Phone Number = 187548258

                                For User Menu press Enter!
```

```
//----------------profile update function start-----------------
void profile_update()
{
  char folder[150]="Users List/";
  printf("\t\t\t\tUser name = ");
  getchar();
  gets(user_name);
  strcpy(temp,user_name);
  strcat(user_name,".txt");
  strcat(folder,user_name);
  reg_info = fopen(folder,"w");
  if(reg_info == NULL)
  {
    printf("File does not exist !!\n");
  }
  else
  {

    printf("\t\t\t\tPassword = ");
    gets(password);

    printf("\t\t\t\tEnter your age:");
    scanf("%d",&age);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    2. Information Collecting
                    3. Others Problem
                    4. Profile
                    ----------------------------------------
                    4
                    ----------------------------------------
                            1. View Profile
                            2. Update Profile
                            3. Log out
                            4. Delete Account
                            ----------------------------------------
                            2
                            ----------------------------------------
                            User name = Sanzida
                            Password = abc
                            Enter your age:21
                            Gender(male/female) = female
                            Height(cm) = 158
                            Weight(kg) = 57
                            Regular disease Name & Details = none
                            Being a smoker, Alcoholic , Drug Addicted(yes,yes,yes) : no.yes,no
```

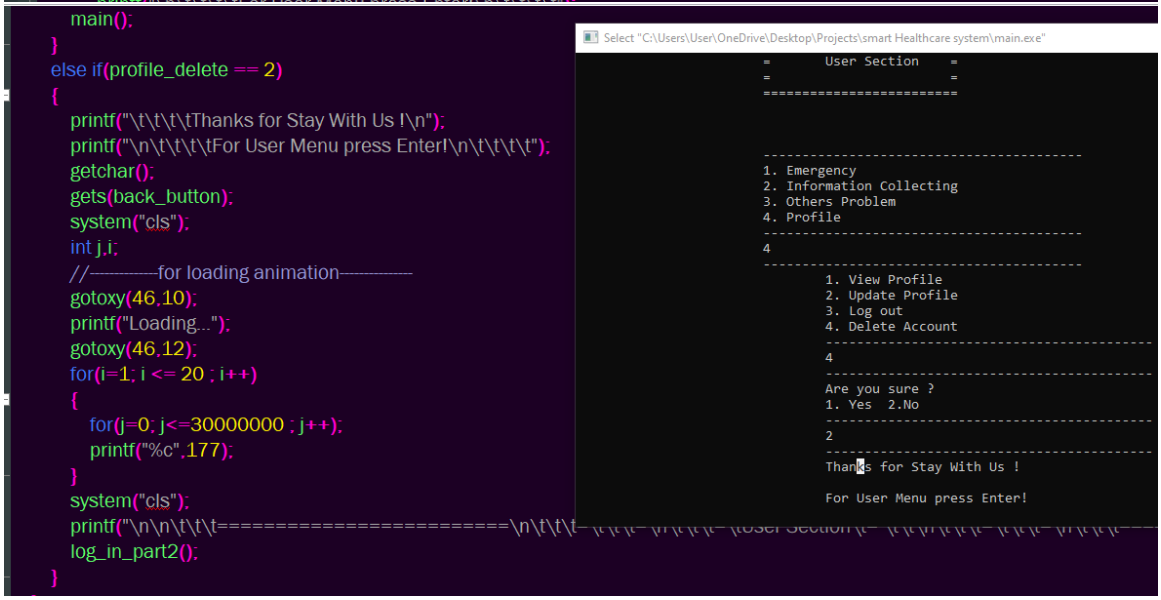
```
    else
    {

      printf("\t\t\t\tPassword = ");
      gets(password);

      printf("\t\t\t\tEnter your age:");
      scanf("%d",&age);

      printf("\t\t\t\tGender(male/female) =
      scanf("%s",&gender);

      printf("\t\t\t\tHeight(cm) = ");
      scanf("%f",&height);

      printf("\t\t\t\tWeight(kg) = ");
      scanf("%f",&weight);

      printf("\t\t\t\tRegular disease Name
      getchar();
      gets(regu_disease);

      printf("\t\t\t\tBeing a smoker, Alcoholic , Drug Addicted(yes,yes,yes) : ");
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    2. Information Collecting
                    3. Others Problem
                    4. Profile
                    ----------------------------------------
                    4
                    ----------------------------------------
                            1. View Profile
                            2. Update Profile
                            3. Log out
                            4. Delete Account
                            ----------------------------------------
                            2
                            ----------------------------------------
                            User name = Sanzida
                            Password = abc
                            Enter your age:21
                            Gender(male/female) = female
                            Height(cm) = 158
                            Weight(kg) = 57
                            Regular disease Name & Details = none
                            Being a smoker, Alcoholic , Drug Addicted(yes,yes,yes) : no.yes,no
                            Contact Number = 01879074212
                            ------------------------------------------
                            Profile update Successfully !!

                            For User Menu press Enter!
```



```
    main();
  }
  else if(profile_number == 4)
  {
    int profile_delete;
    printf("\t\t\t\tAre you sure ?\n");
    printf("\t\t\t\t1. Yes \t2.No\n");
    printf("\t\t\t\t----------------------------------------\n\t\t\t\t\t");
    scanf("%d",&profile_delete);
    printf("\t\t\t\t----------------------------------------\n");
    if(profile_delete == 1)
    {
      strcpy(user_name,""); // clearing string ;
      strcpy(password,"");// clearing string ;
      reg_info = fopen(temp_for_read,"w");
      fclose(reg_info);
      remove(temp_for_read);
      system("cls");
      main();
    }
    else if(profile_delete == 2)
    {
      printf("\t\t\t\tThanks for Stay With Us !\n");
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                        ========================
                        =                      =
                        =       User Section   =
                        =                      =
                        ========================



                        ----------------------------------------
                        1. Emergency
                        2. Information Collecting
                        3. Others Problem
                        4. Profile
                        ----------------------------------------
                        4
                        ----------------------------------------
                                1. View Profile
                                2. Update Profile
                                3. Log out
                                4. Delete Account
                                ----------------------------------------
                                4
                                ----------------------------------------
                                Are you sure ?
                                1. Yes  2.No
                                ----------------------------------------
```



```
    main();
  }
  else if(profile_delete == 2)
  {
    printf("\t\t\t\tThanks for Stay With Us !\n");
    printf("\n\t\t\t\tFor User Menu press Enter!\n\t\t\t\t");
    getchar();
    gets(back_button);
    system("cls");
    int j,i;
    //------------for loading animation------------
    gotoxy(46,10);
    printf("Loading...");
    gotoxy(46,12);
    for(i=1; i <= 20 ; i++)
    {
      for(j=0; j<=30000000 ; j++);
      printf("%c",177);
    }
    system("cls");
    printf("\n\n\t\t\t=========================\n\t\t\t
    log_in_part2();
  }
```

```
Select "C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                        =       User Section   =
                        =                      =
                        ========================



                        ----------------------------------------
                        1. Emergency
                        2. Information Collecting
                        3. Others Problem
                        4. Profile
                        ----------------------------------------
                        4
                        ----------------------------------------
                                1. View Profile
                                2. Update Profile
                                3. Log out
                                4. Delete Account
                                ----------------------------------------
                                4
                                ----------------------------------------
                                Are you sure ?
                                1. Yes  2.No
                                ----------------------------------------
                                2
                                ----------------------------------------
                                Thanks for Stay With Us !

                                For User Menu press Enter!
```

```
{
    int profile_delete;
    printf("\t\t\t\tAre you sure ?\n");
    printf("\t\t\t\t1. Yes \t2.No\n");
    printf("\t\t\t\t----------\n\t\t\t\t");
    scanf("%d",&profile_delete);
    printf("\t\t\t\t----------\n");
    if(profile_delete == 1)
    {
        strcpy(user_name,""); // clearing string ;
        strcpy(password,"");// clearing string ;
        reg_info = fopen(temp_for_read,"w");
        fclose(reg_info);
        remove(temp_for_read);
        system("cls");
        main();
    }
    else if(profile_delete == 2)
    {
        printf("\t\t\t\tThanks for Stay With Us !\n");
        printf("\n\t\t\t\tFor User Menu press Enter!\n\t\t\t\t");
        getchar();
        gets(back_button);
```

```
Select "C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                =       User Section    =
                =                       =
                ========================


                ----------------------------------------
                1. Emergency
                2. Information Collecting
                3. Others Problem
                4. Profile
                ----------------------------------------
                4
                ----------------------------------------
                        1. View Profile
                        2. Update Profile
                        3. Log out
                        4. Delete Account
                        ----------------------------------------
                        4
                        ----------------------------------------
                        Are you sure ?
                        1. Yes  2.No
                        ----------------------------------------
                        2
                        ----------------------------------------
                        Thanks for Stay With Us !

                        For User Menu press Enter!
```

```
//----------admin panel start----------
void admin()
{
    int admin_number,i,j;
    system("cls");
    //----------for loading animation----------
    gotoxy(46,10);
    printf("Loading...");
    gotoxy(46,12);
    for(i=1; i <= 20 ; i++)
    {
        for(j=0; j<=32000000 ; j++);
        printf("%c",177);
    }
    system("cls");
    //----------end of loading animation----------
    printf("\n\n\t\t\t==========");
    printf("\t\t\t----------\n");
    printf("\t\t\t1. Sign Up\n");
    printf("\t\t\t2. Log in \n");
    printf("\t\t\t----------\n\t\t\t");
    scanf("%d",&admin_number);
    printf("\t\t\t----------\n");
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"


                ==========
                =        =
                =  Admin Panel  =
                =        =
                ==========


                ----------
                1. Sign Up
                2. Log in
                ----------
```

```c
//---------------------------- admin register function start ----------------------------------------------------
void admin_register()
{
   admin_file = fopen("admin_info.txt", "w");
   if(admin_file == NULL)
   {
      printf("\t\t\tFile does not exist !!\n");
   }
   else
   {
      printf("\t\t\tUser name = ");
      getchar();
      gets(admin_user_name);

      printf("\t\t\tPassword = ");
      gets(admin_password);

      printf("\t\t\te-mail: ");
      gets(admin_email);

      printf("\t\t\tEnter your age:");
      scanf("%d",&admin_age);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

=========================
=                       =
=       Admin Panel     =
=                       =
=========================


-------------------------
1. Sign Up
2. Log in
-------------------------
1
-------------------------
User name = Rafiqul
Password = jakir
e-mail: rafiquljakir@gmail.com
Enter your age:21
Gender(male/female) = male
Contact Number = 01879074212
```

```c
//-------------------------------admin login function start----------------------------------------------------
void admin_login()
{
   int cmp_result1,cmp_result2,ch='a',k=0;
   char admin_log_password[20]="a", admin_log
   admin_file = fopen("admin_info.txt","r");
   fscanf(admin_file, "%s %s %s %d %s %s",&admi
   printf("\t\t\tUsername:");
   scanf("%s",&admin_log_username);
   getchar();
   printf("\t\t\tPassword:");

   //-------for password hiding-------------
   while(1)
   {
      ch = getch();
      if(ch == ENTER)
      {
         break;
      }
      else if(ch == BKSP)
      {
         k--;
         printf("\b \b");
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

================================
=                              =
=       Login to Admin Panel   =
=                              =
================================


Username:Rafiqul
Password:*****
----------------------------------------
Login successfully !!!
----------------------------------------
1. Users info.
2. Nurse.
3. Ambulance
4. Hospital
5. Profile
----------------------------------------
```

```c
//----------------------------admin login part 2 function start-----------------------------------------------------
void admin_login_part2()
{
  int admin_menu;
  printf("\t\t\t----------------------------------\n");
  printf("\t\t\t1. Users info.\n");
  printf("\t\t\t2. Nurse.\n");
  printf("\t\t\t3. Ambulance\n");
  printf("\t\t\t4. Hospital\n");
  printf("\t\t\t5. Profile\n");
  printf("\t\t\t----------------------------------\n\t\t\t");
  scanf("%d",&admin_menu);
  printf("\t\t\t----------------------------------\n");
  if(admin_menu == 1)
  {
    user_information();
  }
  else if(admin_menu == 2)
  {
    admin_nurse();
  }
  else if(admin_menu == 3)
  {
    admin_ambulance();
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                ================================
                =                              =
                =       Login to Admin Panel   =
                =                              =
                ================================


                Username:Rafiqul
                Password:*****
                ----------------------------------------
                Login successfully !!!
                ----------------------------------------
                1. Users info.
                2. Nurse.
                3. Ambulance
                4. Hospital
                5. Profile
                ----------------------------------------
```

```c
//----------------------------------users information function st
void user_information()
{
  int user_information;
  printf("\t\t\t\t1. Users list \n");
  printf("\t\t\t\t2. User Details \n");
  printf("\t\t\t\t3. Add User \n");
  printf("\t\t\t\t4. Delete User\n");
  printf("\t\t\t\t----------------------------------\n\t\t\t\t\t");
  scanf("%d",&user_information);
  printf("\t\t\t\t----------------------------------\n");
  if(user_information == 1)
  {
    user_list();
  }
  else if(user_information == 2)
  {
    char user_details[30],folder[]="Users List/";;
    strcpy(user_name,""); // clearing string ;
    strcpy(password,"");// clearing string ;

    printf("\t\t\t\tDetails info. for : ");
    getchar();
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                Login successfully !!!
                ----------------------------------------
                1. Users info.
                2. Nurse.
                3. Ambulance
                4. Hospital
                5. Profile
                ----------------------------------------
                1
                ----------------------------------------
                        1. Users list
                        2. User Details
                        3. Add User
                        4. Delete User
                        ----------------------------------------
```

```
//----------------------------------user list function start ----------------------------------------------------------
void user_list()
{
  admin_file = fopen("users_list.txt","r");
  char abc[100];
  printf("\t\t\t\tUser name\tPassword\tPacl
  printf("\t\t\t\t-----------------------------------------
  while(fgets(abc,sizeof(abc),admin_file) !=
  {
    fputs("\t\t\t\t",stdout);
    fputs(abc,stdout);
  }
  fclose(admin_file);
  printf("\t\t\t\t");
  getchar();
  gets(back_button);;
  system("cls");

  //------------for loading animation------------
  int j,i;
  //------------for loading animation------------
  gotoxy(46,10);
  printf("Loading...");
```

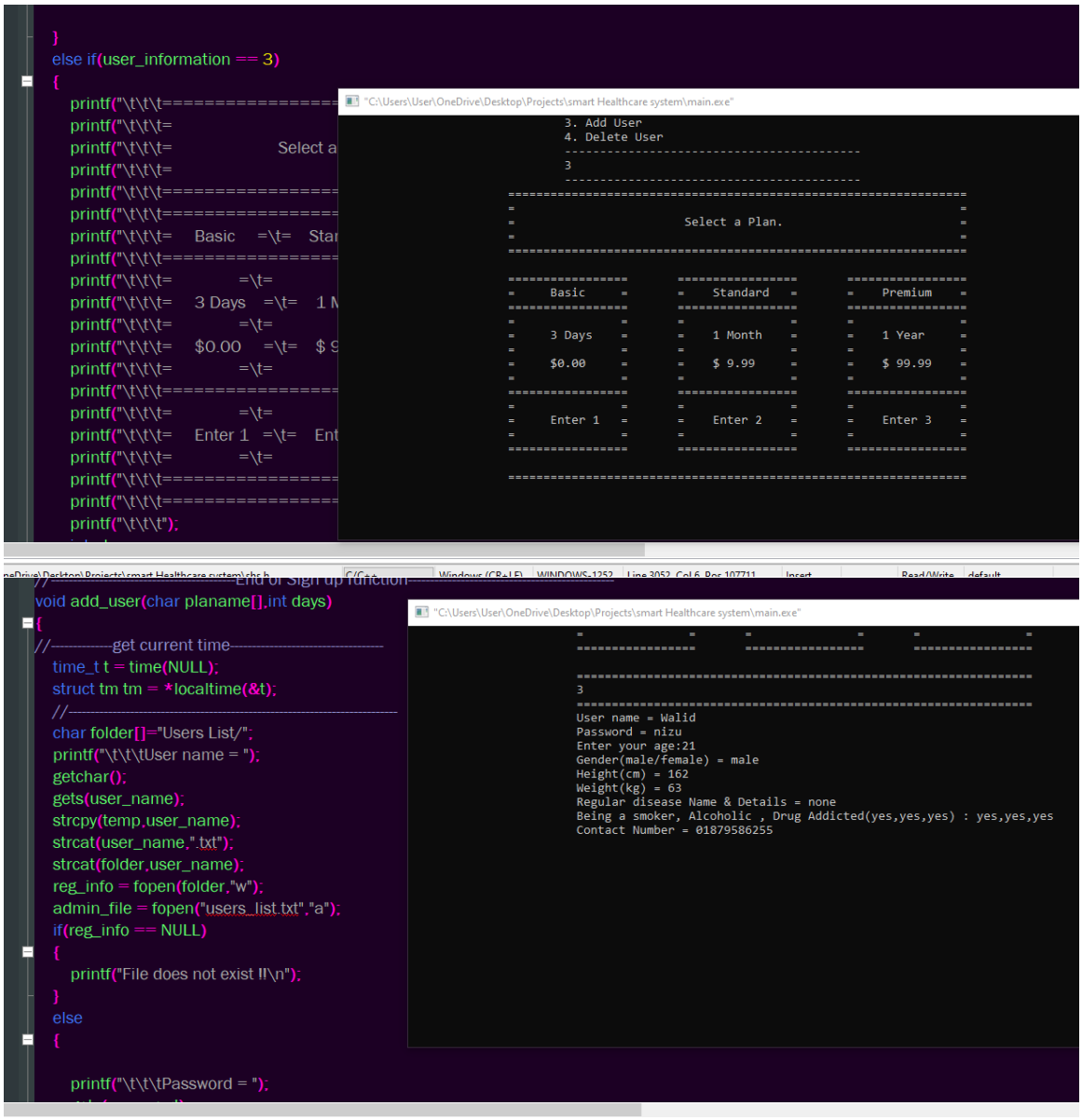
```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    Login successfully !!!
                    ----------------------------------------
                    1. Users info.
                    2. Nurse.
                    3. Ambulance
                    4. Hospital
                    5. Profile
                    ----------------------------------------
                    1
                    ----------------------------------------
                            1. Users list
                            2. User Details
                            3. Add User
                            4. Delete User
                            ----------------------------------------
                            1
                            ----------------------------------------
                            User name       Password        Packege   Reg. Date     Exp. Date
                            ------------------------------------------------------------------
                            Jannat          abc             Standard  2021-02-25    27-3-2021
                            Rafiqul         abc             Premium   2021-02-25    25-2-2022
                            Shawon          abc             Standard   2021-02-26   28-3-2021
                            Rafiqul         jakir           Standard   2021-02-26   28-3-2021
                            Rifat           abc             Premium   2021-02-26    26-2-2022
                            Tonima          abc             Basic   2021-02-26      1-3-2021
                            Sanzida         abc123456               Standard   2021-02-27   29-3-2021
```

```
}
else if(user_information == 2)
{
  char user_details[30],folder[]="Users List/";;
  strcpy(user_name,""); // clearing string ;
  strcpy(password,"");// clearing string ;

  printf("\t\t\t\tDetails info. for : ");
  getchar();
  gets(user_details);
  strcat(user_details,".txt");
  strcat(folder,user_details);
  reg_info = fopen(folder,"r");
  if(reg_info == NULL)
  {
    printf("\t\t\t\tUsername not found ! \n");
  }
  else
  {
    fscanf(reg_info, "%s %s %d %s %f %f %[^\n]%

    printf("\t\t\t\t\tUser name =  %s\n", user_name);

    printf("\t\t\t\t\tPassword = %s\n", password);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    4. Delete User
                    ----------------------------------------
                    2
                    ----------------------------------------
                    Details info. for : Tonima
                            User name =
                            Password =
                            Age = 0
                            Gender =
                            Height = 0.00
                            Weight = 0.00
                            Regular disease Name& Details =
                            Being a smoker, Alcoholic , Drug Addicted(yes,yes,yes)
                            Phone Number =
```

```
}
else if(user_information == 2)
{
  char user_details[30],folder[]="Users List
  strcpy(user_name,""); // clearing string ;
  strcpy(password,"");// clearing string ;

  printf("\t\t\t\tDetails info. for : ");
  getchar();
  gets(user_details);
  strcat(user_details,".txt");
  strcat(folder,user_details);
  reg_info = fopen(folder,"r");
  if(reg_info == NULL)
  {
    printf("\t\t\t\tUsername not found ! \n")
  }
  else
  {
    fscanf(reg_info, "%s %s %d %s %f %f %[^

    printf("\t\t\t\t\tUser name =  %s\n", use

    printf("\t\t\t\t\tPassword = %s\n", password);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    ----------------------------------------
                    1
                    ----------------------------------------
                            1. Users list
                            2. User Details
                            3. Add User
                            4. Delete User
                            ----------------------------------------
                            2
                            ----------------------------------------
                            Details info. for : Sanzida
                                    User name =  Sanzida
                                    Password = abc
                                    Age = 21
                                    Gender = female
                                    Height = 158.00
                                    Weight = 57.00
                                    Regular disease Name& Details =  none
                                    Being a smoker, Alcoholic , Drug Addicted(yes,yes,yes) : no.ye
                                    Phone Number = 1879074212
```


}
else if(user_information == 3)
{
printf("\t\t\t==========
printf("\t\t\t=
printf("\t\t\t= Select a
printf("\t\t\t=
printf("\t\t\t==========
printf("\t\t\t==========
printf("\t\t\t= Basic =\t= Star
printf("\t\t\t==========
printf("\t\t\t= =\t=
printf("\t\t\t= 3 Days =\t= 1 M
printf("\t\t\t= =\t=
printf("\t\t\t= $0.00 =\t= $ 9
printf("\t\t\t= =\t=
printf("\t\t\t==========
printf("\t\t\t= =\t=
printf("\t\t\t= Enter 1 =\t= Ent
printf("\t\t\t= =\t=
printf("\t\t\t==========
printf("\t\t\t==========
printf("\t\t\t");
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
3. Add User
4. Delete User
3
Select a Plan.
Basic
Standard
Premium
3 Days
1 Month
$ 9.99
1 Year
$ 99.99
Enter 1
Enter 2
Enter 3

//----------End of Sign up function----------
void add_user(char planame[],int days)
{
//----------get current time----------
time_t t = time(NULL);
struct tm tm = *localtime(&t);
//----------
char folder[]="Users List/";
printf("\t\t\tUser name = ");
getchar();
gets(user_name);
strcpy(temp,user_name);
strcat(user_name,".txt");
strcat(folder,user_name);
reg_info = fopen(folder,"w");
admin_file = fopen("users_list.txt","a");
if(reg_info == NULL)
{
printf("File does not exist !!\n");
}
else
{
printf("\t\t\tPassword = ");
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
3
User name = Walid
Password = nizu
Enter your age:21
Gender(male/female) = male
Height(cm) = 162
Weight(kg) = 63
Regular disease Name & Details = none
Being a smoker, Alcoholic , Drug Addicted(yes,yes,yes) : yes,yes,yes
Contact Number = 01879586255

```
}
else if(user_information == 4)
{

   char delete_user_name[30],temp_delete_user[30],folder[]="Users List/";;
   strcpy(user_name,""); // clearing string ;
   strcpy(password,"");// clearing string ;

   printf("\t\t\t\tUser name for delete: ");
   getchar();
   gets(delete_user_name);
   strcpy(temp_delete_user,delete_user_name);
   strcat(delete_user_name,".txt");
   strcat(folder,delete_user_name);
   int del = remove(folder);
   if (!del)
   {
      printf("\t\t\t\tUser Deleted successfully\n\t\t\t\t");
      gets(back_button);
      system("cls");

      //------------for loading animation------------
      int j,i;
      //------------for loading animation------------
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                        ========================
                        =                      =
                        =       Admin Panel    =
                        =                      =
                        ========================


                        ----------------------------------------
                        1. Users info.
                        2. Nurse.
                        3. Ambulance
                        4. Hospital
                        5. Profile
                        ----------------------------------------
                        1
                        ----------------------------------------
                                1. Users list
                                2. User Details
                                3. Add User
                                4. Delete User
                                ----------------------------------------
                                4
                                ----------------------------------------
                                User name for delete: Sanzida
                                User Deleted successfully
```

```
void admin_nurse()
{
   char nurse_user_name[30], nurse_password[30], nurse_temp[30], nurse_working_exp[100], nurse_ph_num[15], nurse_hospita
   int nurse_option,nurse_age;
   printf("\t\t\t\t1. Nurse list \n");
   printf("\t\t\t\t2. Nurse Details \n");
   printf("\t\t\t\t3. Add Nurse \n");
   printf("\t\t\t\t4. Remove Nurse\n");
   printf("\t\t\t\t----------------------------------\n\t\t\t
   scanf("%d",&nurse_option);
   printf("\t\t\t\t----------------------------------\n");
   if(nurse_option == 1)
   {
      nurse_list();
   }
   else if(nurse_option == 2)
   {
      char nurse_details[30],folder[]="Nurse/";
      printf("\t\t\t\tDetails info. for : ");
      getchar();
      gets(nurse_details);
      printf("\n");
      strcat(nurse_details,".txt");
      strcat(folder,nurse_details);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                        ========================
                        =                      =
                        =       Admin Panel    =
                        =                      =
                        ========================


                        ----------------------------------------
                        1. Users info.
                        2. Nurse.
                        3. Ambulance
                        4. Hospital
                        5. Profile
                        ----------------------------------------
                        2
                        ----------------------------------------
                                1. Nurse list
                                2. Nurse Details
                                3. Add Nurse
                                4. Remove Nurse
                                ----------------------------------------
```

```
void nurse_list()
{
   admin_file = fopen("Nurse_list.txt","r");
   char abc[100];
   printf("\t\t\t\tUser name\tPassword\n");
   printf("\t\t\t\t----------------------------------------\n");
   while(fgets(abc,sizeof(abc),admin_file) != NULL)
   {
      fputs("\t\t\t\t",stdout);
      fputs(abc,stdout);
   }
   fclose(admin_file);
   printf("\t\t\t\t");
   getchar();
   gets(back_button);;
   system("cls");

   //------------for loading animation------------
   int j,i;
   //------------for loading animation------------
   gotoxy(46,10);
   printf("Loading...");
   gotoxy(46,12);
   for(i=1; i <= 20 ; i++)
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                ----------------------------------------
                1. Users info.
                2. Nurse.
                3. Ambulance
                4. Hospital
                5. Profile
                ----------------------------------------
                2
                ----------------------------------------
                        1. Nurse list
                        2. Nurse Details
                        3. Add Nurse
                        4. Remove Nurse
                        ----------------------------------------
                        1
                        ----------------------------------------
                        User name       Password
                        ----------------------------------------

                        tonima          abc
                        Sanzida         abc
```

```
else if(nurse_option == 2)
{
   char nurse_details[30],folder[]="Nurse/";;
   printf("\t\t\t\tDetails info. for : ");
   getchar();
   gets(nurse_details);
   printf("\n");
   strcat(nurse_details,".txt");
   strcat(folder,nurse_details);
   reg_info = fopen(folder,"r");
   if(reg_info == NULL)
   {
      printf("\t\t\t\tNurse not found ! \n");
   }
   else
   {
      fscanf(reg_info, "%[^\n]%*c %[^\n]%*c %d %[^                                    ,&nurs

      printf("\t\t\t\t\tUser name : %s\n", nurse_user

      printf("\t\t\t\t\tPassword : %s\n", nurse_pass

      printf("\t\t\t\t\tAge : %d\n",nurse_age);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                ----------------------------------------
                1. Users info.
                2. Nurse.
                3. Ambulance
                4. Hospital
                5. Profile
                ----------------------------------------
                2
                ----------------------------------------
                        1. Nurse list
                        2. Nurse Details
                        3. Add Nurse
                        4. Remove Nurse
                        ----------------------------------------
                        2
                        ----------------------------------------
                        Details info. for : Jannat

                                User name : Jannat
                                Password : abc
                                Age : 21
                                Working Experience : years
                                Phone Number : 187952148
```

```
{
  char folder[]="Nurse/";
  printf("\t\t\t\tUser name : ");
  getchar();
  gets(nurse_user_name);
  strcpy(nurse_temp,nurse_user_name);
  strcat(nurse_user_name,".txt");
  strcat(folder,nurse_user_name);
  reg_info = fopen(folder,"w");
  admin_file = fopen("Nurse_list.txt","a");
  if(reg_info == NULL)
  {
     printf("File does not exist !!\n");
  }
  else
  {
     printf("\t\t\t\tPassword : ");
     gets(nurse_password);

     printf("\t\t\t\tEnter your age:");
     scanf("%d",&nurse_age);

     printf("\t\t\t\tHospital Name: ");
     getchar();
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    3. Ambulance
                    4. Hospital
                    5. Profile
                    ----------------------------------------
                    2
                    ----------------------------------------
                            1. Nurse list
                            2. Nurse Details
                            3. Add Nurse
                            4. Remove Nurse
                            ----------------------------------------
                            3
                            ----------------------------------------
                            User name : Jannat
                            Password : abc
                            Enter your age:21
                            Hospital Name: Medicare Hospital Pvt.
                            Working Experience : 2 years
                            Contact Number = 0187952148
```

```
  else if(nurse_option == 4)
  {

     char delete_nurse_name[30],temp_delete_user[30],folder[]="Nurse/";;
     printf("\t\t\t\tNurse name for remove: ");
     getchar();
     gets(delete_nurse_name);
     strcpy(temp_delete_user,delete_nurse_name);
     strcat(delete_nurse_name,".txt");
     strcat(folder,delete_nurse_name);
     int del = remove(folder);
     if (!del)
     {
        printf("\t\t\t\tNurse remove successfully\n");
        printf("\t\t\t\t");
        gets(back_button);
        system("cls");

        //------------for loading animation------------
        int j,i;
        //------------for loading animation------------
        gotoxy(46,10);
        printf("Loading...");
        gotoxy(46,12);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    Username:Rafiqul
                    Password:*****
                    ----------------------------------------
                    Login successfully !!!
                    ----------------------------------------
                    1. Users info.
                    2. Nurse.
                    3. Ambulance
                    4. Hospital
                    5. Profile
                    ----------------------------------------
                    2
                    ----------------------------------------
                            1. Nurse list
                            2. Nurse Details
                            3. Add Nurse
                            4. Remove Nurse
                            ----------------------------------------
                            4
                            ----------------------------------------
                            Nurse name for remove: tonima
                            Nurse remove successfully
```

```c
void admin_ambulance()
{
  int admin_ambulance;
  printf("\t\t\t\t1. Ambulance list \n");
  printf("\t\t\t\t2. Ambulance Details \n");
  printf("\t\t\t\t3. Add Ambulance \n");
  printf("\t\t\t\t4. Delete Ambulance\n");
  printf("\t\t\t\t----------\n\t\t\t\t");
  scanf("%d",&admin_ambulance);
  printf("\t\t\t\t----------\n");
  if(admin_ambulance == 1)
  {
     ambulance_list();
  }
  else if(admin_ambulance == 2)
  {
     char ambulance_details[30],folder[]="Ambulanc
     printf("\t\t\t\tDetails info. for: ");
     getchar();
     gets(ambulance_details);
     strcat(ambulance_details,".txt");
     strcat(folder,ambulance_details);
     admin_file = fopen(folder,"r");
     if(admin_file == NULL)
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    ----------------------------------------
                    1. Users info.
                    2. Nurse.
                    3. Ambulance
                    4. Hospital
                    5. Profile
                    ----------------------------------------
                    3
                    ----------------------------------------
                            1. Ambulance list
                            2. Ambulance Details
                            3. Add Ambulance
                            4. Delete Ambulance
                            ----------------------------------------
```

```c
//----------ambulance list function start----------
void ambulance_list()
{
  reg_info = fopen("ambulance_name_list.txt","r");
  char abc[100];
  printf("\t\t\t\tAmbulance Name\n");
  printf("\t\t\t\t----------\n");
  while(fgets(abc,sizeof(abc),reg_info) != NULL)
  {
     fputs("\t\t\t\t",stdout);
     fputs(abc,stdout);
  }
  fclose(reg_info);
  printf("\t\t\t\t");
  getchar();
  getchar();
  system("cls");

  //----------for loading animation----------
  int j,i;
  //----------for loading animation----------
  gotoxy(46,10);
  printf("Loading...");
  gotoxy(46,12);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    ----------------------------------------
                    1. Users info.
                    2. Nurse.
                    3. Ambulance
                    4. Hospital
                    5. Profile
                    ----------------------------------------
                    3
                    ----------------------------------------
                            1. Ambulance list
                            2. Ambulance Details
                            3. Add Ambulance
                            4. Delete Ambulance
                            ----------------------------------------
                            1
                            ----------------------------------------
                            Ambulance Name
                            ----------------------------------------
                            tonima Ambulance service
                            tonima
                            abc
```

```
    ambulance_list();
}
else if(admin_ambulance == 2)
{
    char ambulance_details[30],folder[]="Ambulance
    printf("\t\t\t\tDetails info. for: ");
    getchar();
    gets(ambulance_details);
    strcat(ambulance_details,".txt");
    strcat(folder,ambulance_details);
    admin_file = fopen(folder,"r");
    if(admin_file == NULL)
    {
        printf("\t\t\t\tAmbulance not found ! \n");
    }
    else
    {
        fscanf(admin_file,"%[^\n]%*c  %[^\n]%*c %[^\n
        printf("\t\t\t\tAmbulance Name =%s\n",ambula
        printf("\t\t\t\tLicence Number =%s\n",licence_n
        printf("\t\t\t\tDriver Name: %s\n",driver_name)
        printf("\t\t\t\tDriver age: %d\n",driver_age);
        printf("\t\t\t\tDriving Licence Number = %s\n",d
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    ----------------------------------------
                            1. Ambulance list
                            2. Ambulance Details
                            3. Add Ambulance
                            4. Delete Ambulance
                            ----------------------------------------
                            2
                            ----------------------------------------
                            Details info. for: tonima
                            Ambulance Name =tonima
                            Licence Number =5582
                            Driver Name: jakir islam
                            Driver age: 21
                            Driving Licence Number = 25522
```

```
//----------------------------------add ambulance function start ----------------------------------------------------------
void add_ambulace()
{
    char folder[]="Ambulance List/";
    printf("\t\t\t\tAmbulance Name = ");
    getchar();
    gets( ambulance_name);
    strcpy(temp,ambulance_name);
    strcat(ambulance_name,".txt");
    strcat(folder,ambulance_name);
    reg_info = fopen("ambulance_name_list.txt","a");
    admin_file = fopen(folder,"a");
    if(admin_file == NULL)
    {
        printf("\t\t\tFile does not exist !!\n");
    }
    else
    {

        printf("\t\t\t\tLicence Number = ");
        gets(licence_number);

        printf("\t\t\t\tDriver Name: ");
        gets(driver_name);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                            3. Ambulance
                            4. Hospital
                            5. Profile
                            ----------------------------------------
                            3
                            ----------------------------------------
                                    1. Ambulance list
                                    2. Ambulance Details
                                    3. Add Ambulance
                                    4. Delete Ambulance
                                    ----------------------------------------
                                    3
                                    ----------------------------------------
                                    Ambulace Name = Mayer doya Ambulance Service
                                    Licence Number = 158725sd8555
                                    Driver Name: Ovaidul Kader
                                    Driver age: 54
                                    Driving Licence Number = df54df582r2
                                    Contact Number = 01875248625
                                    ------------------------------------------------
                                    Ambulance Added Successfully !
```

```
    }
    else if(admin_ambulance == 4)
    {
        char delete_ambulance_name[30
        printf("\t\t\t\tAmbulance name f
        getchar();
        gets(delete_ambulance_name);
        strcat(delete_ambulance_name,"
        strcat(folder,delete_ambulance_
        int del = remove(folder);
        if (!del)
        {
            printf("\t\t\t\tAmbulance Delet
        }

        else
        {
            printf("\t\t\t\tWe can not find t
        }
        printf("\t\t\t\t");
        getchar();
        system("cls");

        //----------for loading animation----------
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
=                       =
=       Admin Panel     =
=                       =
=========================


----------------------------------------
1. Users info.
2. Nurse.
3. Ambulance
4. Hospital
5. Profile
----------------------------------------
3
----------------------------------------
        1. Ambulance list
        2. Ambulance Details
        3. Add Ambulance
        4. Delete Ambulance
        ----------------------------------------
        4
        ----------------------------------------
        Ambulance name for delete: Mayer doya Ambulance Service
        Ambulance Deleted successfully
```

```
void admin_hospital()
{
    int admin_hospital;
    printf("\t\t\t\t1. Hospital list \n");
    printf("\t\t\t\t2. Hospital Details\n");
    printf("\t\t\t\t3. Add Hospital \n");
    printf("\t\t\t\t4. Delete Hospital\n");
    printf("\t\t\t\t----------\n\t\t\t\t");
    scanf("%d",&admin_hospital);
    printf("\t\t\t\t----------\n");
    if(admin_hospital == 1)
    {
        hospital_list();
    }
    else if(admin_hospital == 2)
    {
        char hospital_details[30],folder[]="Hospital List/";
        printf("\t\t\t\tDetails info. for: ");
        getchar();
        gets(hospital_details);
        strcat(hospital_details,".txt");
        strcat(folder,hospital_details);
        admin_file = fopen(folder,"r");
        if(admin_file == NULL)
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
=========================
=                       =
=       Admin Panel     =
=                       =
=========================


----------------------------------------
1. Users info.
2. Nurse.
3. Ambulance
4. Hospital
5. Profile
----------------------------------------
4
----------------------------------------
        1. Hospital list
        2. Hospital Details
        3. Add Hospital
        4. Delete Hospital
        ----------------------------------------
```

```
void hospital_list()
{
  reg_info = fopen("hospital_name_list.txt","r");
  char abc[100];
  printf("\t\t\t\tHospital Name\n");
  printf("\t\t\t\t----------\n");
  while(fgets(abc,sizeof(abc),reg_info) != NULL)
  {
     fputs("\t\t\t\t",stdout);
     fputs(abc,stdout);
  }
  fclose(reg_info);
  printf("\t\t\t\t");
  getchar();
  getchar();
  system("cls");

  //----------for loading animation----------
  int j,i;
  //----------for loading animation----------
  gotoxy(46,10);
  printf("Loading...");
  gotoxy(46,12);
  for(i=1; i <= 20 ; i++)
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    ----------------------------------------
                    1. Users info.
                    2. Nurse.
                    3. Ambulance
                    4. Hospital
                    5. Profile
                    ----------------------------------------
                    4
                    ----------------------------------------
                            1. Hospital list
                            2. Hospital Details
                            3. Add Hospital
                            4. Delete Hospital
                            ----------------------------------------
                            1
                            ----------------------------------------
                            Hospital Name
                            ----------------------------------------
                            jakir
                            abc
```

```
    hospital_list();
  }
  else if(admin_hospital == 2)
  {
    char hospital_details[30],folder[]="Hospital Lis
    printf("\t\t\t\tDetails info. for: ");
    getchar();
    gets(hospital_details);
    strcat(hospital_details,".txt");
    strcat(folder,hospital_details);
    admin_file = fopen(folder,"r");
    if(admin_file == NULL)
    {
       printf("\t\t\t\tHospital not found ! \n");
    }
    else
    {
       fscanf(admin_file,"%[^\n]%*c  %[^\n]%*c %[
       printf("\t\t\t\tHospital Name = %s\n",hoospi
       printf("\t\t\t\tHospital Location = %s\n",hosp
       printf("\t\t\t\tNumber of Doctors = %s\n",nu
       printf("\t\t\t\tProvide Service List = %s\n",Pr
       printf("\t\t\t\tContact Number = %s\n",hospi
```

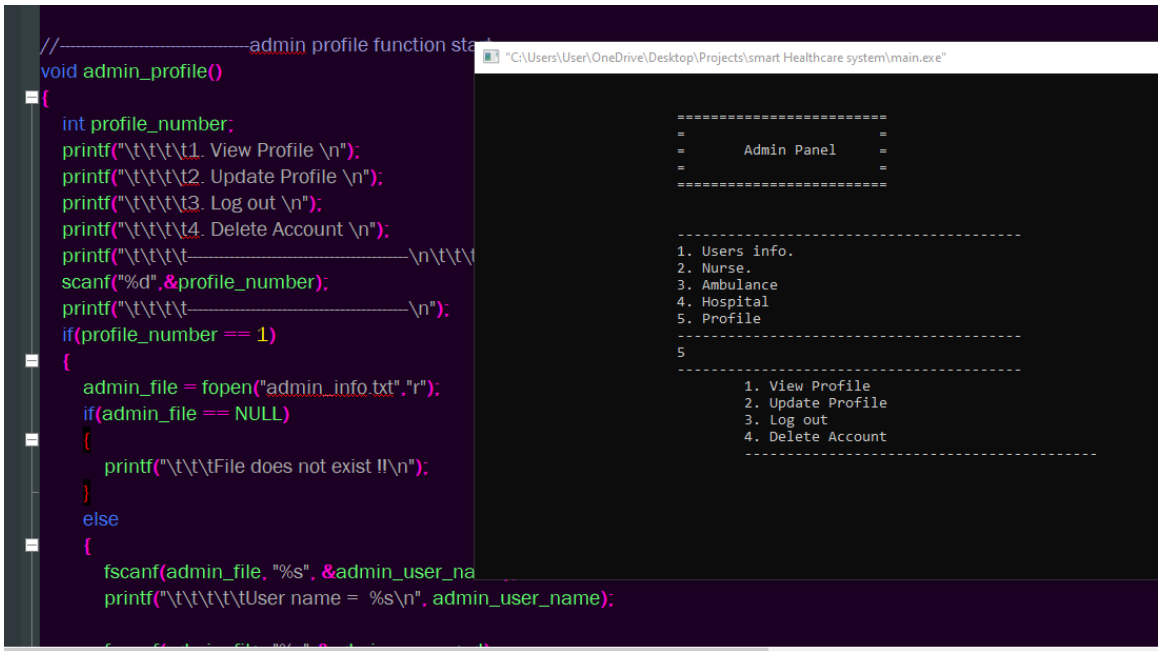
```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                    ----------------------------------------
                    1. Users info.
                    2. Nurse.
                    3. Ambulance
                    4. Hospital
                    5. Profile
                    ----------------------------------------
                    4
                    ----------------------------------------
                            1. Hospital list
                            2. Hospital Details
                            3. Add Hospital
                            4. Delete Hospital
                            ----------------------------------------
                            2
                            ----------------------------------------
                            Details info. for: jakir
                            Hospital Name = jakir
                            Hospital Location = sonaimuri
                            Number of Doctors = 15
                            Provide Service List = 1.sds 2.sdsd 3.dsds
                            Contact Number = 189255
```

```
//----------------------------add ambulance function start ----------------------------------------------------
void add_ambulace()
{
  char folder[]="Ambulance List/";
  printf("\t\t\t\tAmbulance Name = ");
  getchar();
  gets( ambulance_name);
  strcpy(temp,ambulance_name);
  strcat(ambulance_name,".txt");
  strcat(folder,ambulance_name);
  reg_info = fopen("ambulance_name_list.txt",
  admin_file = fopen(folder,"a");
  if(admin_file == NULL)
  {
     printf("\t\t\tFile does not exist !!\n");
  }
  else
  {

     printf("\t\t\t\tLicence Number = ");
     gets(licence_number);

     printf("\t\t\t\tDriver Name: ");
     gets(driver_name);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                3. Ambulance
                4. Hospital
                5. Profile
                ----------------------------------------
                4
                ----------------------------------------
                        1. Hospital list
                        2. Hospital Details
                        3. Add Hospital
                        4. Delete Hospital
                        ----------------------------------------
                        3
                        ----------------------------------------
                        Hospital Name = BRB Hospital
                        Hospital Location = Katabon
                        Number of Doctors = 45
                        Provide Service List = 1. Blood test 2. Urin Test
                        Contact Number = 99985652
```

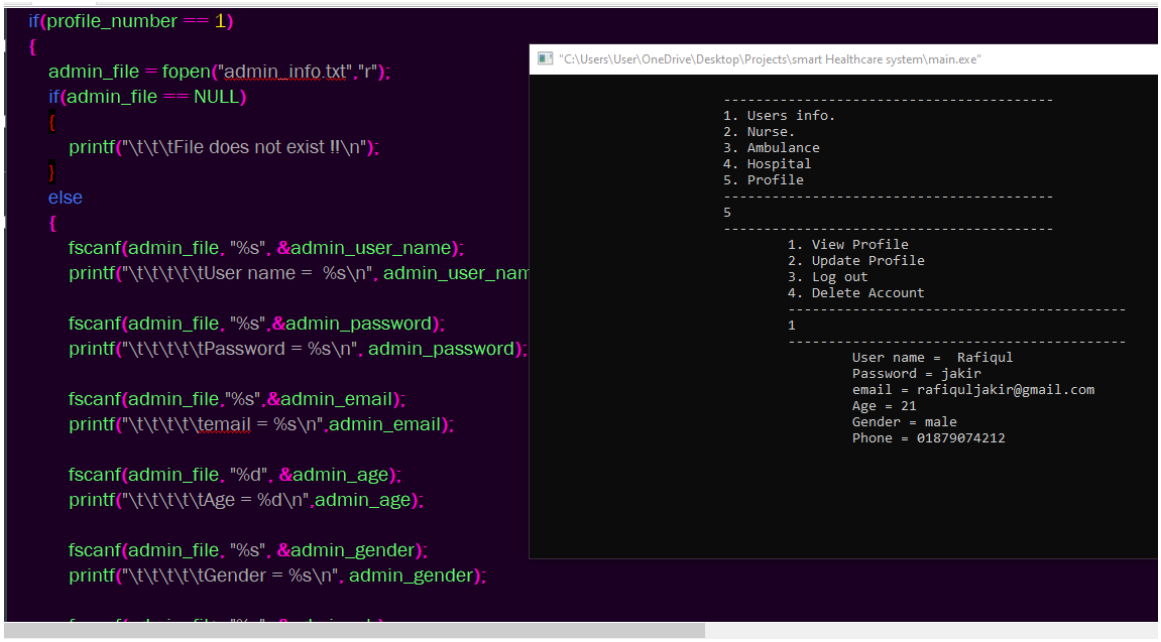
```
  }
  else if(admin_hospital == 4)
  {
     char delete_hospital_name[30],fol
     strcpy(user_name,""); // clearing st
     strcpy(password,"");// clearing strin

     printf("\t\t\t\tHospital name for del
     getchar();
     gets(delete_hospital_name);
     strcat(delete_hospital_name,".txt");
     strcat(folder,delete_hospital_name)
     int del = remove(folder);
     if (!del)
     {
        printf("\t\t\t\tHospital Deleted su
        getchar();
        system("cls");

        //------------for loading animation--
        int j,i;
        //------------for loading animation--
        gotoxy(46,10);
        printf("Loading...");
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"


                ========================
                =                      =
                =       Admin Panel    =
                =                      =
                ========================


                ----------------------------------------
                1. Users info.
                2. Nurse.
                3. Ambulance
                4. Hospital
                5. Profile
                ----------------------------------------
                4
                ----------------------------------------
                        1. Hospital list
                        2. Hospital Details
                        3. Add Hospital
                        4. Delete Hospital
                        ----------------------------------------
                        4
                        ----------------------------------------
                        Hospital name for delete: BRB Hospital
                        Hospital Deleted successfully
```



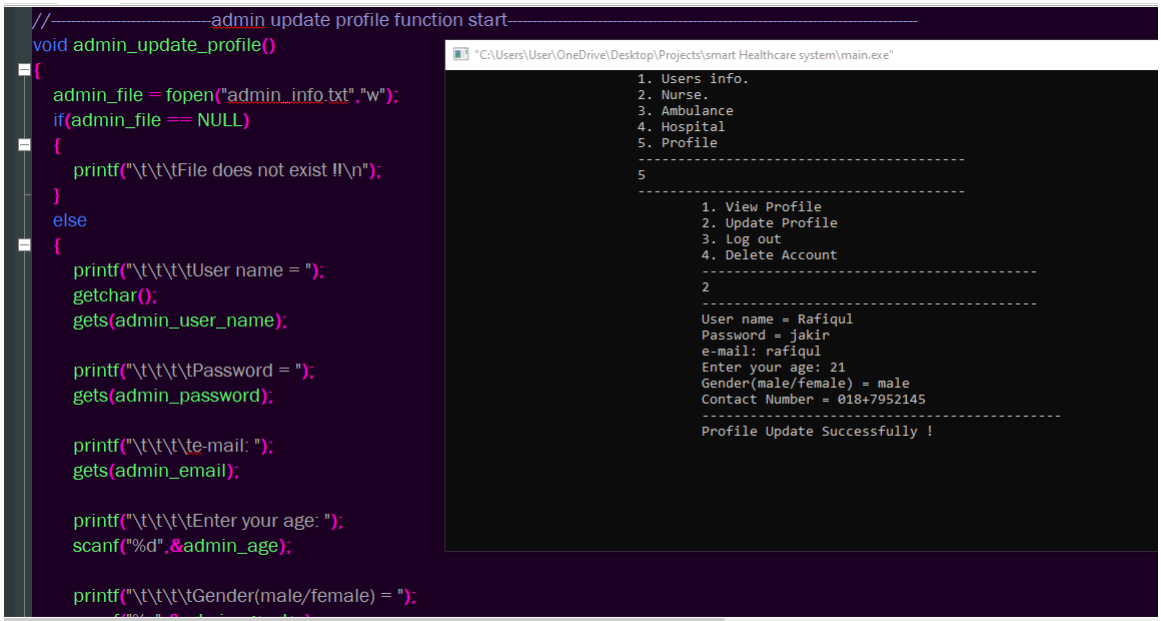
```
//----------------------------admin profile function start
void admin_profile()
{
   int profile_number;
   printf("\t\t\t\t1. View Profile \n");
   printf("\t\t\t\t2. Update Profile \n");
   printf("\t\t\t\t3. Log out \n");
   printf("\t\t\t\t4. Delete Account \n");
   printf("\t\t\t\t----------------------------------\n\t\t\t\t");
   scanf("%d",&profile_number);
   printf("\t\t\t\t----------------------------------\n");
   if(profile_number == 1)
   {
      admin_file = fopen("admin_info.txt","r");
      if(admin_file == NULL)
      {
         printf("\t\t\tFile does not exist !!\n");
      }
      else
      {
         fscanf(admin_file, "%s", &admin_user_na
         printf("\t\t\t\t\tUser name =  %s\n", admin_user_name);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                        ========================
                        =                      =
                        =       Admin Panel    =
                        =                      =
                        ========================


                        ----------------------------------------
                        1. Users info.
                        2. Nurse.
                        3. Ambulance
                        4. Hospital
                        5. Profile
                        ----------------------------------------
                        5
                        ----------------------------------------
                                1. View Profile
                                2. Update Profile
                                3. Log out
                                4. Delete Account
                                ----------------------------------------
```



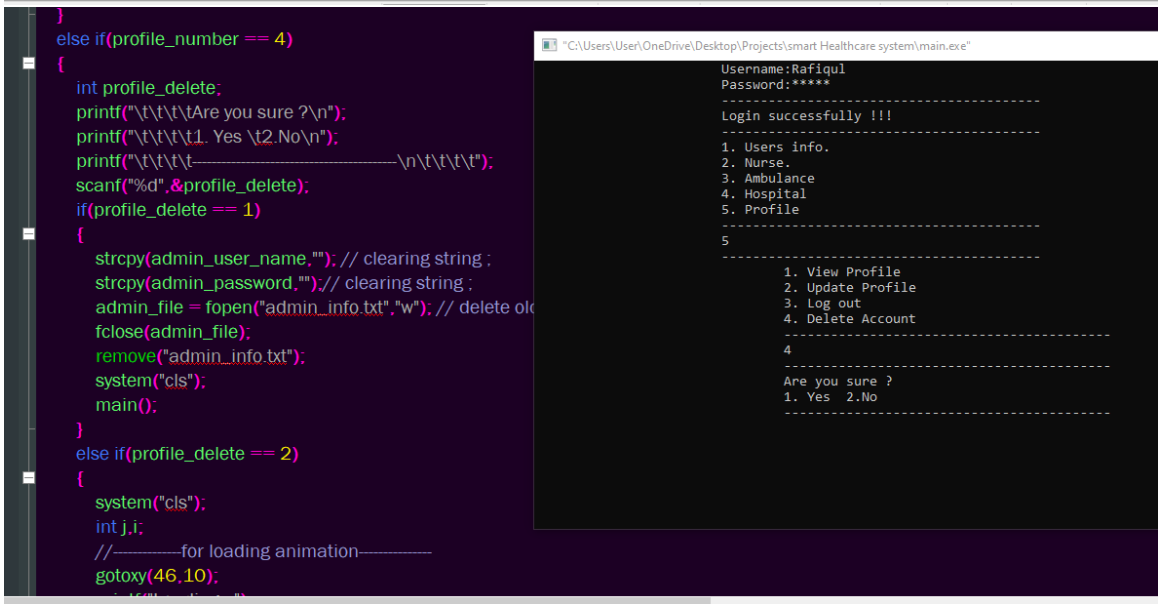
```
if(profile_number == 1)
{
   admin_file = fopen("admin_info.txt","r");
   if(admin_file == NULL)
   {
      printf("\t\t\tFile does not exist !!\n");
   }
   else
   {
      fscanf(admin_file, "%s", &admin_user_name);
      printf("\t\t\t\t\tUser name =  %s\n", admin_user_nam

      fscanf(admin_file, "%s",&admin_password);
      printf("\t\t\t\t\tPassword = %s\n", admin_password);

      fscanf(admin_file,"%s",&admin_email);
      printf("\t\t\t\t\temail = %s\n",admin_email);

      fscanf(admin_file, "%d", &admin_age);
      printf("\t\t\t\t\tAge = %d\n",admin_age);

      fscanf(admin_file, "%s", &admin_gender);
      printf("\t\t\t\t\tGender = %s\n", admin_gender);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"

                        ----------------------------------------
                        1. Users info.
                        2. Nurse.
                        3. Ambulance
                        4. Hospital
                        5. Profile
                        ----------------------------------------
                        5
                        ----------------------------------------
                                1. View Profile
                                2. Update Profile
                                3. Log out
                                4. Delete Account
                                ----------------------------------------
                                1
                                ----------------------------------------
                                        User name =  Rafiqul
                                        Password = jakir
                                        email = rafiquljakir@gmail.com
                                        Age = 21
                                        Gender = male
                                        Phone = 01879074212
```



```
//----------------------admin update profile function start-----------------------------------------------------
void admin_update_profile()
{
   admin_file = fopen("admin_info.txt","w");
   if(admin_file == NULL)
   {
      printf("\t\t\tFile does not exist !!\n");
   }
   else
   {
      printf("\t\t\t\tUser name = ");
      getchar();
      gets(admin_user_name);

      printf("\t\t\t\tPassword = ");
      gets(admin_password);

      printf("\t\t\t\te-mail: ");
      gets(admin_email);

      printf("\t\t\t\tEnter your age: ");
      scanf("%d",&admin_age);

      printf("\t\t\t\tGender(male/female) = ");
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                        1. Users info.
                        2. Nurse.
                        3. Ambulance
                        4. Hospital
                        5. Profile
                        ----------------------------------------
                        5
                        ----------------------------------------
                                1. View Profile
                                2. Update Profile
                                3. Log out
                                4. Delete Account
                                ----------------------------------------
                                2
                                ----------------------------------------
                                User name = Rafiqul
                                Password = jakir
                                e-mail: rafiqul
                                Enter your age: 21
                                Gender(male/female) = male
                                Contact Number = 018+7952145
                                ----------------------------------------
                                Profile Update Successfully !
```



```
   }
   else if(profile_number == 4)
   {
      int profile_delete;
      printf("\t\t\t\tAre you sure ?\n");
      printf("\t\t\t\t\t1. Yes \t2.No\n");
      printf("\t\t\t\t\t----------------------------------\n\t\t\t\t");
      scanf("%d",&profile_delete);
      if(profile_delete == 1)
      {
         strcpy(admin_user_name,""); // clearing string ;
         strcpy(admin_password,"");// clearing string ;
         admin_file = fopen("admin_info.txt","w"); // delete old
         fclose(admin_file);
         remove("admin_info.txt");
         system("cls");
         main();
      }
      else if(profile_delete == 2)
      {
         system("cls");
         int j,i;
         //------------for loading animation-------------
         gotoxy(46,10);
```

```
"C:\Users\User\OneDrive\Desktop\Projects\smart Healthcare system\main.exe"
                        Username:Rafiqul
                        Password:*****
                        ----------------------------------------
                        Login successfully !!!
                        ----------------------------------------
                        1. Users info.
                        2. Nurse.
                        3. Ambulance
                        4. Hospital
                        5. Profile
                        ----------------------------------------
                        5
                        ----------------------------------------
                                1. View Profile
                                2. Update Profile
                                3. Log out
                                4. Delete Account
                                ----------------------------------------
                                4
                                ----------------------------------------
                                Are you sure ?
                                1. Yes  2.No
                                ----------------------------------------
```

Connection Test:

Chapter 6

Conclusion and Future Work

6.1 Conclusions

The world is busy, in recent time people are too busy that they can't take care of their health. Now, they can take care of their health at any time without wasting precious time by using our creation. They can take good care of their health by setting at home. Here are some facilities that a user can get-

1. Full body check-up anytime.
2. Always health monitoring.
3. Emergency ambulance service.
4. Anytime health advice and treatment.
5. Can save a huge amount of time and money.

For fulfilling users need we have used various kind of functions, algorithm, method, system, etc. such as-

1. Powerful admin panel.
2. User approval system.
3. Pattern matching algorithm for searching user.
4. Multiple user registration systems.
5. Automatic ambulance calling system.
6. Added web link.

6.2 Future Scope of Our Project

Our goal is to reduce complexity from our health care system and ensuring good health for everyone. We tried to do our best so that people can enjoy their healthy life without any hassle. We tried to create a system that helps people to do their best on the other side they want to do, without worrying about their health. We want to take it more forward but our technology does not reach that level yet and we are facing some difficulties. we want to overcome those difficulties. So in the future, we will add more system that will move it more forward. Such as-

- **Automatic body check-up:** The device will get blood sugar, blood pressure, heart rate, body temperature on its own after every few moments. So that people can stay updated all the time and can be aware of their health condition.
- **Video call adding:** We will add a video calling system to it. So that people can communicate with the doctor if they can't go to the hospital for their personal problem.
- **GPS location tracking:** At this stage, the user has to input their location. After adding GPS location tracking they don't have to do it, in an emergency device will share the location on its own.
- **API connecting for payment system:** We will connect API in the payment method so that we don't have to approve user manually.
- **Optimizing for faster loading:**We will optimize it so that people can operate the device faster.

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