Acknowledgement

The satisfaction that accompanies the successful completion of this project would be in complete without the people of the people who made it possible, without whose constant guidance and encouragement would have made efforts go in vain. We consider our self- privileged to express gratitude and respect toward all these who guided us through the completion of this project.

We convey thanks to our project guide **Prof.H.P.JAGAD** for providing encouragement, constant support and guidance which was of a great help to complete this project successfully.

We would like to gratitude our Head Of Department **Prof. G.M.PANDEY** and we would also like to gratitude to the principal **Prof. B.R.PATEL** for their guidance and for support in completing our project.

Abstract

Our project title is “Covid E-Care(CEC)”. It is a web application that provides informationto Covid-19 patients and their family.

We provide many information related to Covid-19 needed resources such as Oxygen Cylinder, Hospital Beds, Testing Booth, Home Care and total cases across state, peoplecan take information about vaccination.

For different resources people have to search many website, its time consuming so we provide all the information in one website. So they can find any resources frequently and save time.

People cannot take care from Covid-19 so we give SOP guidance provided by government that how people can be safe from Covid-19 virus and what precautions should be taken.

If any people of city or anyone who have to purchase resources so we provide address and mobile number of hospital or medical store so they can contact hospital and medical store.

Information given by us is 100% certified or related the medical association or government.

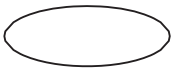
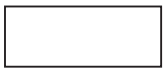
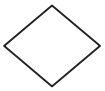
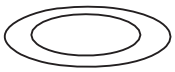
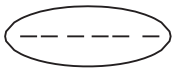
Our site is user friendly so any person can use easily, all information is complete.

List of Tables

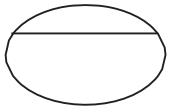
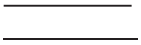
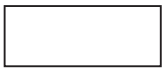
List of figures

List of Symbols

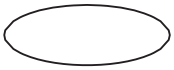
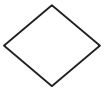
❖ ERD (Entity Relationship diagram):

No.	Symbol	Name	Description
1		Attribute	This symbol is represents characteristics or attributes of entity
2		Entity	This symbol is represents the Object or concept that represents important data.
3		Relationship	This symbol is represents the relationship among entities
4		Link	This symbol provides link Between attributes and entities.
5		Multivalued Attribute	This symbol is represents the Multivalve attributes.
6		Key Attribute	This symbol is represents the Primary key attribute.
7		Partial Key	This symbol is represents the Foreign key of the attribute.

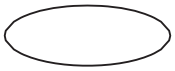
❖ DFD(Data Flow Diagram):

No	Symbol	Name	Description
1		Data flow	This symbol represents the direction of flow of data.
2		Process	This symbol represents function Or process of the data.
3		Data store	This symbol represents the Database which stores data.
4		External Entity	This symbol represents the living Entity of the system.

❖ Activity Diagram:

No	Symbol	Name	Description
1		Start node	It symbol represent the STAR of the activity diagram.
2		End node	It symbol represent the END of the activity diagram.
3		Activity	It symbol represent the activity node.
4		Control flow	Its symbols define the control flow.
5		Decision node	It defines the decision of condition in the activity diagram.

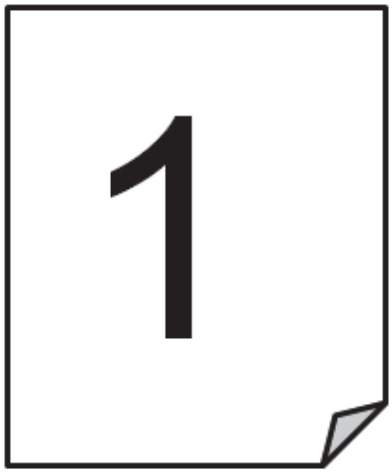
❖ Use Case Diagram:

No	Symbol	Name	Description
1		Use-Case	It describes sequence of interactions between actors and the system necessary to deliver the service that satisfies goal.
2		Actor	An actor may be person, machine, or and information system that external to system. The user The different user of the system is represented by using the stick person icon. Each stick person icon is normally referred to as an actor.
3		Relationship	The line connecting actor and the use case is called the communication relationship. It indicates that the actor makes use of the functionality provide by the use case.

List Of Abbreviations

- **ER:** Entity Relationship Diagram
- **DFD:** Data Flow Diagram
- **GUI:** Graphical User Interface
- **RAM:** Random Access Memory
- **OS:** Operating System
- **SQL:** Structure Query Language
- **DB:** Data-Base

Index



Chapter # 1: Introduction

1.1Project Introduction

1.2Purpose

1.3Scope

1.1 Project Introduction:

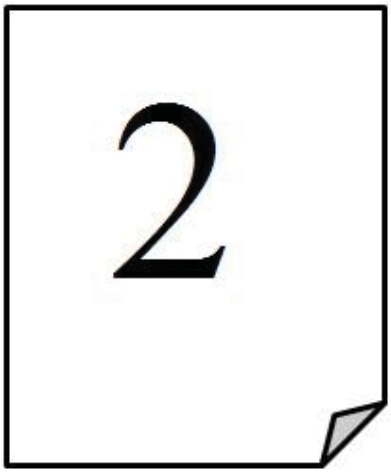
- Covid E-Care(CEC) is a website which is helpful for the patients who are suffering from covid.
- Covid E-Care (CEC) is a website that helps you anytime and anywhere 24 x 7 for patients and their relatives for find any Covid medical services.
- In our project we decide to take major things that can be used by patients of Covid-19 and help them.
- As we all know that the today's young generation of villages are migrating towards the cities for work, study or business then suppose they got infected of Covid 19 or want to be vaccinated then he/she can visit our website according to their needs.
- In our project we can provide services such as Oxygen, Hospital beds, Medicines/injection, Ventilator, Home Care, Testing booth and many more.
- If a man wants to go from one city to another city and he doesn't know from where does he gets the covid resources such medicines, vaccine etc., so he gets in trouble.
- User can see the bed capacity of selected hospital or other hospital, as per given information they can call hospital and get help.
- Here, in our Web site a person just does not get the availibilty stock about the Covid resources but he also get the charges(price), address and contact details of the resources.
- We also give service for that people who not take vaccination. They can find nearby vaccination center and take vaccination dose.
- You can also check that how we can we be safe from Covid-19 virus and what we have to do for that.

1.2 Purpose:

- Our main purpose is that about the current crisis that people are facing today, they get the required covid resources easily and save their life, time and money.
- If the family from outside needs any Covid medical treatment, we can also solve the problem with our modern Web Application. As well as, our modern method will be very useful in handling any covid suffering patient in emergency situation.
- Our web application helps to book the slot for vaccine for you and your family easily.
- In our web application a person can also check the active or total cases of covid in that city.
- Our website enables user friendly for Hospital-users relationship.User can easily check about their nearest covid resources and find out solution.
- This service is for Covid-19 patients and their families for that they cannot have to go every medical shop and every medical hospital. They can search specific hospital and their services. So that, they can go there and take medicine or any another resources.
- Lots of people who cannot take care from Covid-19 virus they can also check our web application for what they have to do.
- So that people can get all types of Covid information exclusively and they do not have problem in his selected city.

1.3 Scope:

- This web site does not provide module for booking any Covid resources, Hospital beds and any other needs.
- In our Web site it will only give information about the Covid resources and only information for beds for Covid patients and also vaccine for Covid not for any another diseases.
- Here, the active cases of Covid-19 does not give at accurate time, it will changes it database at 1 Day (24-Hour) interval.
- This website is only for selected states/cities.
- Only admin users can modify this site, user cannot modify this site.



Chapter # 2: System Requirement Analysis

2.1 Current System Study

2.2 Weakness of Current System

2.3 Problem Identification /Definition

2.4 Requirement of New System

2.5 Feasibility Study

- **2.5.1 Technical Study**
- **2.5.2 Economical Study**
- **2.5.3 Operational**
- **2.5.4 Schedule (Time Line Chart)**

2.6 Development model (Software Process Model)

2.7 Requirement Validation

2.8 Tools and Technology/Minimum Hardware and Software Requirements

2.9 System Architecture

2.10 Data Flow Diagram

2.11 Use-case Diagram

2.12 Activity Diagram

2.1 Current System Study:

- **https://sirthospital.com/**

- This web application is of Sir T Hospital of Bhavnagar. This is the Government Hospital.
- In this web application many departments like Anesthesiology, Biochemistry, General Surgery, ENT Casualty, Dental Ophthalmic, Orthopedic, Pathology, Radiology Physiotherapy, Psychiatric, Covid-19, Pulmonary, Skin&ud all department Doctor Information, OPD Time & Contact Number etc.
- In this web application to provide many links to help the user like Medical college, Gujarat health Service, Mamta Abhiyan, Ability Gujarat, Ma Yojana, Ma Vatsalya Yojna etc.
- In this web application user provide many facilities like OPD, 24*7 Emergency, Ambulance, Special rooms, Health Permit.
- This web application is providing many information to available at hospital like ATM, Police chowki, Amrut Dindayal, Amul Parlour this all are available the near of hospital.
- Many information of hospital Mission, Vision, Award etc.

- **https://www.cowin.gov.in/**

- This web application is for Covid Vaccination of India. This is a Government Web site.
- In this web application it gives facilities to register and book a slot for Covid vaccine on the preferable day of person.
- It gives services like vaccination services, platforms, resources, support and register/sign-in.
- It also gives information of total number of registrations, vaccine delivered and fully vaccinated peoples.
- In Vaccination service it includes register member, Search vaccination centers, Book vaccination slots, Manage appointments, Download Certificate.
- In Platform service it includes CoWin International, Vaccinator, Department Login, Verify Certificate, and Vaccination Statistics.

- In Resources service it includes How to get vaccinated, Dos and Don'ts, Overview, API Guidelines, Grievance Guidelines.
- In Support service it includes Frequently Asked Questions, Certificate Corrections, and Contact Us.
- While Register/Sign-in the user must give his mobile number for Registration ID and then an OTP(One Time Password) is sent to the given number by user, so that government can verify the number.
- After verification the person need to give name of persons and in a single mobile number 4 peoples can book a slot of vaccine for him or for his family.

➢ **https://www.covidindiaresources.com/**

- CovidResources.in is a Web application which is powered by an army of selfless volunteers.
- It is a Web application which helps us find verified resources related to all Covid needs.
- It has different resources such oxygen, medicines/injections, blood, Testing, Food Tiffin and other.
- It works in different States and districtsof India.
- Its popular cities are Ahmedabad, Delhi, Kanpur, Mumbai, Kanpur, Pune, Indore, Jaipur, Bangalore and Kolkata.
- This Web application has a very nice facility to donate Indian AirForce for Covid patients Care.

➢ **https://www.covid19india.org/**

- This Web site shows us total number cases, active cases and total number of discharged patients of Covid.
- It also give graphical representation of Confirmed cases, Active cases, Recovered and Tested cases of Covid patients.

- **https://www.unicef.org/india/coronavirus/covid-19**

- This website gives us information of how does Covid affect and what are the precautions for being safe from Covid-19 Virus.
- In this website how can you avoid risk of infection of corona virus.

  There are four steps given:

  1. Wash your hands frequently using soap and water or an alcohol-based hand rub.

  2. Cover mouth and nose with flexed elbow or tissue when coughing or sneezing and the dispose used tissue immediately.

  3. Avoid close contact with anyone who has cold or flu-like symptoms.

  4. Seek medical care early if you or your child has a fever, cough or difficulty in breathing.
- In This website you can see how corona virus spread? And also see does covid-19 affect the children?

2.2 Weakness of Current System:

- **https://sirthospital.com/**
- Server speed is down.
- Very difficult to find empty beds for Covid patients.
- More time consuming to search for empty beds.
- Only give information of its hospital.
- location or map of hospital is not available to the user.

- **https://www.cowin.gov.in/**
- Cowin site only provide information that is related to Vaccination.
- It consumes time to download e-cetificate.

- **https://www.covidindiaresources.com/**
- Loading process is too much.
- Sometimes, site takes too much time to show the results.
- It does not provide any results for small districts and cities.
- It shows accurate results only for big cities such as Delhi, Ahmedabad, Mumbai, etc.

- **https://www.covid19india.org/**
- It does not accurate number of cases.
- When you have to check current cases of Covid-19 they show old cases means before 1 day they don't update latest early.

- **https://www.unicef.org/india/coronavirus/covid-19**
- Less information has been provided for the people.
- Sometime internet issue page can load time is much more.
- In this website you can see only information of how to avoid corona virus.
- More time consuming for people to any search and get other information.

2.3 Problem Identification / Definition:

- As given above sites, we have to go different websites for different resources needed for patients and information about resources.
- If we have to get urgent resources then we have to search every websites, this takes so much time. We provide all the information in one site.
- Many Sites gives services after provide some information such as email id, mobile number. If any information leak through that website then our all data can fetch by the unknown user.
- If we create a website that provide all the services in one site, so user have not given his/her sensitive information in every sites.
- In our website we give all the resources as well as vaccination booking site and many more, so it is easy and fast for user to use site.
- We give some guidance to people in our web application for be aware from Covid-19. Obey the SOP given by the government.

2.4 Requirement of New System:

1) Functional Requirements:

- **Provide all Requirements:**
  - We Provides all the requirement to the patient of Covid-19 in a single web application, so they can purchase needed resources in small time.

- **Given all information is Real:**
  - We provide all the information to the user given by the state government or government of India.
  - We don't do any wrong thing with user's health.

- **All resources are certified:**
  - We provide that hospital, medical and other information who certify by the government.

2) Non-Functional Requirements:

- **Portability:**
  - The website is portable because online website running across the Internet.

- **Security:**
  - This website provide user authentication so that only the authorized admin are allowed to modify the data in website.

- **Maintainability:**
  - These website is capable to secure the data.

- **Reliability:**
  - Our website performs consistently according to its specifications. We provide all Covid information in one Web site.

- **Scalability:**
  - This system can further modified in future as per systems errors or modified frequently as per Covid cases data.

- **Performance:**
  - Our website provide user friendly GUI so user can use easily. We try our best in this website that we cover all the weakness of the current system.

- **Flexibility:**
  - If user wants some more services in our website then we can also add or edit more features.

2.5 Feasibility Study.

- Feasibility study is a study to evaluate feasibility of proposed project or system. Feasibility study is one of stage among important four stages of Software Project Management Process.
- As name suggests feasibility study is the feasibility analysis or it is a measure of the software product in term of how much beneficial product development will be for the organization in a practical point of view.
- Feasibility study is carried out based on many purposes to analyze whether software product will be right in terms of development, contribution, of project to the organization.
- The feasibility study mainly concentrates on bellow four mentioned areas.
  1. Economical
  2. Technical
  3. Operational
  4. Time line Chart.

2.5.1 Economical feasibility.

- To make this web application, we use free software so we don't have to buy any types of software. So there is no any cost for making this site.
- For user, they can access our site using mobile or desktop by the internet. So they don't have to purchase any software in his/her device.
- We provide only information about Covid-19 related resources. User cannot buy anything from our website.
- So, our website is economically feasible.

2.5.2 Technical feasibility.

- Technical feasibility centers on the existing computer system(hardware, software, etc.) And to what extent it can support the proposed addition. For example, if the current Computer is operating at 80% capacity-an arbitrary ceiling-then running another Application could overload the system or require additional hardware.
- The Proposed system is technically feasible on the basis of following reasons :

- Technical feasibility means that proposed solution can be implemented with the available Hardware, software and technical resources.
- To deploy the application, the only technical aspects needed are mentioned below:
    - Operating Environment Windows 7or above
    - Visual Studio 2010
    - ASP.NET
    - SQL Server
- For User:
    - Internet Connection
    - Any one device Mobile,laptop, Desktop etc.

2.5.3 Operational feasibility:

- Operation feasibility refers to the nature of solving problem efficiently and it is easy for the end user to operate it.
- Operation feasibility analysis the behaviour of the proposed system and whether the proposed system is easier than the existing system for the users of the system.
- In our system, for all modules the perfect GUI is provides. So, user can easily access those modules.
- We provide menu and search option so user can easily find his need covid resources.
- If the user uses the application first time, then it shows the suggestions to user so he/she easily access all the functionalities. So, we can say that our project is operational feasible.

2.5.4 Schedule (Time Line Chart):

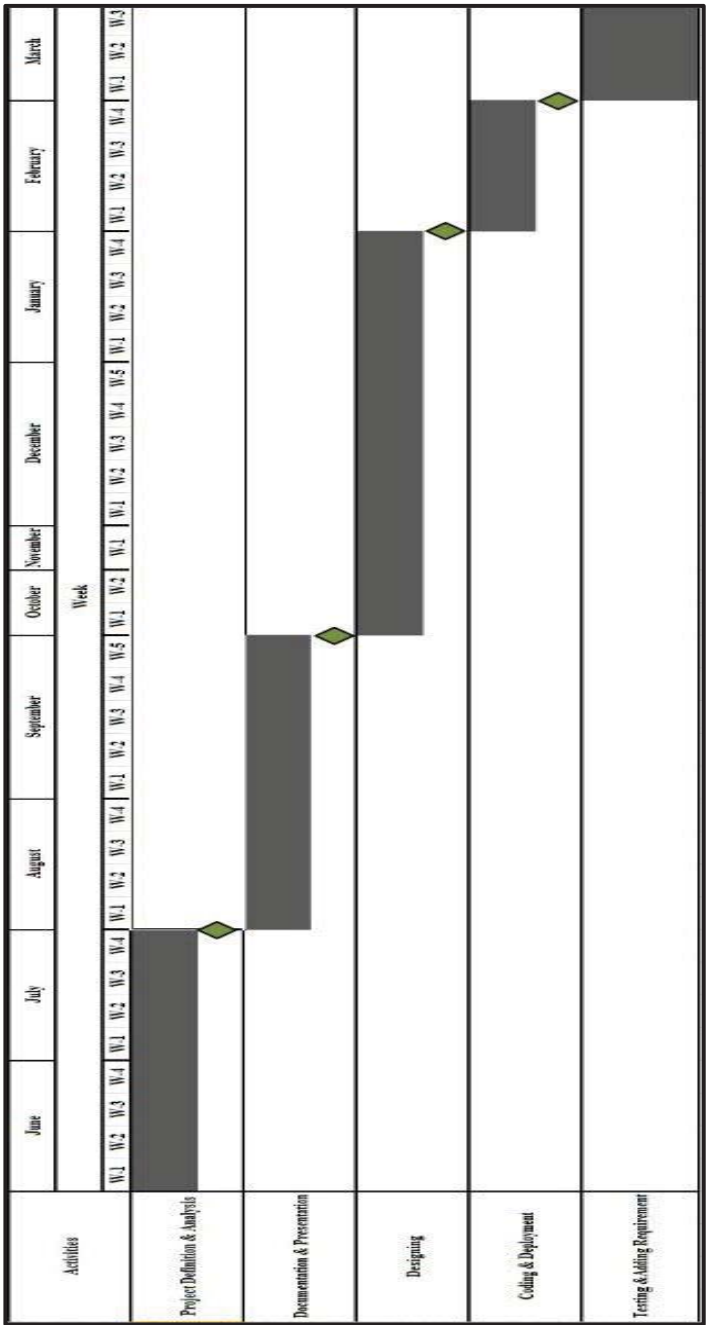


Figure 2.5.4.1

2.6 Development model (Software Process Model):

❖ Incremental Model:

- The incremental model combines elements of the linear sequential model with the iterative philosophy of prototyping.
- Incremental Model is a process of software development where requirements divided into multiple standalone modules of the software development cycle.
- Each module goes through the requirements, design, implementation and testing phases.
- Every subsequent release of the module adds function to the previous release. The process continues until the complete system achieved.
- This project is made for the resources or information about Covid-19 virus that we are trying to save the people's time and based on some error we can change functionality.
- Using this model, we can deliver our product in increments so there is less risk.
- In this model, you don't have to make whole project at the time. You can create core product so if any error found then we can solve it.

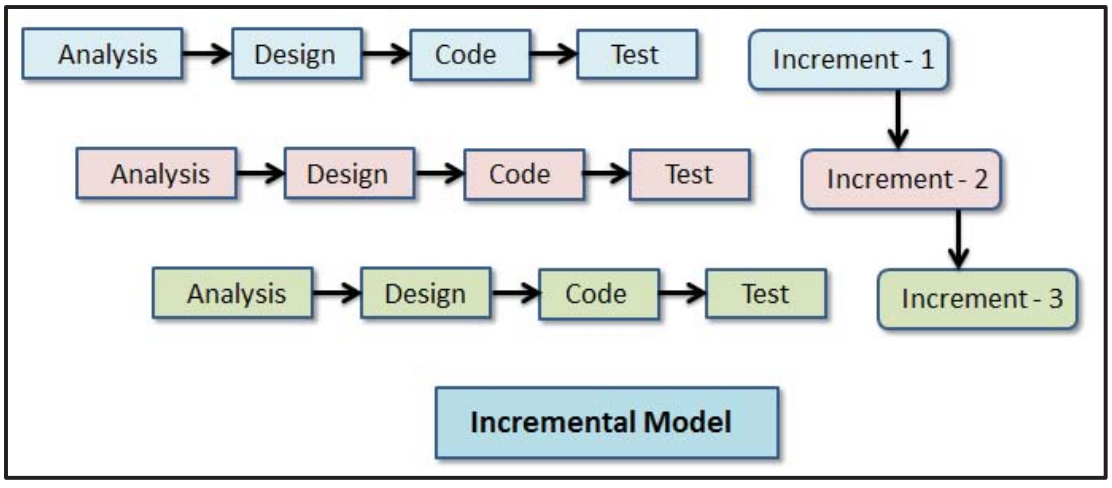


Figure 2.6.1Development Model

- You can see that at each stage of incremental development we are going through requirement, design code ,implementation, Testing and by doing this we are making sure that the various incremental stages are compatible and cumulatively helping in achieving the required objectives from the software.
- With this approach first model may be available within few weeks or months, whereas using waterfall or prototyping model customer should have to wait until receives final product.

- Each component is delivered to the client when it is complete. This allows partial utilization of the product and avoids a long development time. It also avoids a large initial capital outlay and subsequent long waiting period.

❖ **Why We Have Select this model?**

- We use this model because our all the requirements of the complete system are clearly defined and understood.
- After completion of website work if there is any error found then we easily solve the problem.
- There is no so much risk using this process model.
- We easily make web application.
- We can easily find the error.

2.7 Requirement Validation:

- An Aspect of requirement validation in which requirements and processes of new software are analyzed to verify the product meets certain specification and functions correctly.
- In the requirement validation process, perform different types of test of check.
- The requirement mentioned in these checks includes:

➢ **Completeness Checks:**

- User can easily use our website so we provide all the information about Covid-19 resources or other information is completely check by our group.

➢ **Consistency Checks:**

- We refer many website related Covid-19 information so we take care that all the information is consistency or not conflict.

➢ **Validity Checks:**

- We ensure that the functionality of system is method with the user's requirements and all the functions are valid.

➢ **Realism Checks:**

- In our report, we use Visual Studio 2010 software. It's free of cost so we don't buy any software and we complete this in our budget and time schedule decided by our group.

➢ **Ambiguity Checks:**

- We check that the all information given by us there is no any ambiguity in our web application.

➢ **Verifiability Checks:**

- In this, we check all the resources or requirement that can use user for find needed resources.

2.8 Tools and Technology / Minimum Hardware and Software Requirements:

❖ **Hardware Specification:**

For Development Purpose Hardware Specification:

➢ **System Requirements: -**

- Operating System: - Window 7 or above, mac OS, etc…
- RAM: -2GB Minimum
- Dick Space: -512MB(Minimum)&2GB(Recommended)
- Processor: -1.2GHZ Octa core
- Hard disk: -1GB
- Front End: - Visual Studio, VB.NET, .NET Framework.
- Back End: -ASP.NET, SQL Server, IIS Server.

❖ **Software Specification:**

For Deployment Purpose software specification

- Operating System: - Window 7 or above
- Development Tool: - Microsoft Visual Studio 2010
- Database: - SQL Server-Database
- Search Engine: -Internet Explorer, Chrome, Firefox 3.0+, Microsoft Edge etc…
- External Interface Requirements: Entirely web based, our site will require only a web browser, preferably Internet Explorer or Chrome, and a connection to the Internet. With a streamlined design approach, any sort of Internet Connection would be sufficient to viewing the site.

➢ The various External Interface Requirements are:

- **User Interface:** The User-Interface is the web based GUI provided, which gives various information about covid to the user.
- **Communication Interface:** Presently the HTTP protocol suffices the various functionalities for the system. There is nothing else required for the users of the system to communicate. All the data thought in different formats is sent through HTTP.

2.9 System Architecture:

- System architecture is the conceptual model that defines the structure, behaviour, and more view of a system.
- An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviours of the system.

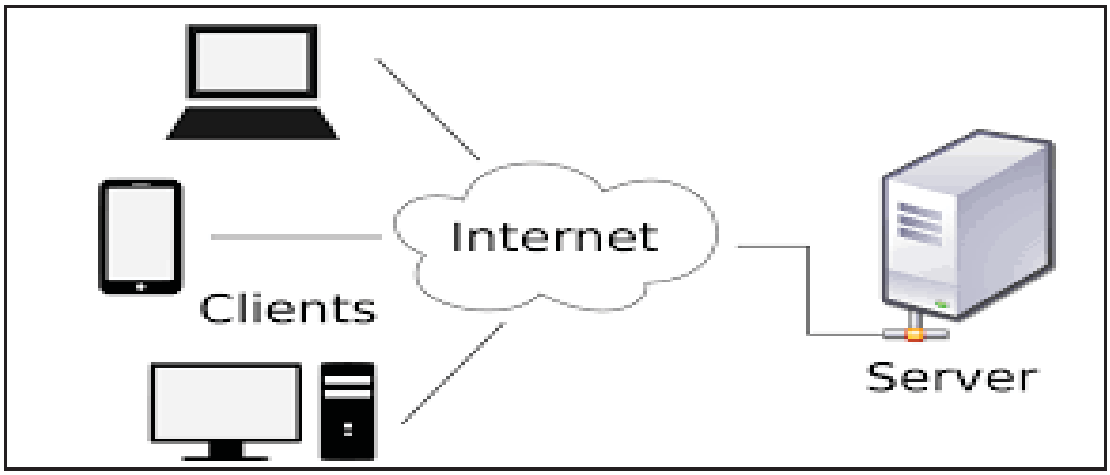


Figure 2.9.1 Client Server Architecture

- Client-server architecture consists of two types of components: clients and servers. A server component perpetually listens for request from client components.
- When a request is received, the server processes the request and then sends a response back to the client.
- We prefer to client server architecture because clients send the request and centralized server provides service as per their requirements and other reasons are listed below:
    - If any changes occur then simply update the server.
    - Since all the files are stored at the same place management of files becomes easy making it easier it finds files.
    - Making a backup of all the data is easy as the data is stored on server.
    - From various platforms in the network, server can be accessed remotely.

2.10 Data Flow Diagram:

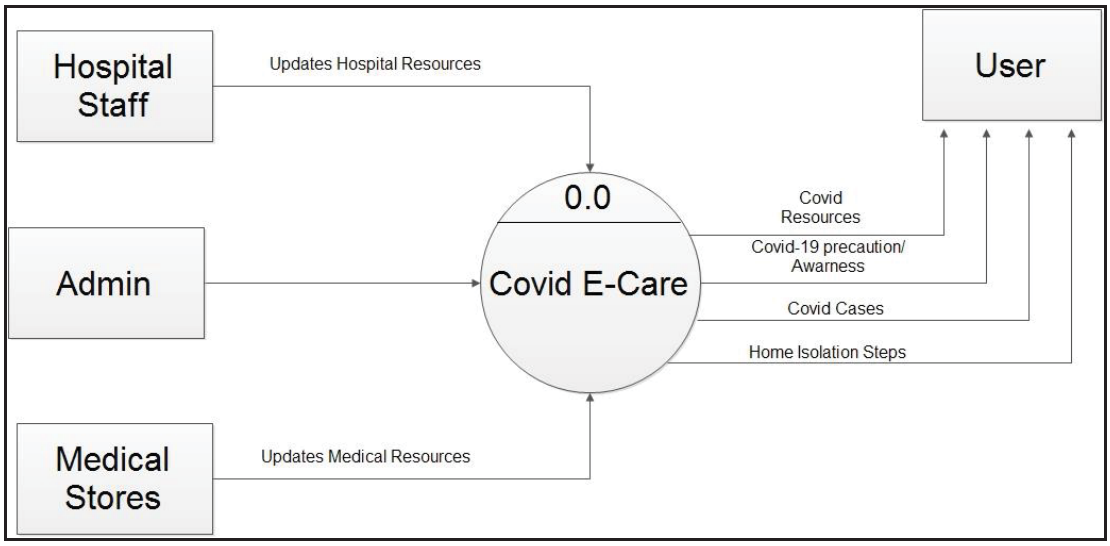


Figure 2.10.1 DFD Level 0

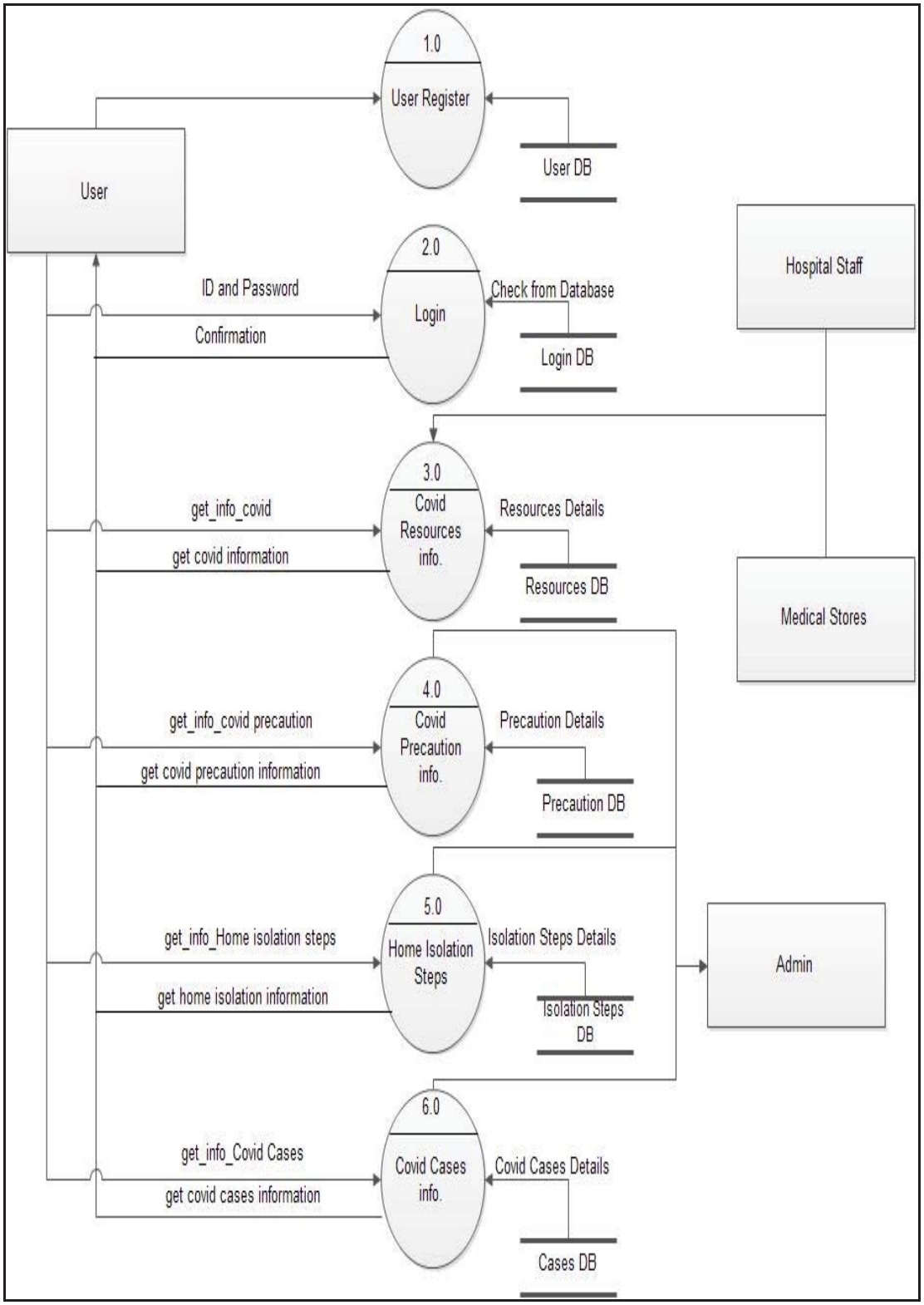


Figure 2.10.2 DFD Level 1

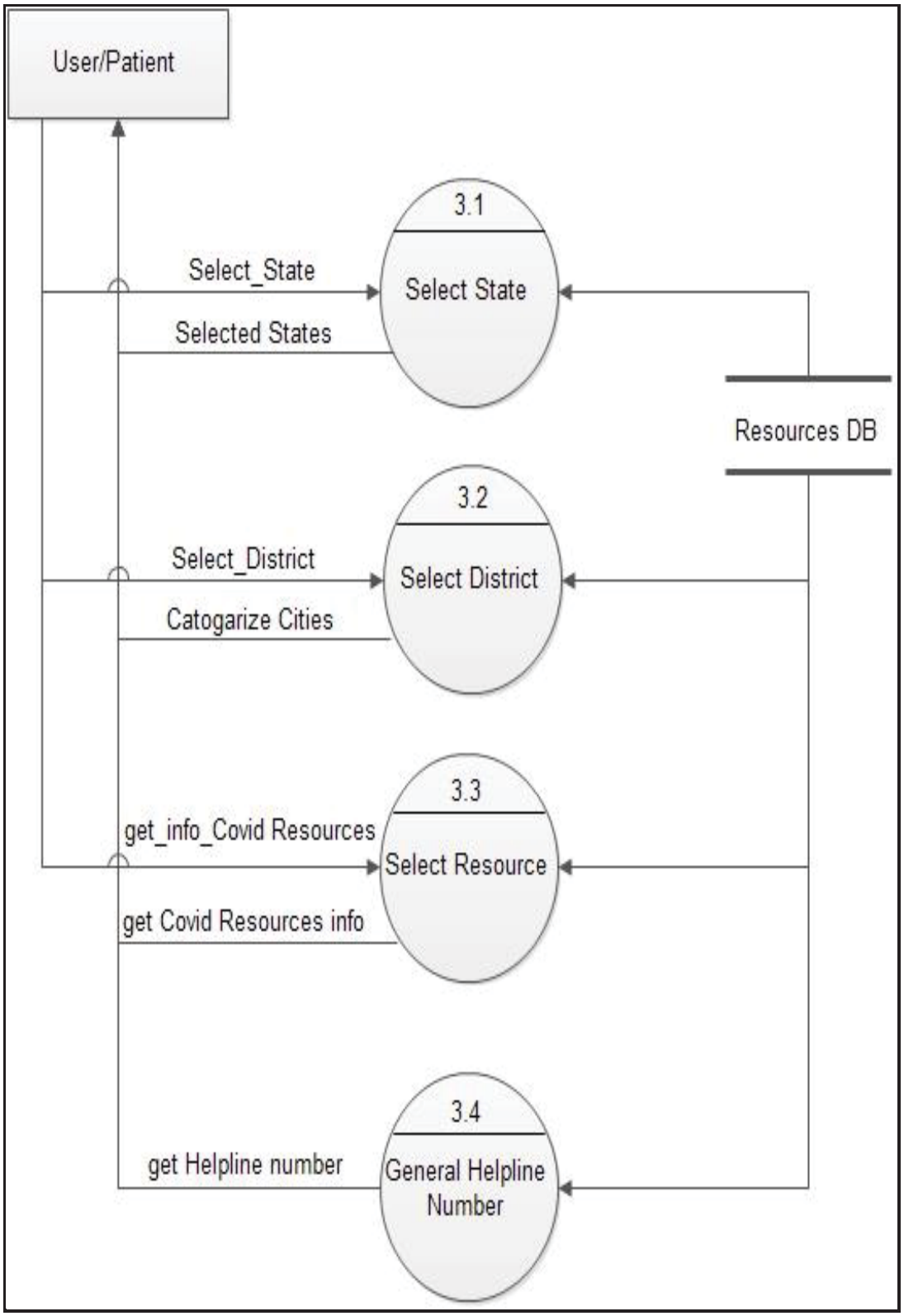


Figure 2.10.3DFD Level 2.1

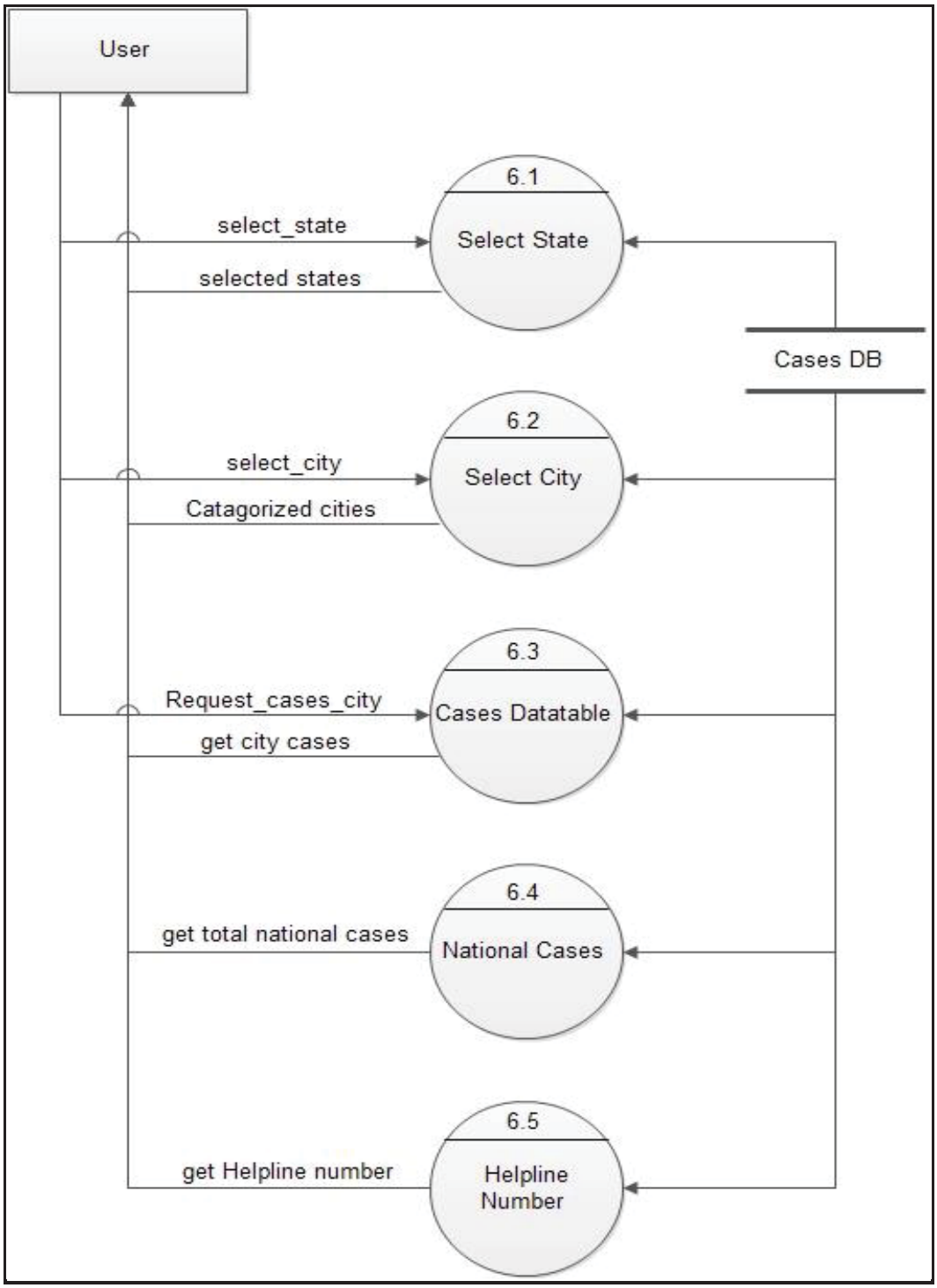


Figure 2.10.4 DFD Level 2.2

2.11 Use - Case Diagram:

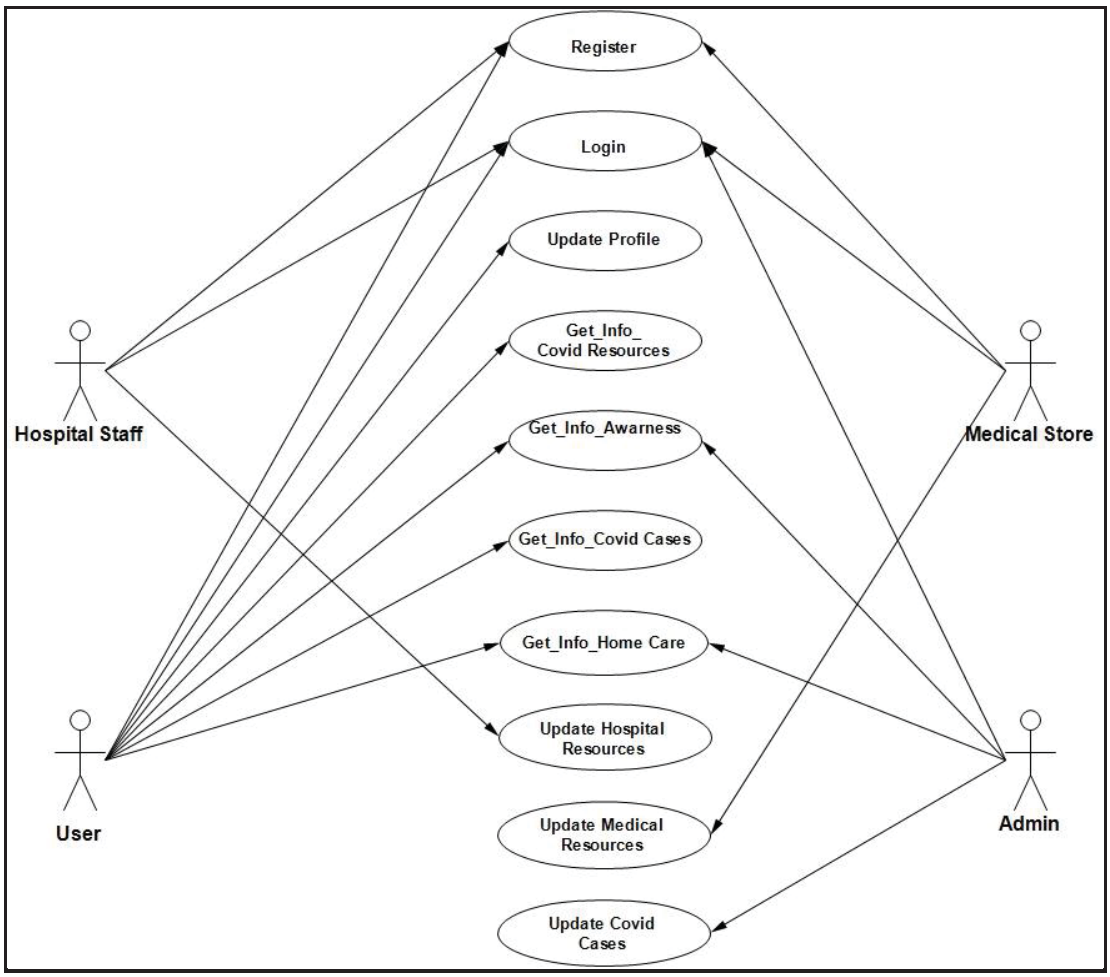


Figure 2.11.1Use-Case

2.12 Activity Diagram:

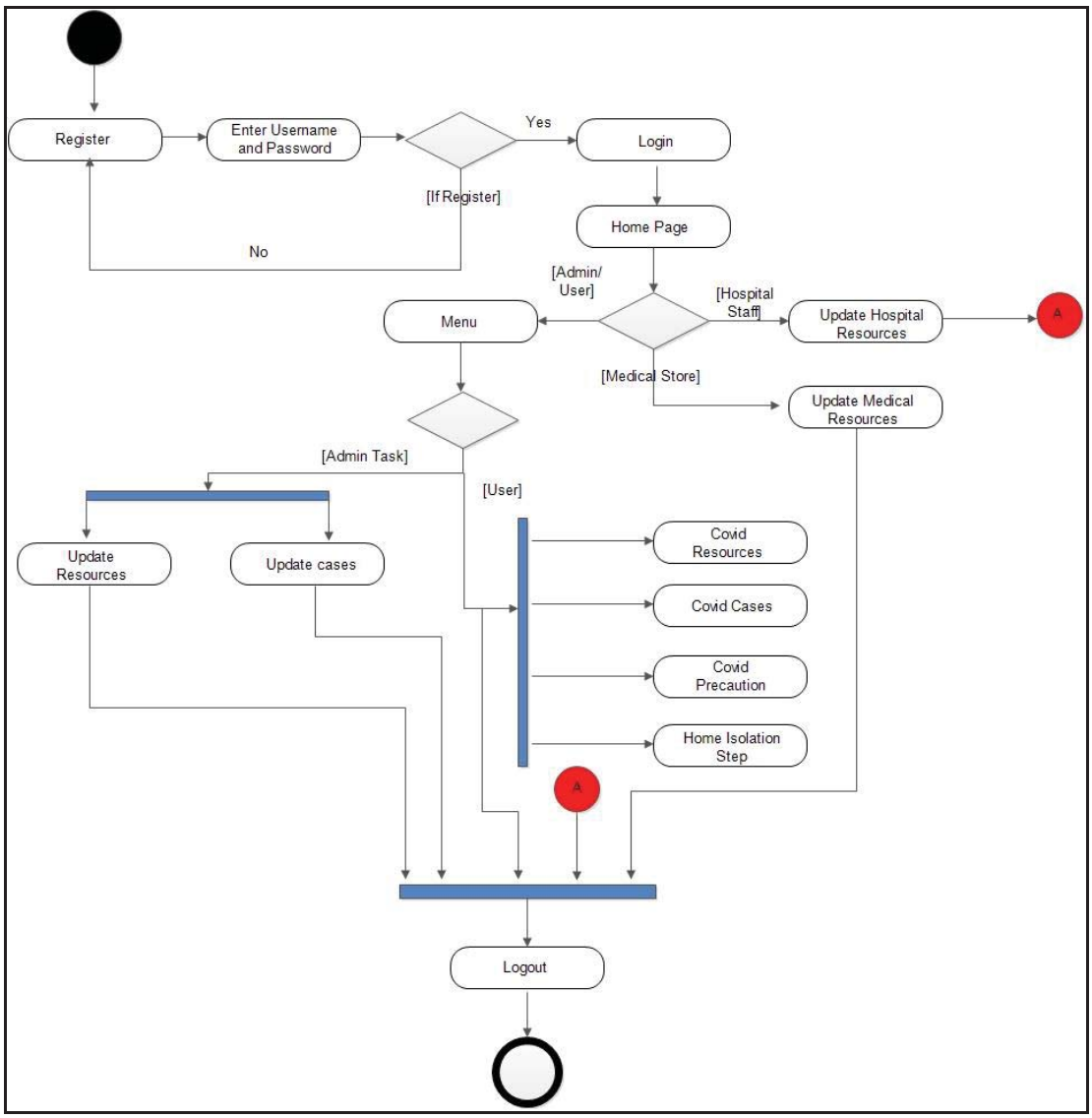


Figure 2.12.1 Activity Diagram

Chapter # 3: System Design

3.1 Database Design

a. Data Dictionary

b. Entity-Relationship Diagram

3.2 GUI Design

3.1 Database Design:

a. Data Dictionary:

1. User Database:

User_DB					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	Firstname	Varchar	50	Allow null	Firstname Of User
2	Surname	Varchar	50	Allow null	Surname Of User
3	E_mail	Varchar	50	Allow null	User E_mail
4	Password	Varchar	50	Allow null	User Password
5	Confirm_Password	varchar	50	Allow null	User Confirm_Password

Table 3.1.1 User Database

2. Admin Database:

Admin_DB					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	Username	varchar	50	Allow null	Username Of Admin
2	Password	varchar	50	Allow null	Login Password Of Admin

Table 3.1.2Admin Database

3. Hosital_Staff Database:

Hospital_Staff_DB					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	Username	varchar	50	Allow null	Username Of Staff
2	Password	varchar	50	Allow null	Login Password Of Staff
3	Confirm_Password	varchar	50	Allow null	Confirm_Password Of Staff
4	Hospital_Name	varchar	50	Allow null	Hospital Name
5	Hospital_Address	varchar	50	Allow null	Address Of Hospital
6	City	varchar	50	Allow null	Hospital City Name
7	State	varchar	50	Allow null	Hospital State Name
8	Mob_No	numeric	10	Allow null	Hospital Number
9	E_mail	varchar	50	Allow null	Hospital Email

Table 3.1.3Hospital_Staff Database

4. Medical_Store Database:

Medical_Staff_DB					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	Username	varchar	50	Allow null	Username Of Staff
2	Password	varchar	50	Allow null	Login Password Of Staff
3	Confirm_Password	varchar	50	Allow null	Confirm_Password Of Staff
4	Medical_Name	varchar	50	Allow null	Medical Name
5	Medical_Address	varchar	50	Allow null	Address Of Medical
6	City	varchar	50	Allow null	Medical City Name
7	State	varchar	50	Allow null	Medical State Name
8	Mob_No	numeric	10	Allow null	Medical Number
9	E_mail	varchar	50	Allow null	Medical Email

Table 3.1.4Medical_Store Database

5. Resources Database:

Resources_DB					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	ID	Numeric	18	Primary Key	ID Of Resource
2	Name	nvarchar	50	Allow null	Hospital Or Medical Store Name
3	Type	nvarchar	50	Allow null	Type Of Resource
4	Total_No	Numeric	18	Allow null	Total No Of Resource
5	Available_No	Numeric	18	Allow null	Available No Of Resource
6	Contact_No	Numeric	10	Allow null	Contact No Of Hospital Or Medical Store
7	Address	nvarchar	200	Allow null	Address Of

					Hospital Or Medical Store
8	City	nvarchar	50	Allow null	City Of Hospital Or Medical Store
9	State	nvarchar	50	Allow null	State Of Hospital Or Medical Store

Table 3.1.5 Resources Database

6. Cases Database:

Cases_DB					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	Total_Cases	numeric	18	Allow null	Total Cases
2	Discharge	numeric	18	Allow null	Discharge Of Selected City
3	Death	numeric	18	Allow null	Death Of Selected city
4	City	nvarchar	50	Allow null	Name Of City
5	State	nvarchar	50	Allow null	Name Of State

Table 3.1.6 Cases Database

7. Contact Us Database:

Contact Us_DB					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	Firstname	nvarchar	50	Allow null	Firstname Of User
2	Lastname	nvarchar	50	Allow null	Lastname Of User
3	E_mail	nvarchar	50	Allow null	E_mail Of User
4	Subject	nvarchar	50	Allow null	Subject Of Message
5	Message	nvarchar	50	Allow null	Message given by User

Table 3.1.7 Contact Us Database

8. State Database:

State_Table					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	StateId	numeric	18	Not null	Id Of State
2	State	nvarchar	50	Allow null	State Name

Table 3.1.8.1 State_Table

City_Table					
Sr.no	**Fieldname**	**Datatype**	**Field_length**	**Constraint**	**Description**
1	CityId	numeric	18	Not null	Id Of City
2	City	nvarchar	50	Allow null	City Name
3	State	nvarchar	50	Allow null	State Name

Table 3.1.8.2 City_Table

b. Entity-Relationship Diagram:

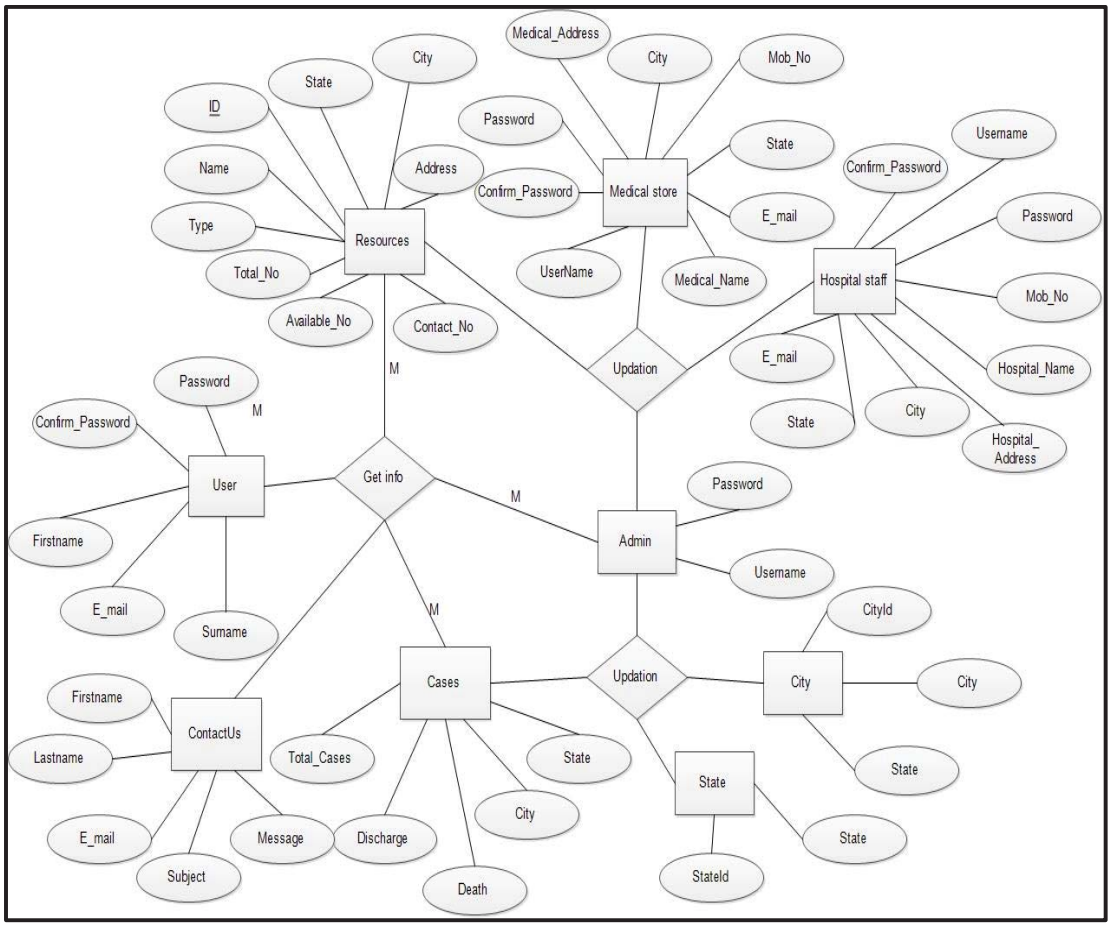


Figure 3.1.1 ER Diagram

3.2 GUI Design:

Figure 3.2.1Home Page

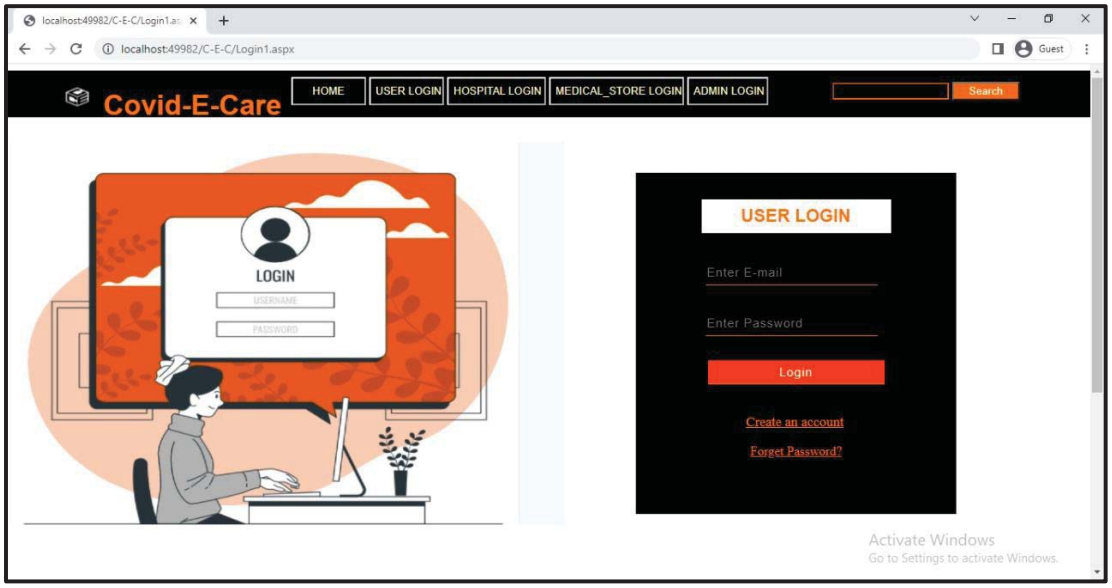


Figure 3.2.2 Login Page

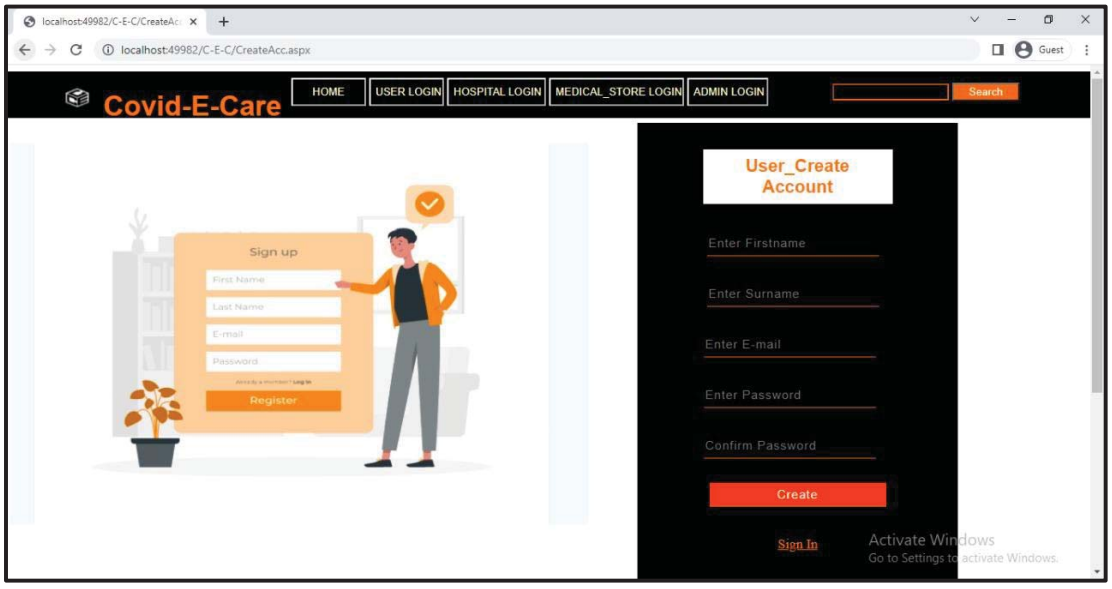


Figure 3.2.3 Registration Page

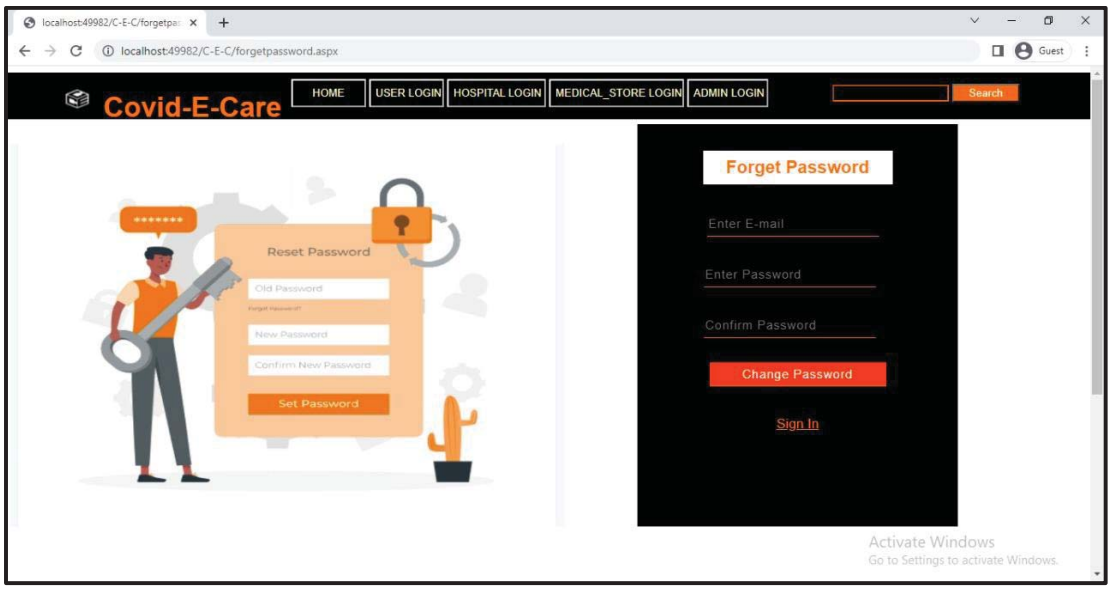


Figure 3.2.4 Forget Password Page

Figure 3.2.5 Home-Page After Login

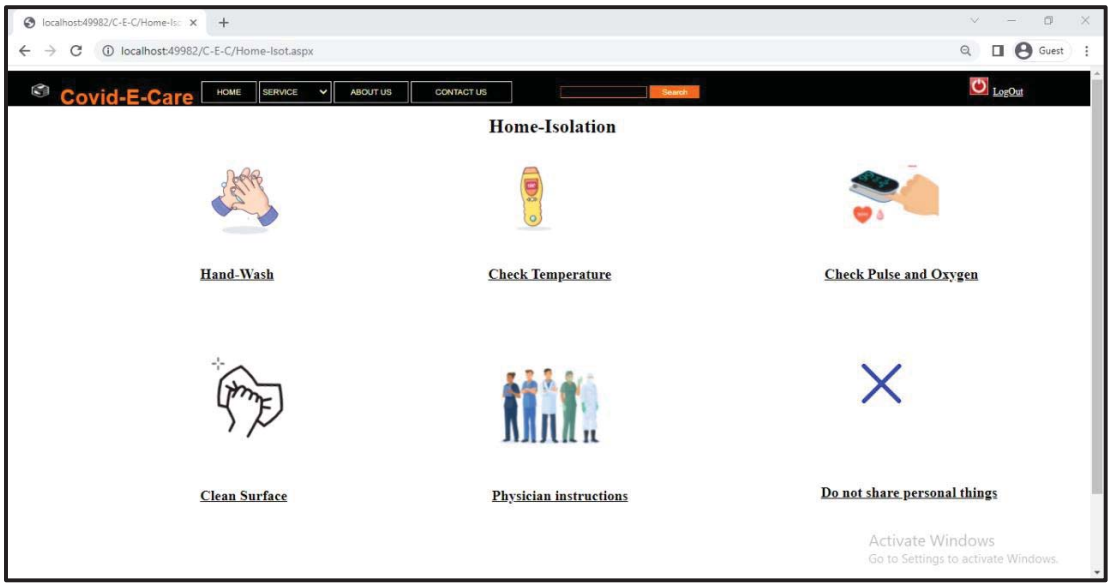


Figure 3.2.6 Home-Isolation Page

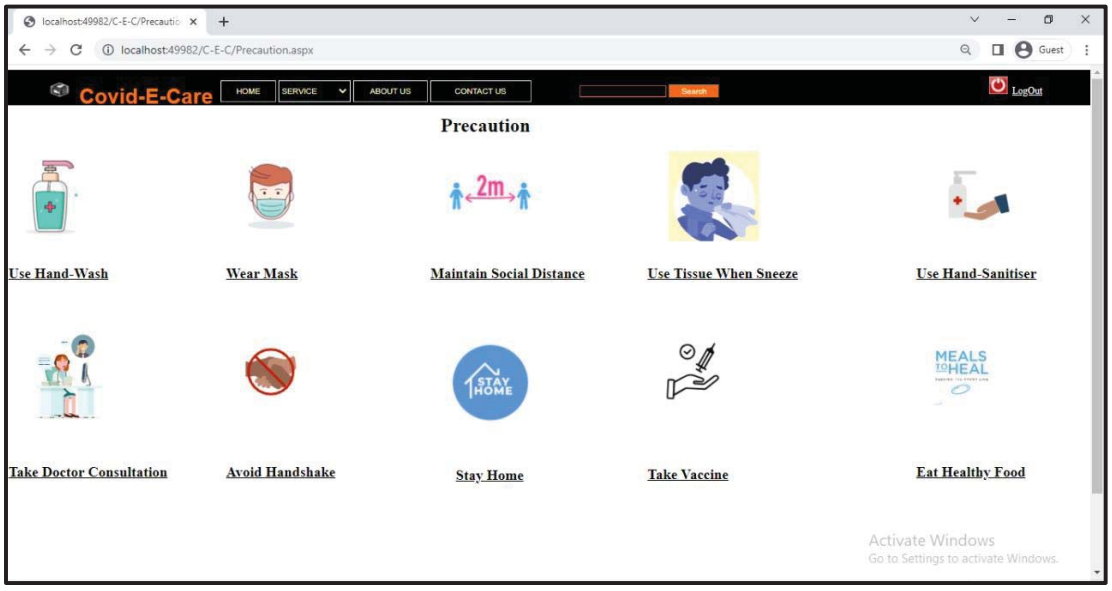


Figure 3.2.7 Covid Precaution

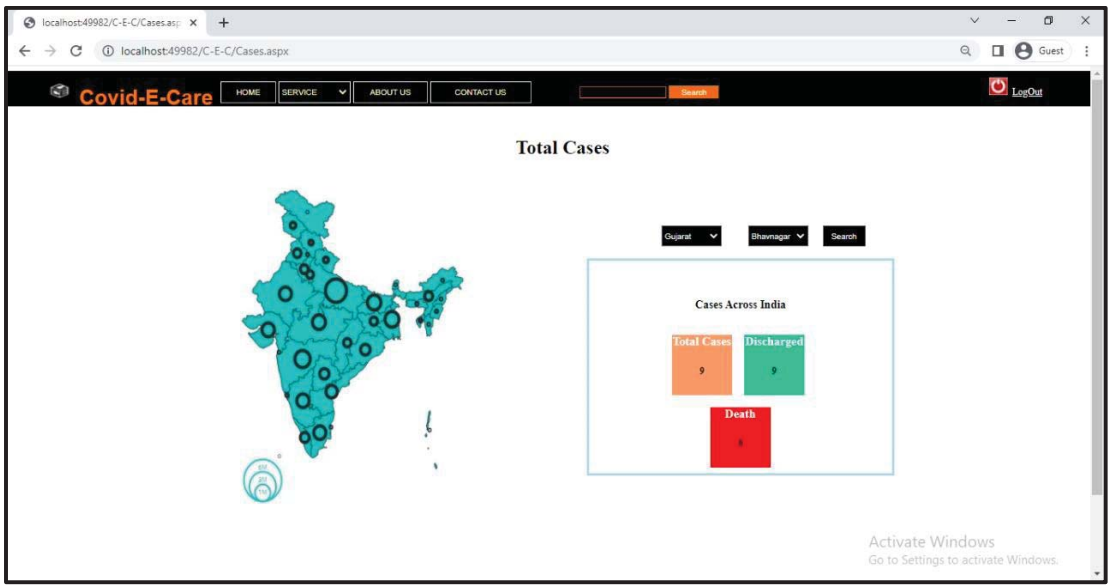


Figure 3.2.8 Covid Cases Page

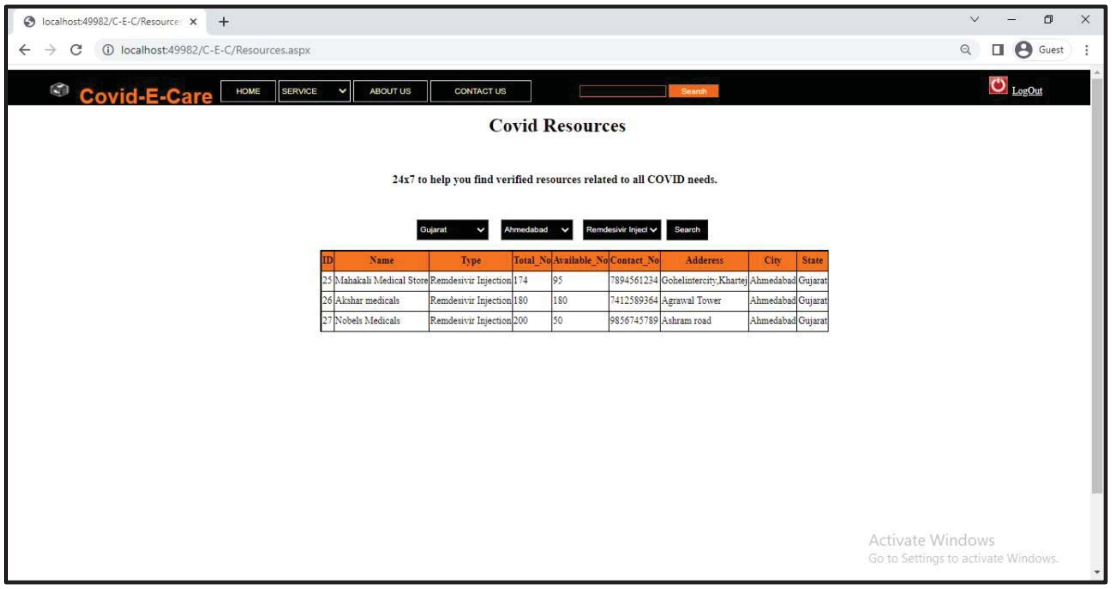


Figure 3.2.9 Covid Resources Page

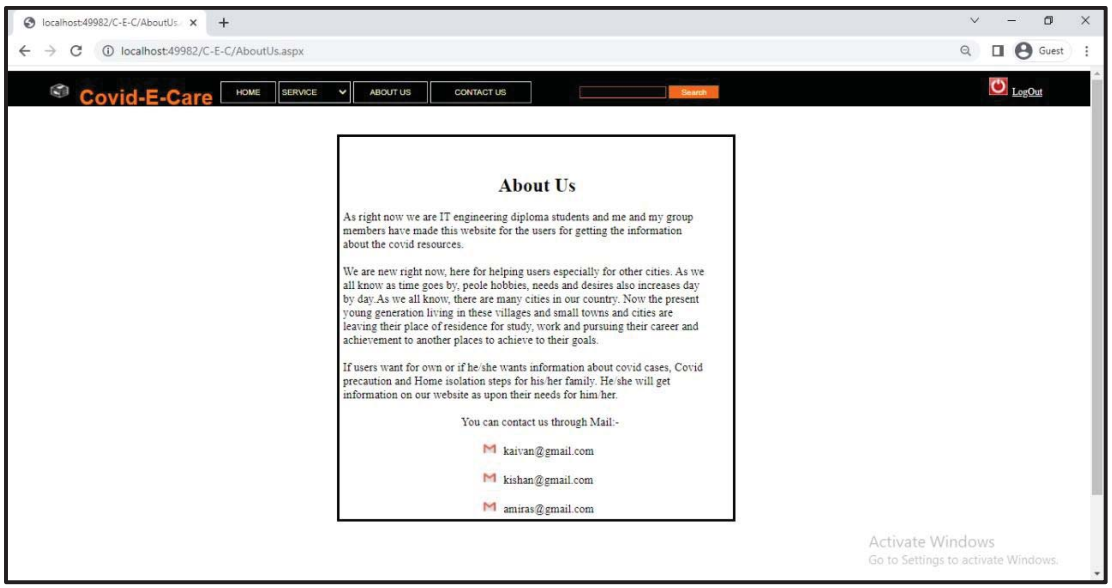


Figure 3.2.10 About Us Page

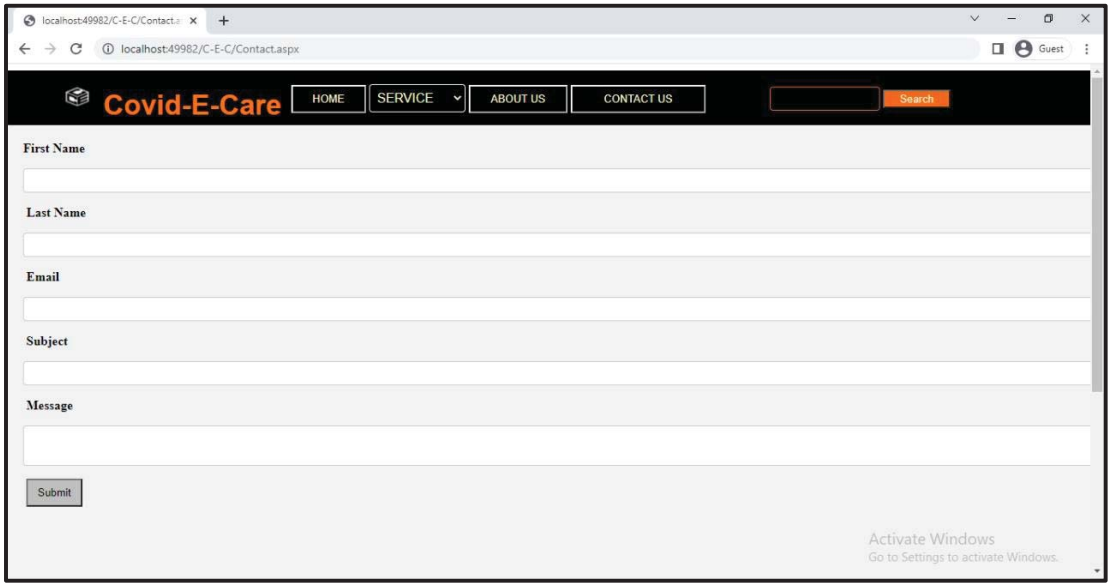
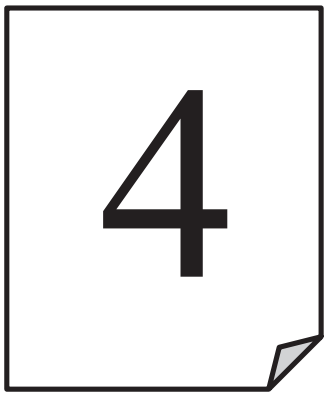


Figure 3.2.11 Contact Us Page



Chapter # 4: System Develpoment

4.1 Coding Standard

4.2 Tools Explanation

4.1 Coding Standard:

- Below mention are few guidelines that one must follow in order to maintain the standard of VB coding.

➢ **ASP Tags:**

- ASP can use any scripting language, so as to embed programming and server side directives into a HTML web page.

➢ **Commenting:**

- Put comments on a separate line instead of at the end of a line of code.
- Start comment text with an uppercase letter, and end comment text with a period.
- Insert one space between the comment delimiter (') and the comment text.

➢ **Line length and Indentation:**

- It is a standard recommendation to not exceed more than 75-85 characters per line of code. One must not use tabs for indentation instead use 4 spaces as it is the standard indenting method in most of the programing languages.

➢ **Structuring the control flow statements:**

- The control flow or conditional statements must be written in such a way so that it could be differentiated from function call statements. While writing if, for, while, switch and other control flow statements there must be one space between the keyword and the opening parenthesis.
- Example:

```
Imports System
Imports System.Collections.Generic
Imports System.Linq
Imports System.Text
Imports System.Threading.Tasks

Namespace ConsoleApp1
```

```
Class Program
        Private Shared Sub Main(args As String())
        Dim number As Integer
        Console.Write("Check whether a  number is even or odd :"&vbLf)
        Console.Write("---------------------------------------")
        Console.Write(vbLf&vbLf)
        Console.Write("Enter an Integer : ")
        number = Convert.ToInt32(Console.ReadLine())
        If number Mod 2 = 0 Then
                Console.WriteLine("{0} is an even Number."&vbLf, number)
        Else
                Console.WriteLine("{0} is an odd Number."&vbLf, number)
        EndIf
        Console.ReadKey()

        EndSub
         EndClass
EndNamespace
```

- **Naming Variables:**

- Do not use "My" or "my" as part of a variable name. This practice creates confusion with the My objects.
- You do not have to change the names of objects in auto-generated code to make them fit the guidelines.

- **Layout:**

- Insert tabs as spaces, and use smart indenting with four-space indents.
- Use Pretty listing (reformatting) of code to reformat your code in the code editor.
- Use only one statement per line. Don't use the Visual Basic line separator character (:).
- Avoid using the explicit line continuation character "_" in favor of implicit line continuation wherever the language allows it.
- Use only one declaration per line.
- If Pretty listing (reformatting) of code doesn't format continuation lines automatically, manually indent continuation lines one tab stop. However, always left-align items in a list.

4.2 Tools Explanation:

- **Visual Studio:**

- Webserver turns your computer into a ready-to-use personal web hosting server.
- The server is fully configurable, modular and easy to update and extend.
- You can host whatever you want directly on your computer and share it on internet like any website.
- Microsoft visual studio is an integrated development environment (IDE) from Microsoft.
- It can produce both native code and manage code.

- **Features:**

- Code editor
- Debugger
- Designer
- Property editor
- Object browser
- Solution explorer
- Team explorer
- Data explorer
- Server explorer

- **SQL Server:**

- SQL Server is a relational database management system (RDBMS) developed by Microsoft.
- It is primarily designed and developed to compete with MySQL and Oracle database.
- SQL Server supports ANSI SQL, which is the standard SQL (Structured Query Language) language.
- However, SQL Server comes with its own implementation of the SQL language, T-SQL (Transact-SQL).
- **T-SQL** is a Microsoft propriety Language known as **Transact-SQL.** It provides further capabilities of declaring variable, exception handling, stored procedure, etc.
- SQL Server Management Studio (SSMS) is the main interface tool for SQL Server, and it supports both 32-bit and 64-bit environments.

Chapter # 5: Testing

5.1 Testing Strategy:

- Software testing is a critical element of software quality assurance and represents the ultimate review of specification, design, and code generation.
- Testing is a process of executing a program with the intent of finding an error.
- A strategy for software testing integrates software test case design methods into a well-planned series of steps that result in the successful construction of software.

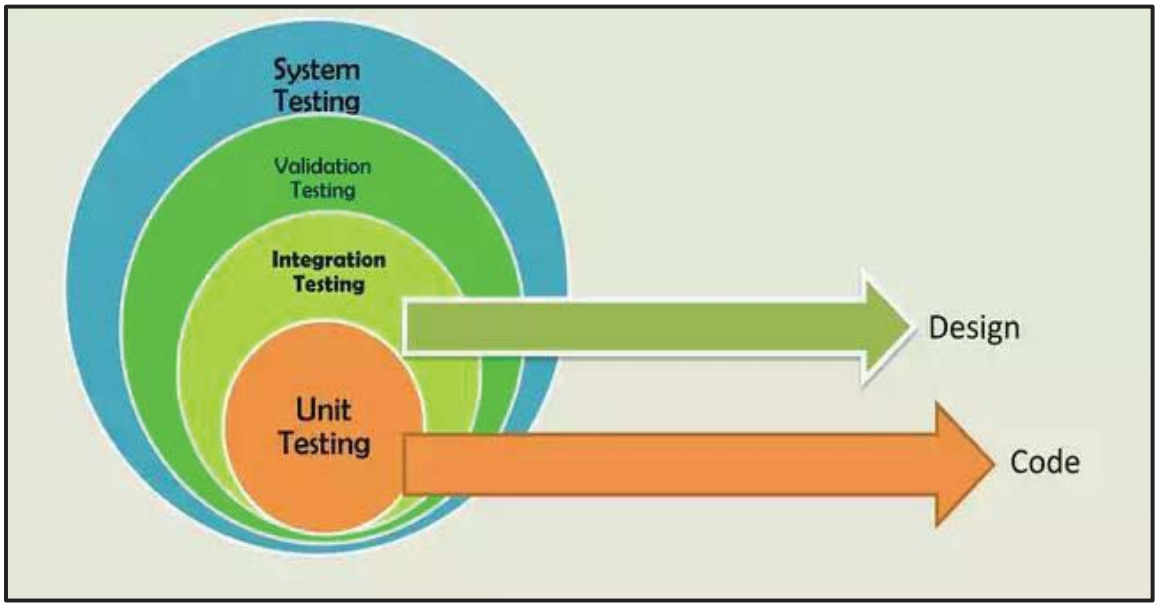


Figure 5.1.1 Testing Strategy

➢ **Unit Testing:**

- Unit Testing is a software testing technique by means of which individual units of software i.e. group of computer program modules, usage procedures and operating procedures are tested to determine whether they are suitable for use or not.
- It is a testing method using which every independent modules are tested to determine if there are any issue by the developer himself.
- Unit Testing is defined as a type of software testing where individual components of a software are tested.
- Unit Testing of software product is carried out during the development of an application. An individual component may be either an individual

function or a procedure. Unit Testing is typically performed by the developer.

- **Integration Testing:**

  - Integration testing is the second level of the software testing process comes after unit testing. In this testing, units or individual components of the software are tested in a group.
  - The focus of the integration testing level is to expose defects at the time of interaction between integrated components or units.
  - Once all the components or modules are working independently, then we need to check the data flow between the dependent modules is known as integration testing.
  - It focuses mainly on the interface and flow of data or information between the modules.

- **Validation Testing:**

  - Validation testing can be best demonstrated using V-Model. The Software/product under test is evaluated during this type of testing.
  - During the validation testing, there should not be even a single miss on the requirements asked by the user.
  - It is basically checking of developed program based on the requirement specifications.
  - All the critical functionalities of an application must be tested here.

- **System Testing:**

  - System Testing is a type of software testing that is performed on a complete integrated system to evaluate the compliance of the system with the corresponding requirements.
  - In system testing, integration testing passed components are taken as input. The goal of integration testing is to detect any irregularity between the units that are integrated together.
  - System testing detects defects within both the integrated units and the whole system.
  - The result of system testing is the observed behavior of a component or a system when it is tested.
  - System Testing is carried out on the whole system in the context of either system requirement specifications or functional requirement specifications or in the context of both.

5.2 Testing Methods:

- **Black Box Testing:**

  - Black box testing is a technique of software testing which examines the functionality of software without peering into its internal structure or coding.
  - The primary source of black box testing is a specification of requirements that is stated by the customer.
  - In this method, tester selects a function and gives input value to examine its functionality, and checks whether the function is giving expected output or not.
  - If the function produces correct output, then it is passed in testing, otherwise failed. The test team reports the result to the development team and then tests the next function.
  - After completing testing of all functions if there are severe problems, then it is given back to the development team for correction.

- **Step of Black Box Testing:**
  - The black box test is based on the specification of requirements, so it is examined in the beginning.
  - In the second step, the tester creates a positive test scenario and an adverse test scenario by selecting valid and invalid input values to check that the software is processing them correctly or incorrectly.
  - In the third step, the tester develops various test cases such as decision table, all pairs test, equivalent division, error estimation, cause-effect graph, etc.
  - The fourth phase includes the execution of all test cases.
  - In the fifth step, the tester compares the expected output against the actual output.
  - In the sixth and final step, if there is any flaw in the software, then it is cured and tested again.

- **White Box Testing:**

  - White Box Testing is software testing technique in which internal structure, design and coding of software are tested to verify flow of input-output and to improve design, usability and security.
  - In white box testing, code is visible to testers so it is also called Clear box testing, Open box testing, Transparent box testing, Code-based testing and Glass box testing.
  - It is one of two parts of the Box Testing approach to software testing. Its counterpart, Blackbox testing, involves testing from an external or end-user type perspective.
  - On the other hand, White box testing in software engineering is based on the inner workings of an application and revolves around internal testing.
  - Although traditional testers tended to think of white-box testing as being done at the unit level, it is used for integration and system testing more frequently today.
  - It can test paths within a unit, paths between units during integration, and between subsystems during a system–level test.

- **Step of White Box Testing:**

  - Design all test scenarios, test cases and prioritize them according to high priority number.
  - In Second step involves the study of code at runtime to examine the resource utilization, not accessed areas of the code, time taken by various methods and operations and so on.
  - In Third step testing of internal subroutines takes place. Internal subroutines such as nonpublic methods, interfaces are able to handle all types of data appropriately or not.
  - Fourth step focuses on testing of control statements like loops and conditional statements to check the efficiency and accuracy for different data inputs.

- In the last step white box testing includes security testing to check all possible security loopholes by looking at how the code handles security.

5.3 Test Cases:

Pre-Condition: User has valid username and password.						
Dependencies: User have not registration.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Navigate to Login Page		The Username or password doesn't match to our database.	Reject first registration to our website	Pass	
2	Enter E-mail	kaivan@gmail.com				
3	Enter Password	Kaivan123				
4	Click on login					
Post-condition: User first registration our website.						

Table 5.3.1 User Login(Without Registration)

Pre-Condition: User has valid below test steps details.						
Dependencies:						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Navigate to Registration		User should be able to registration. .	User get message of registration successful	Pass	
2	Enter Firstname	Kaivan				
3	Enter Surname	Shah				
4	Enter E-mail	kaivan@gmail .com				
5	Enter Password	Kaivan123				
6	Enter Confirm Password	Kaivan123				
7	Click on Register					
Post-condition: User is registered and details are store in database.						

Table 5.3.2 Table Registration Test case

Pre-Condition: User has valid username and password.						
Dependencies: User has done registration.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Navigate to Login Page		User should be able to login.	User logged in and navigate to home page	Pass	
2	Enter E-mail	kaivan@gmail .com				
3	Enter Password	Kaivan123				
4	Click on login					
Post-condition: User first registration our website.						

Table 5.3.3 User Login(After Registration)

Pre-Condition: User has selected Covid Precaution Service						
Dependencies: User already logged in system.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Navigate to Covid Precaution Page		User gets information about Covid Precaution.	User gets informati on	Pass	
Post-condition: User can see all information regarding Covid Precaution.						

Table 5.3.4Table Precaution Step Test Case

Pre-Condition: User has selected Home Isolation Service						
Dependencies: User already logged in system.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Navigate to Home Isolation Page		User gets information regarding Home Isolation steps.	User gets informati on regarding steps	Pass	
Post-condition: User can see all information regarding Home Isolation Steps.						

Table 5.3.5 Table Home Isolation Step Test Case

Pre-Condition: User has selected Covid Cases Service						
Dependencies: User already logged in system.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Navigate to Cases Page		User gets information about Total Cases, Discharge & Death.	User gets information about Total Cases, Discharge & Death	Pass	
2	Select One State	Gujarat				
3	Select One City	Bhavnagar				
Post-condition: User can see all information regarding cases of its particular city.						

Table 5.3.6 Table Covid Cases Test Case

Pre-Condition: User has selected Covid Resource Service						
Dependencies: User already logged in system.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Navigate to Covid Resource Page		User gets information regarding selected resource according to particular city	User gets information regarding selected resource according to particular city	Pass	
2	Select One State	Gujarat				
3	Select One City	Bhavnagar				
4	Select One Resource	Oxygen				
Post-condition: User can see all information regarding selected resource of its particular city.						

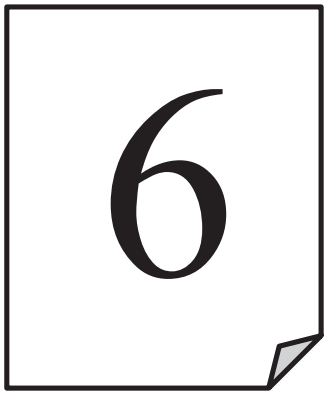
Table 5.3.7 Table Covid Resource Test Case

Pre-Condition: User has selected Vaccination Service						
Dependencies: User already logged in system.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Navigate to Cowin Page		User goes to Co-win Website.	User goes to Co-win Website.	Pass	
Post-condition: User goes directly to Co-win website.						

Table 5.3.8 Table Vaccination Test Case

Pre-Condition: User has select Contact Us or gives message to our application.						
Dependencies: User already logged in system.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/ fail)**	**Notes**
1	Navigate to Contact us Page.		User should be able to Contact Us.	User get message "Message sent successfully"	Pass	
2	Enter Firstname	Kaivan				
3	Enter Lastname	Shah				
4	Enter E-mail	kaivan@gmail .com				
5	Enter Subject	XYZ				
6	Enter Message	Very nice website				
7	Click on submit					
Post-condition: Message are store in database with E-mail.						

Table 5.3.9 Table Contact Us Test Case



Chapter # 6: Conclusion

6.1 Benefits

6.2 Limitations

6.3 Future Enhancements

6.1 Benefits:

- Our web application allows covid –patients and his/her family multi-purpose use by providing many services.
- This provides various needed services such as Hospital Info, Medical Store Info, Vaccination as well as Covid Testing place.
- Other city as well as particular city person cans gets all type information which is high required for Covid Patient and for his/her.
- If any user has any type of doubt then he/she can contact us using our website.
- The user does not have to go to different websites for different service. So it save some times of user.
- We cannot use user's private data to any other place. So we can allow security to the user.
- Our website has simple GUI so user can easily use it.

6.2 Limitations:

- We just provide information related to covid resources and for safe from Covid. If any user has to buy any resource then he/she has to contacts to given hospital or medical store.
- User, Hospital staff and Medical store staff must have to sign in first for use our web application.
- Our web application comparatively works slowly.
- Covid cases are not updated immediately so it takes some time for update the total cases or deaths.
- User cannot use our website using the mobile.

6.3 Future Enhancements:

- We don't provide all the services related to covid-19.
- In this, we only provide some state and some city to particular city.
- User has to use desktop or laptop for use our web application so in future we can make one application for Mobile-User.
- In future, we can add some more security for user to update his/her password using the OTP or any verification code.

Reference

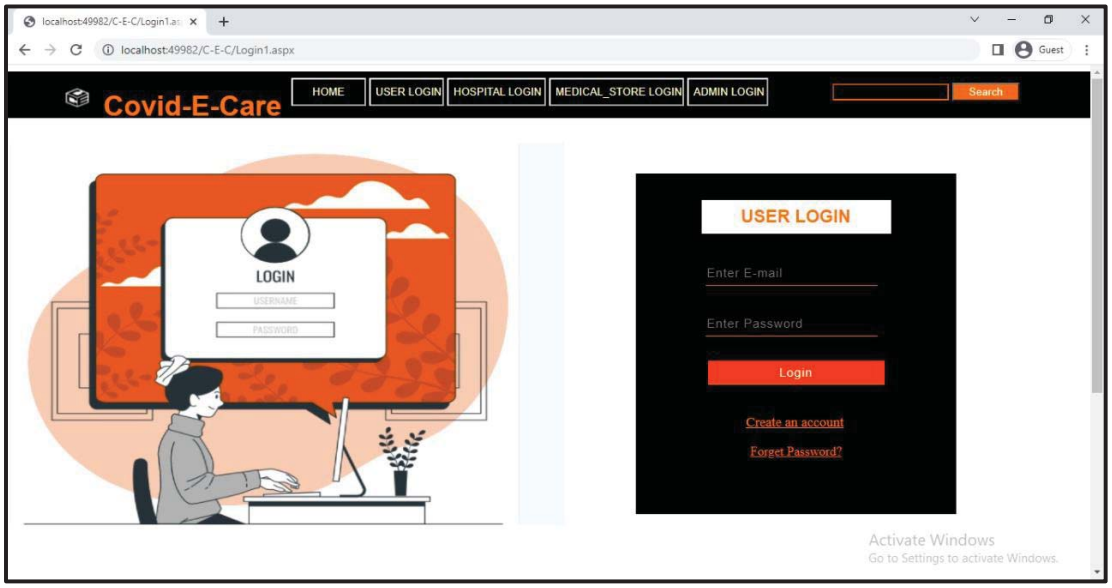
- https://sirthospital.com/
- https://www.mygov.in/covid-19
- https://www.covidindiaresources.com/
- https://www.covidresourcesindia.com/
- https://www.cowin.gov.in/
- https://www.cdc.gov/coronavirus/2019-ncov/index.html\
- https://mohfw.gov.in/
- https://www.unicef.org/india/coronavirus/covid-19
- https://www.covid19india.org/
- https://www.geeksforgeeks.org/software-engineering-white-box-testing/
- https://www.javatpoint.com/black-box-testing
- https://www.guru99.com/software-testing.html

Appendix

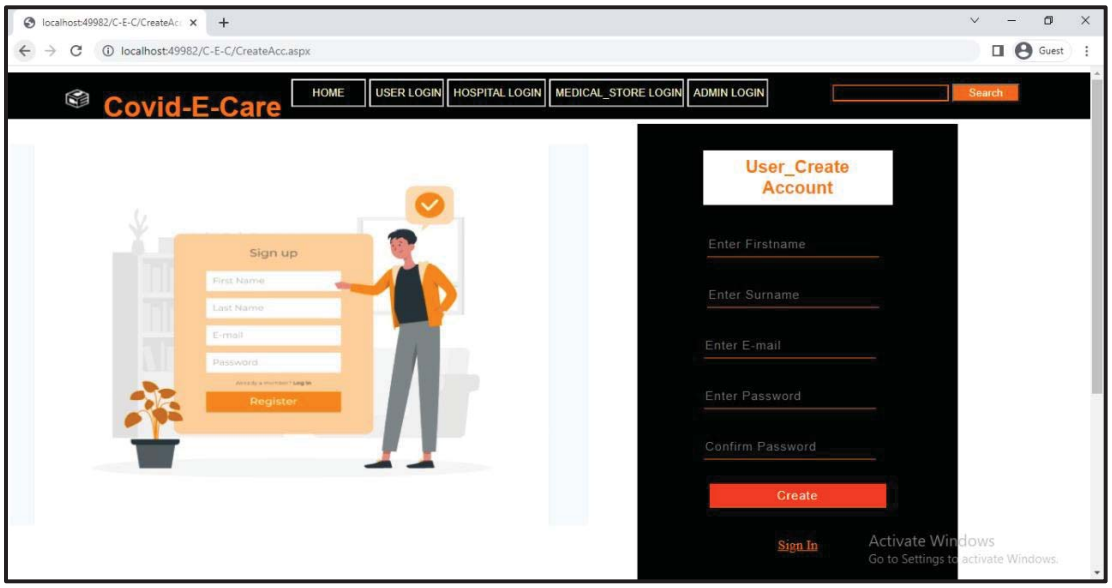
User Manual:

Step-1: User redirect to the Home page.

Step-2: User must have to login then it can get services provided by us.

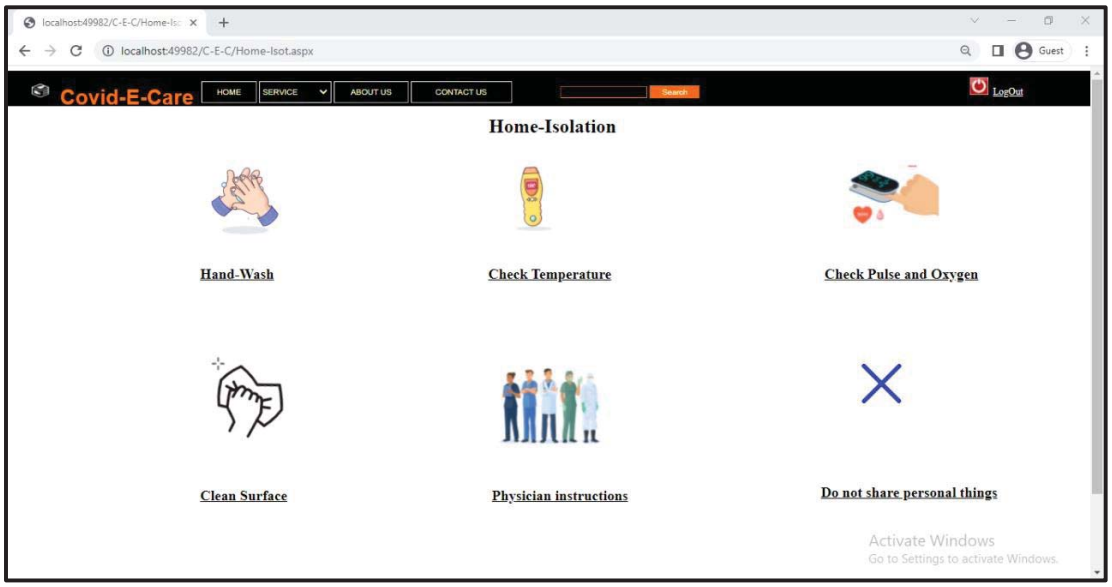


Step-3: If user already registered then he/she can login using email and password. If user not registered then he/she has to create one account then he/she has to login.

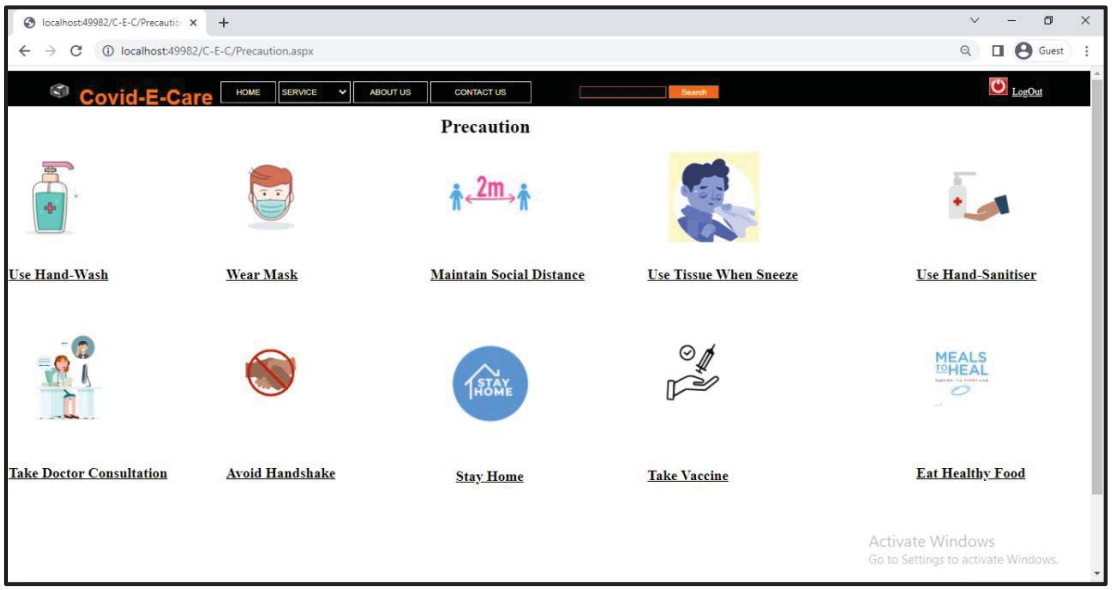


Step-4: After successfully login user can use our services.

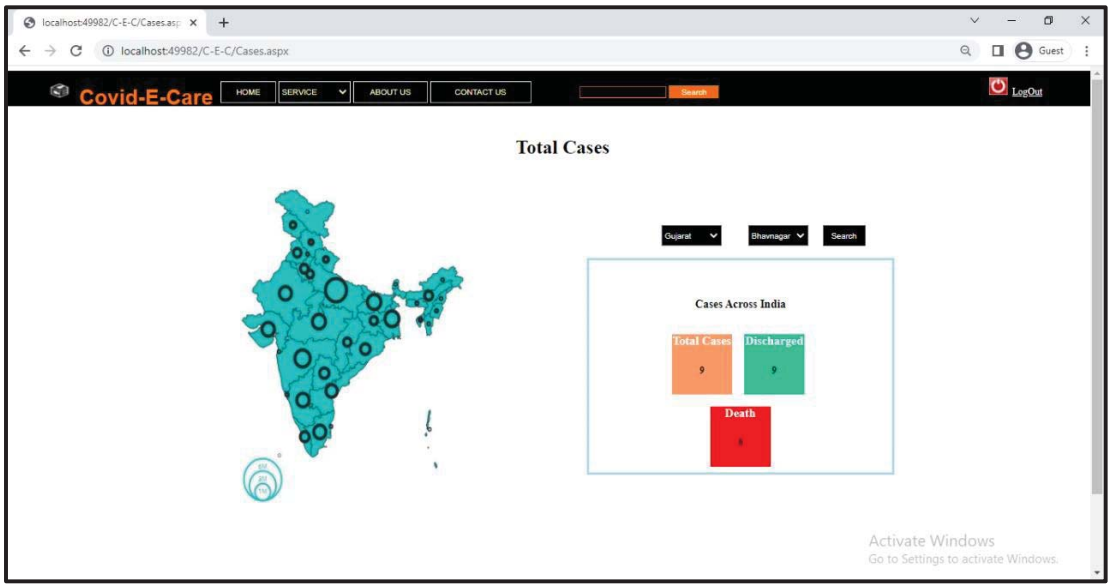
Step-5: "Service": When user click on Home-Isolation from service it redirect to the Home-Isolation page.



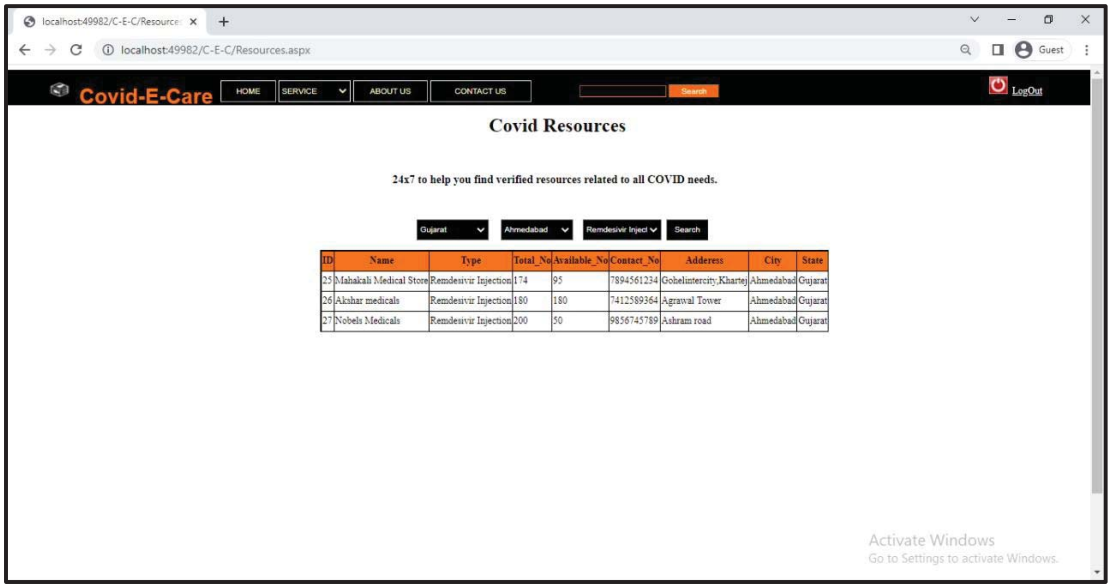
Step-6: When user click on Precaution from service it redirect to the Precaution page.



Step-7: When user click on Covid-Cases from service it redirect to the Covid Cases page. He/she can select state and that state particular city.

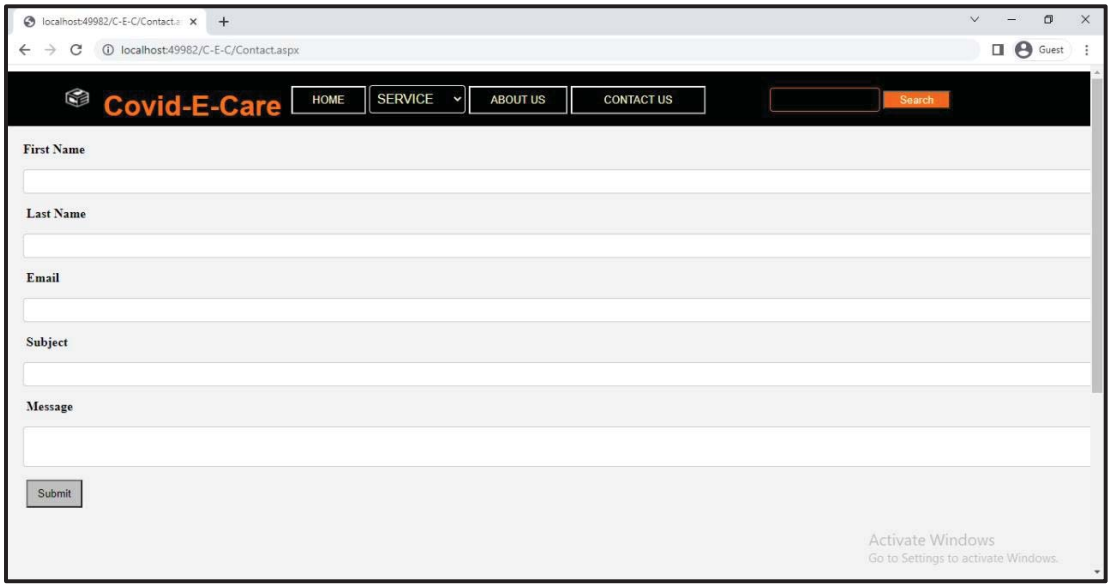


Step-8: When user click on Covid-Resource from service it redirect to the Covid-Resource page. He/she can select state and that state particular city and as well as resource from the resource type.

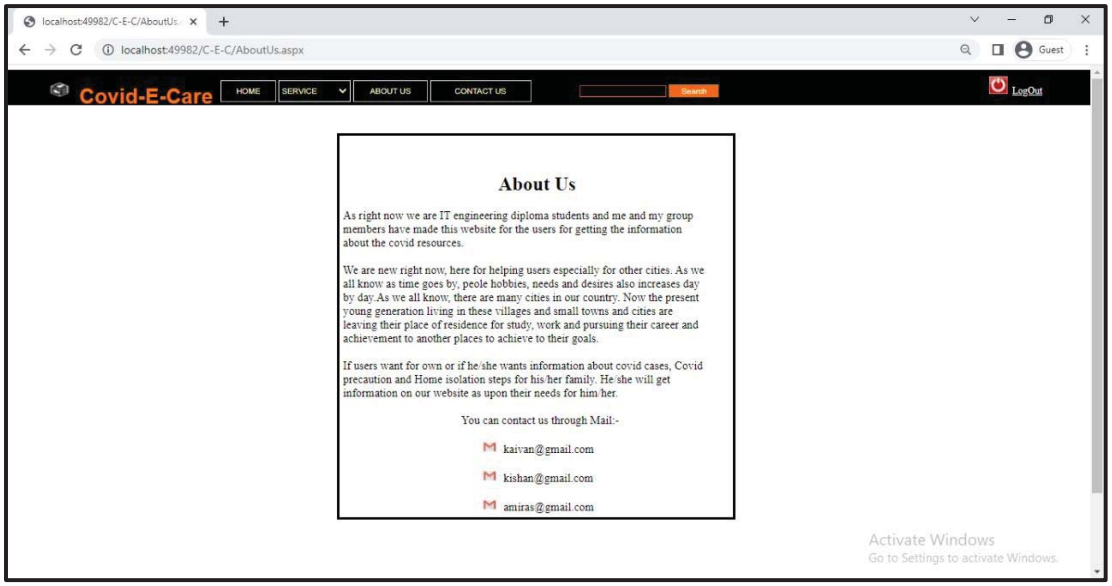


Step-9: When user clicks on Vaccination from service it redirect to the CoWin website provided by the Government of India.

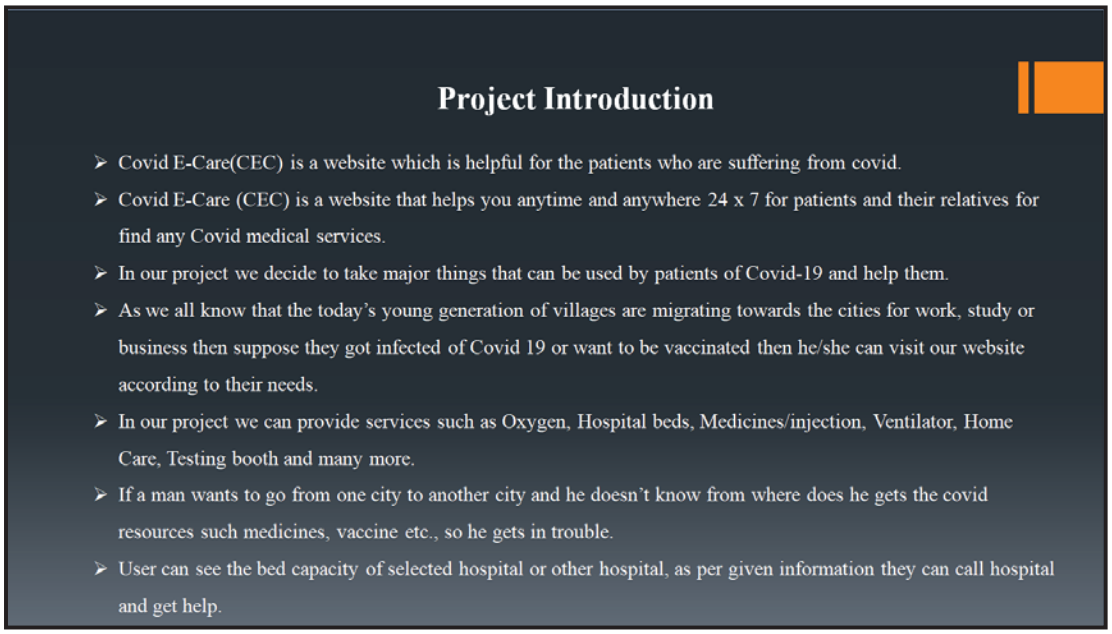
Step-10: "Contact Us": If user has any query or doubt related to our website he/she can contact us. We try to resolve that problem as early as.



Step-11: "About Us": If user has to know about us then he/she can click on About Us for more details.



Presentation:



Purpose

- Our main purpose is that about the current crisis that people are facing today, they get the required covid resources easily and save their life, time and money.
- If the family from outside needs any Covid medical treatment, we can also solve the problem with our modern Web Application. As well as, our modern method will be very useful in handling any covid suffering patient in emergency situation.
- Our web application helps to book the slot for vaccine for you and your family easily.
- In our web application a person can also check the active or total cases of covid in that city.
- Our website enables user friendly for Hospital-users relationship. User can easily check about their nearest covid resources and find out solution.
- This service is for Covid-19 patients and their families for that they cannot have to go every medical shop and every medical hospital. They can search specific hospital and their services. So that, they can go there and take medicine or any another resources.
- Lots of people who cannot take care from Covid-19 virus they can also check our web application for what they have to do.

Scope

- This web site does not provide module for booking any Covid resources, Hospital beds and any other needs.
- In our Web site it will only give information about the Covid resources and only information for beds for Covid patients and also vaccine for Covid not for any another diseases.
- Here, the active cases of Covid-19 does not give at accurate time, it will changes it database at 1 Day (24-Hour) interval.
- This website is only for selected states/cities.
- Only admin users can modify this site, user cannot modify this site.

Weakness of Current System

https://sirthospital.com/

https://www.cowin.gov.in/

https://www.covidindiaresources.com/

https://www.covid19india.org/

https://www.unicef.org/india/coronavirus/covid-19

Problem Identification / Definition

- As given above sites, we have to go different websites for different resources needed for patients and information about resources.
- If we have to get urgent resources then we have to search every websites, this takes so much time. We provide all the information in one site.
- Many Sites gives services after provide some information such as email id, mobile number. If any information leak through that website then our all data can fetch by the unknown user.
- If we create a website that provide all the services in one site, so user have not give his/her sensitive information in every sites.
- In our website we give all the resources as well as vaccination booking site and many more, so it is easy and fast for user to use site.
- We give some guidance to people in our web application for be aware from Covid-19. Obey the SOP given by the government.

Requirement of New System

1) **Functional Requirements:**

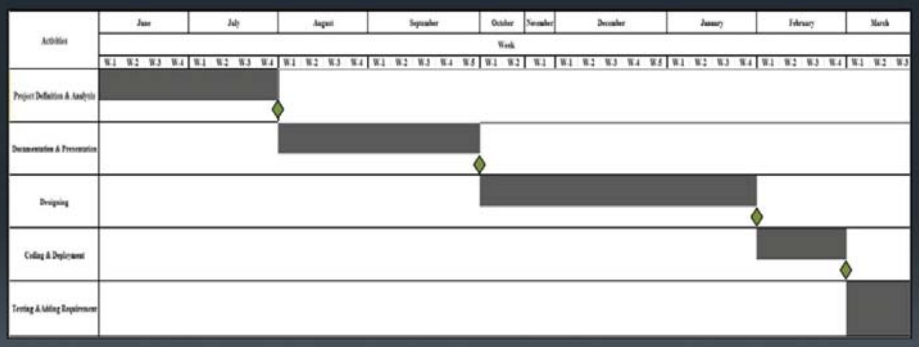
- **Provide all Requirements:**
  - We Provides all the requirement to the patient of Covid-19 in a single web application, so they can purchase needed resources in small time.
- **Given all information is Real:**
  - We provide all the information to the user given by the state government or government of India.
  - We don't do any wrong thing with user's health.
- **All resources are certified:**
  - We provide that hospital, medical and other information who certify by the government.

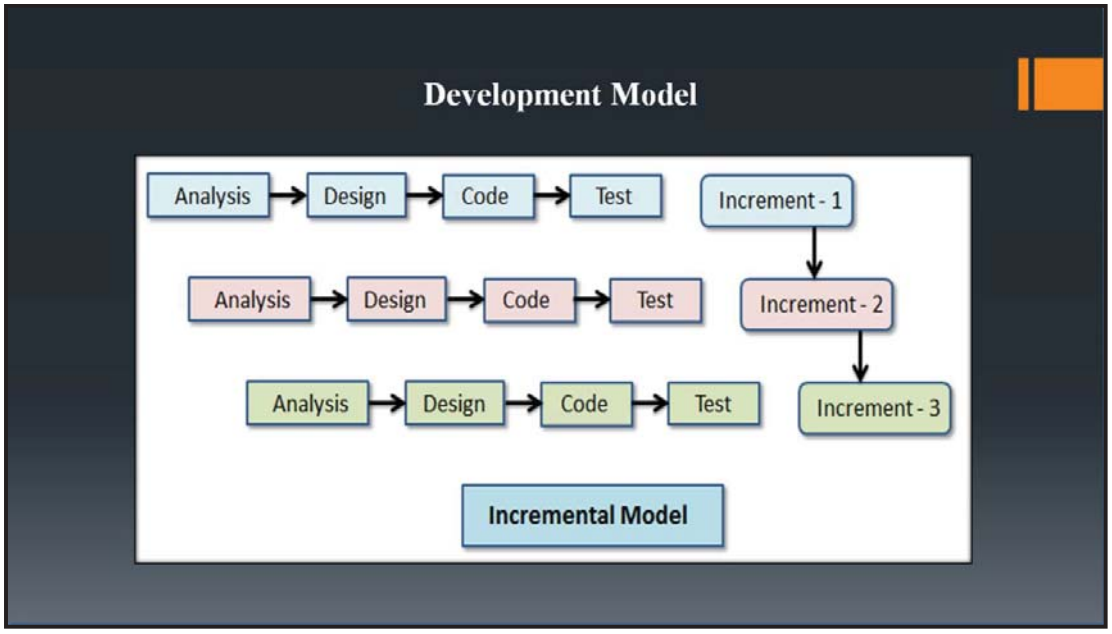
2)**Non-Functional Requirements:**

- **Portability:**
  - The website is portable because online website running across the Internet.
- **Security:**
  - This website provide user authentication so that only the authorized admin are allowed to modify the data in website.
- **Maintainability:**
  - These website is capable to secure the data.
- **Reliability:**
  - Our website performs consistently according to its specifications. We provide all Covid information in one Web site.

- **Scalability:**
  - This system can further modified in future as per systems errors or modified frequently as per Covid cases data.
- **Performance:**
  - Our website provide user friendly GUI so user can use easily. We try our best in this website that we cover all the weakness of the current system.
- **Flexibility:**
  - If user wants some more services in our website then we can also add or edit more features.

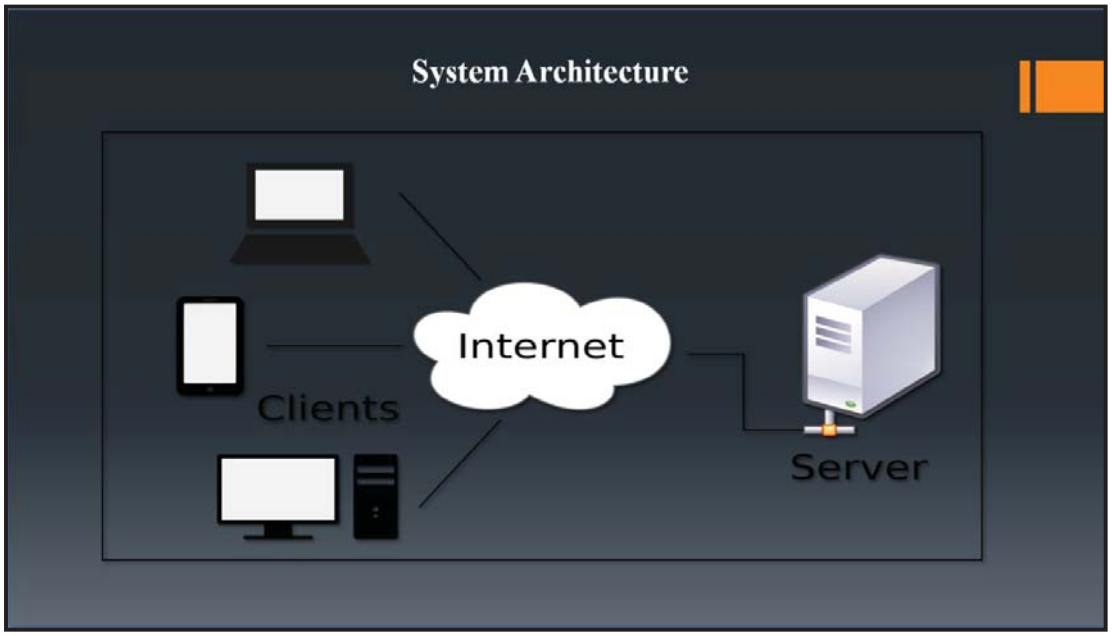
Time Line Chart

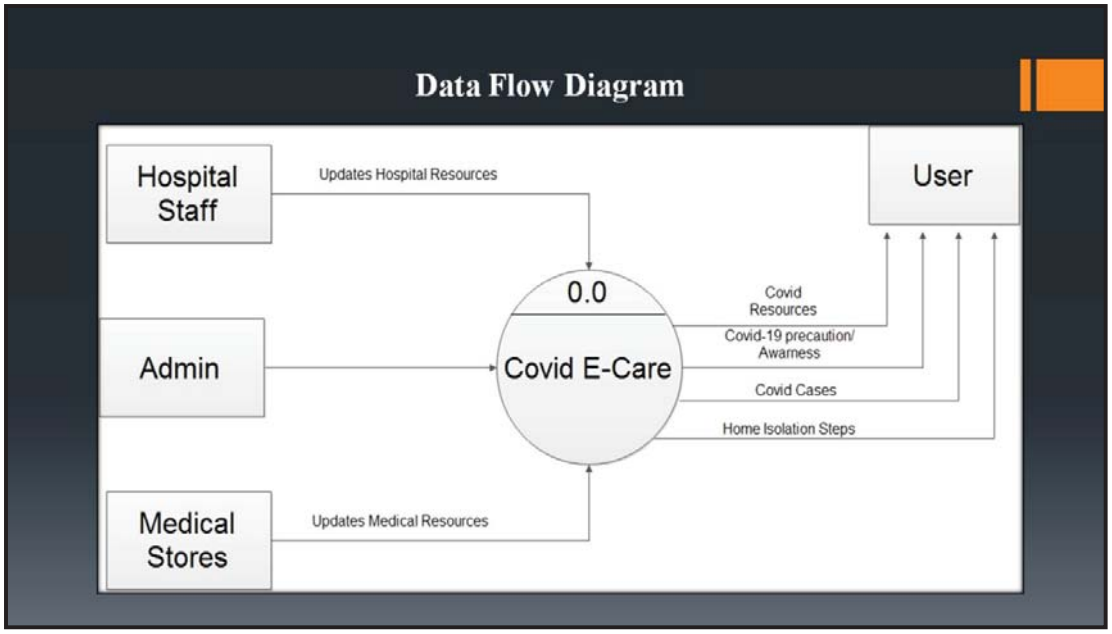




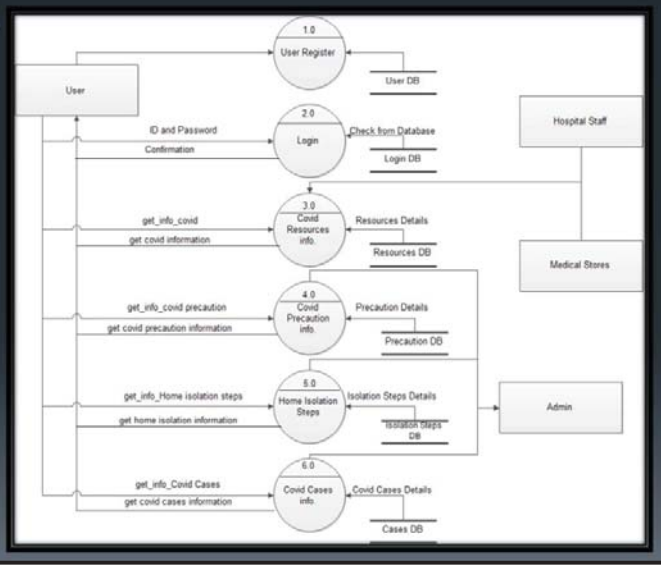
Why Selected This Model:

- We use this model because our all the requirements of the complete system are clearly defined and understood.
- After completion of website work if there is any error found then we easily solve the problem.
- There is no so much risk using this process model.
- We easily make web application.
- We can easily find the error.

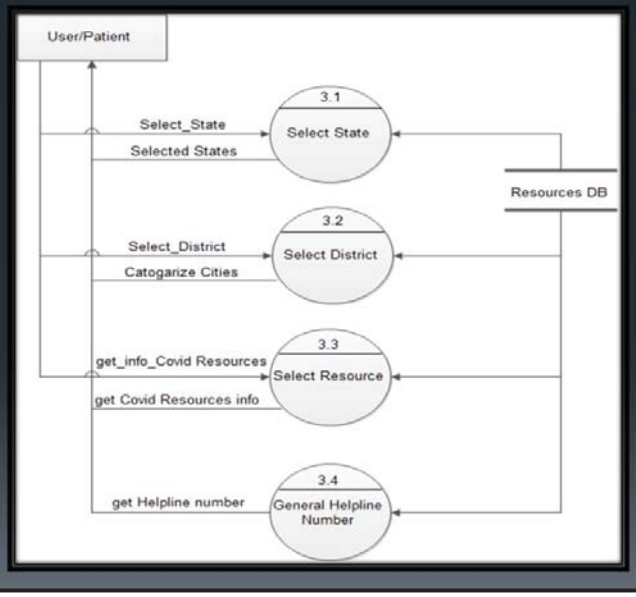

System Architecture
Internet
Clients
Server


Data Flow Diagram
Hospital Staff
Updates Hospital Resources
User
0.0
Admin
Covid E-Care
Covid Resources
Covid-19 precaution/ Awarness
Covid Cases
Home Isolation Steps
Medical Stores
Updates Medical Resources

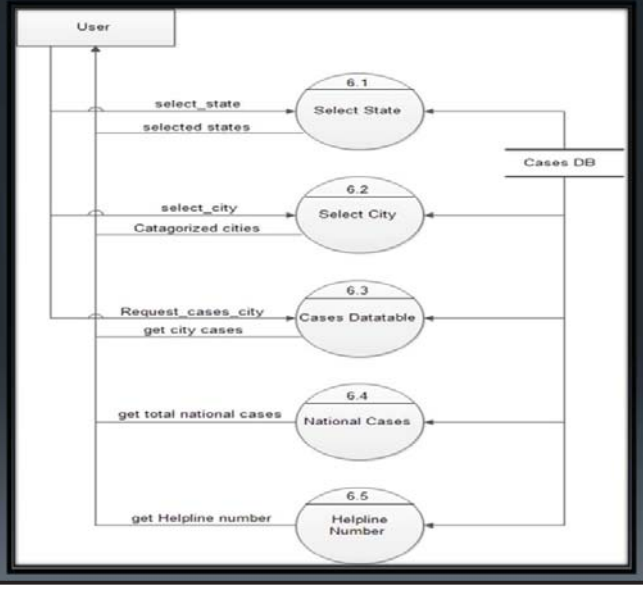
- Level-1 Diagram



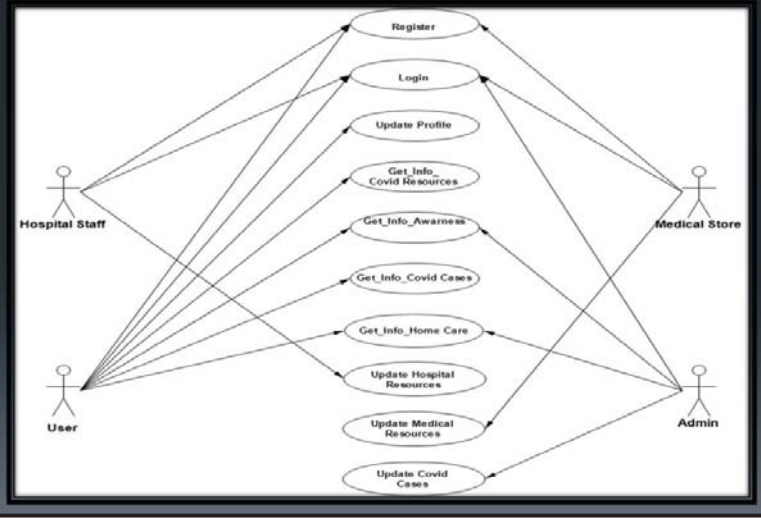
- Level-2.1 Diagram



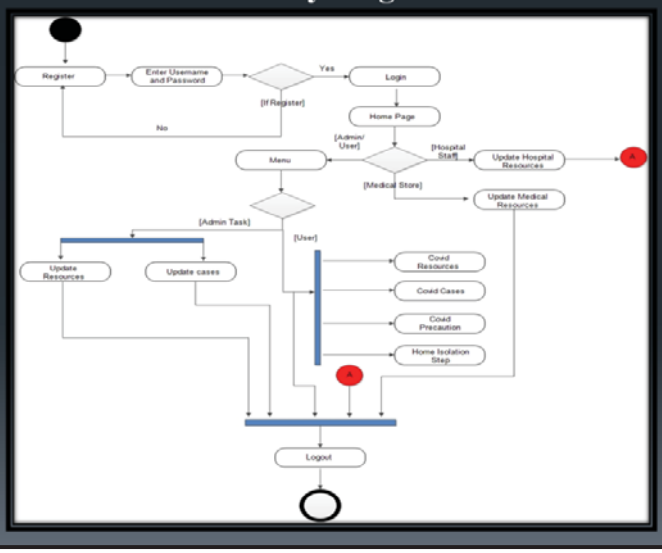
- Level-2.2 Diagram



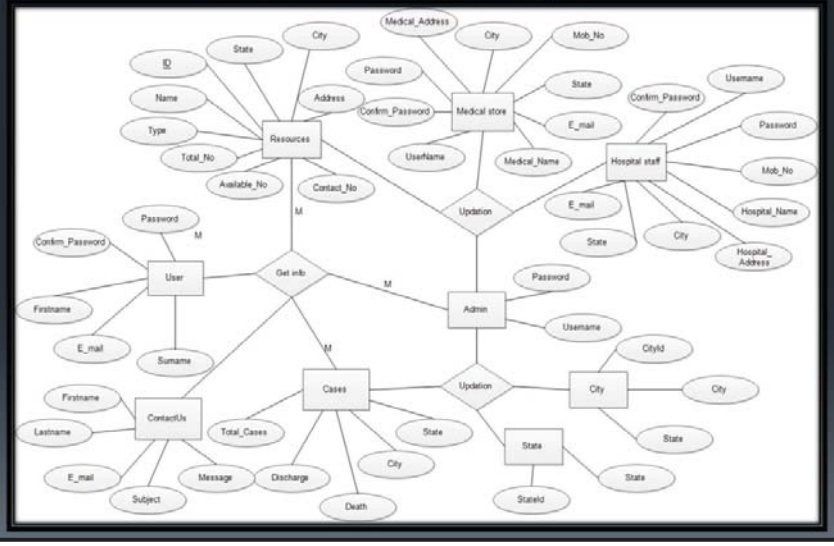
Use-Case Diagram



Activity Diagram



Entity-Relationship Diagram




Home Page
Covid-E-Care
HOME
USER LOGIN
HOSPITAL LOGIN
MEDICAL_STORE LOGIN
ADMIN LOGIN
Search
WELCOME! to
Covid-E-Care
Personal care for your healthy living
Covid-E-Care
This is only for you &
that helps you anytime and anywhere 24x7
copyright ©2022 covid-e-care. designed by @Kaivan @Kishan @Amiras


After Login
Covid-E-Care
HOME
SERVICE
ABOUT US
CONTACT US
Search
WELCOME! to
Covid-E-Care
Personal care for your healthy living
Covid-E-Care
This is only for you &
that helps you anytime and anywhere 24x7
copyright ©2022 covid-e-care. designed by @Kaivan @Kishan @Amiras

Test Cases

➢Login Test Case:

Pre-Condition: User has valid username and password.						
Dependencies: User have not registration.						
Step	**Test Steps**	**Test Data**	**Expected Result**	**Actual Result**	**Status (pass/fail)**	**Notes**
1	Naviagate to Login Page		The Username or password doesn't match to our database.	Reject (first registration to our website	Pass	
2	Enter E-mail	kaivan@gmail .com				
3	Enter Password	Kaivan123				
4	Click on login					
Post-condition: User first registration our website.						

Benefits of Our website

➢Our web application allows covid –patients and his/her family multi-purpose use by providing many services.

➢This provides various needed services such as Hospital Info, Medical Store Info, Vaccination as well as Covid Testing place.

➢Other city as well as particular city person can gets all type information which is high required for Covid Patient and for his/her.

➢If any user has any type of doubt then he/she can contact us using our website.

➢The user does not have to go to different websites for different service. So it save some times of user.

➢We cannot use user's private data to any other place. So we can allow security to the user.

➢Our website has simple GUI so user can easily use it.

Future Enhancements

- We don't provide all the services related to covid-19.
- In this, we only provide some state and some city to particular city.
- User has to use desktop or laptop for use our web application so in future we can make one application for Mobile-User.
- In future, we can add some more security for user to update his/her password using the OTP or any verification code.

Thank You