

A Project - Report

on

Smart City Using Deep Learning and Cyber security

*Submitted in partial fulfillment of the
requirement for the award of the degree of*

B.Tech (CSE)



(Established under Galgotias University Uttar Pradesh Act No. 14 of 2011)

**Under The Supervision of
Name of Supervisor: Ms. Heena Khera
Designation: Guide**

Submitted By

Name of Student/s
Abhay Mishra (20SCSE1010684)
Kunal Kaushik (20SCSE1010865)

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
GALGOTIAS UNIVERSITY, GREATER NOIDA
INDIA

December , 2021



**SCHOOL OF COMPUTING SCIENCE AND
ENGINEERING
GALGOTIAS UNIVERSITY, GREATER NOIDA**

CANDIDATE'S DECLARATION

We hereby certify that the work which is being presented in the thesis/project/dissertation, entitled "**Smart hospital management System**" in partial fulfillment of the requirements for the award of the **Bachelor of engineering in computer science** submitted in the School of Computing Science and Engineering of Galgotias University, Greater Noida, is an original work carried out during the period of August 2021Year to December 2021, under the supervision of **Ms.Heena Khera, Assistant Professor**, Department of Computer Science and Engineering/Computer Application and Information and Science, of School of Computing Science and Engineering , Galgotias University, Greater Noida.

The matter presented in the thesis/project/dissertation has not been submitted by us for the award of any other degree of this or any other places.

Abhay Mishra (20SCSe1010684)
Kunal kaushik(20SCSE1010865)

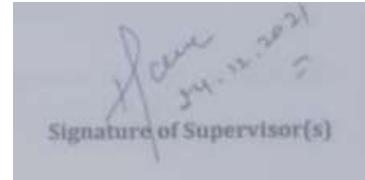
This is to certify that the above statement made by the candidates is correct to the best of my knowledge.


Ms.Heena Khera
Assistant Professor

CERTIFICATE

The Final Project Viva-Voce examination of **20SCSE1010865 – KUNAL KAUSHIK,**
20SCSE1010684 – ABHAY MISHRA has been held on 21/12/2021-25/12/2021 and his/her
work is recommended for the award of **BACHELOR OF TECHNOLOGY IN COMPUTER
SCIENCE AND ENGINEERING.**

Signature of Examiner(s)



Signature of Project Coordinator

Date: 22 December, 2021

Place: Greater Noida

Signature of Dean

Acknowledgement

One of the pleasant aspects of preparing a project report is the opportunity to thank those who have contributed to make this project possible.

We are extremely thankful to **Ast.Prof. Ms.Heena Khera** mam whose active interest in the project &insight helped us to formulate, redefine implement our approach to the project Furthermore.

I would also like to acknowledge with much appreciation the crucial role of my teammates and all those who have guided and helped.

Abstract

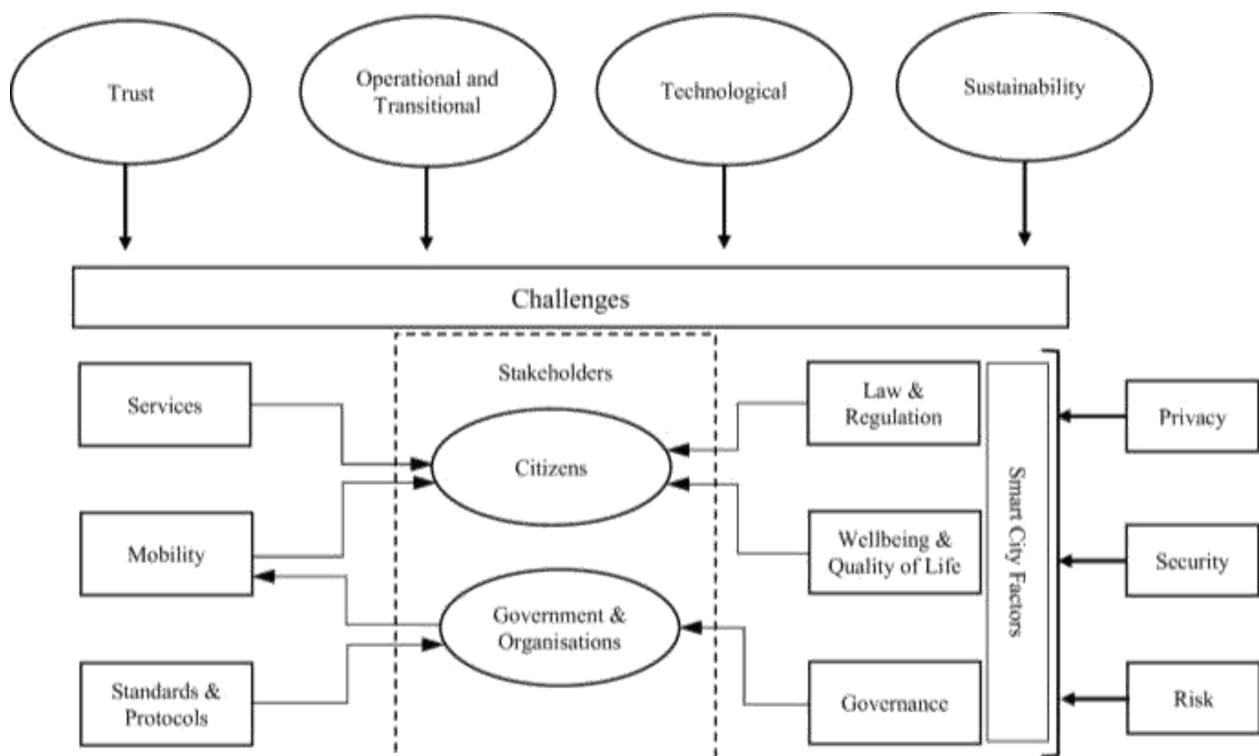
Nowadays, a couple of towns around the area have would in general apply new innovation and come to be brilliant city. New innovations work on awesome of inhabitants' presence. be that as it may, utilizing any time increments new issues and requesting circumstances. In a shrewd city, the inclined development of a person or association can situated the entire city at possibility. due to the dependence of various parts of shrewd towns on measurements and correspondence age, digital security requesting circumstances (which incorporates information spillage and malignant digital assaults) in this field influence savvy towns direct. subsequently, a decent method for answering to the excited acknowledgment of worldwide savvy city innovation, digital security should increment in equivalent course. The point of this paper is review and plate on clarification of digital security, sharp urban communities, and study of accessible pertinent writing on wellbeing in that time. For this purpose, the gift investigate centers around the 4 most significant added substances of a cunning city.

Chapter 1

Introduction

A shrewd city is a metropolitan advancement utilizing Information and Communication Technology (ICT) and Internet of Things (IoT) to give helpful data to adequately oversee assets and resources. This incorporates information gathered from residents and mechanical gadgets, that are handled and dissected to screen and oversee traffic and transport frameworks, power plants, water supply organizations, garbage removal, and so on

Additionally called eco-city or maintainable city, the shrewd city intends to work on the nature of metropolitan administrations or lessen its expenses. It stands apart for its specificities: shrewd administration, way of life, portability, lodging, just as a savvy economy. Their principle objective is to accommodate mechanical development with the monetary, social and biological difficulties of the city of tomorrow. Their leitmotiv is the personal satisfaction: how to live better together while regarding our current circumstance.



Problem Formulation:

Every new technology or urban system gives a new opportunity to cyber attackers. For example, many communications between traffic control systems and traffic lights in intelligent traffic control systems take place without any encryption or authentication, allowing the attacker to modify or forge data or An attacker could insert new consumption messages or repeat old consumption messages of a device into the smart meter and impose a financial charge on the customer for energy that has not been Consumed (Kermani et al., 2021).

Tools and Technology Used:

- Deep Learning:** In a smart city, there are many Internet of Things sensors at various data collection places to collect information on traffic, citizen mobility, and drainage, so that the perceptions gained from this data can be benefits to operate assets and resources (Basori et al., 2019).
- **DL** is widely used on information collected by researchers.
- **Cyber-security** : means protecting systems, networks and programs against digital attacks. Accessing, alteration and destruction of important information, extortion of money from users and disruption of business processes are the goals of cyber-attacks

Chapter 2 Literature Survey

. As of now, the medical care as one of the need improvement regions for the state requires unique consideration in the change to the imaginative administration models dependent on the utilization of cutting edge clinical ideas and computerized advances. Subsequently, the change to the SmartHospital model and the arrangement of a suitable building arrangement become genuine for wellbeing associations which key assignment is the change to the computerized space and reinforcing their situations in the clinical benefits market. Preceding beginning the advancement of the Smart

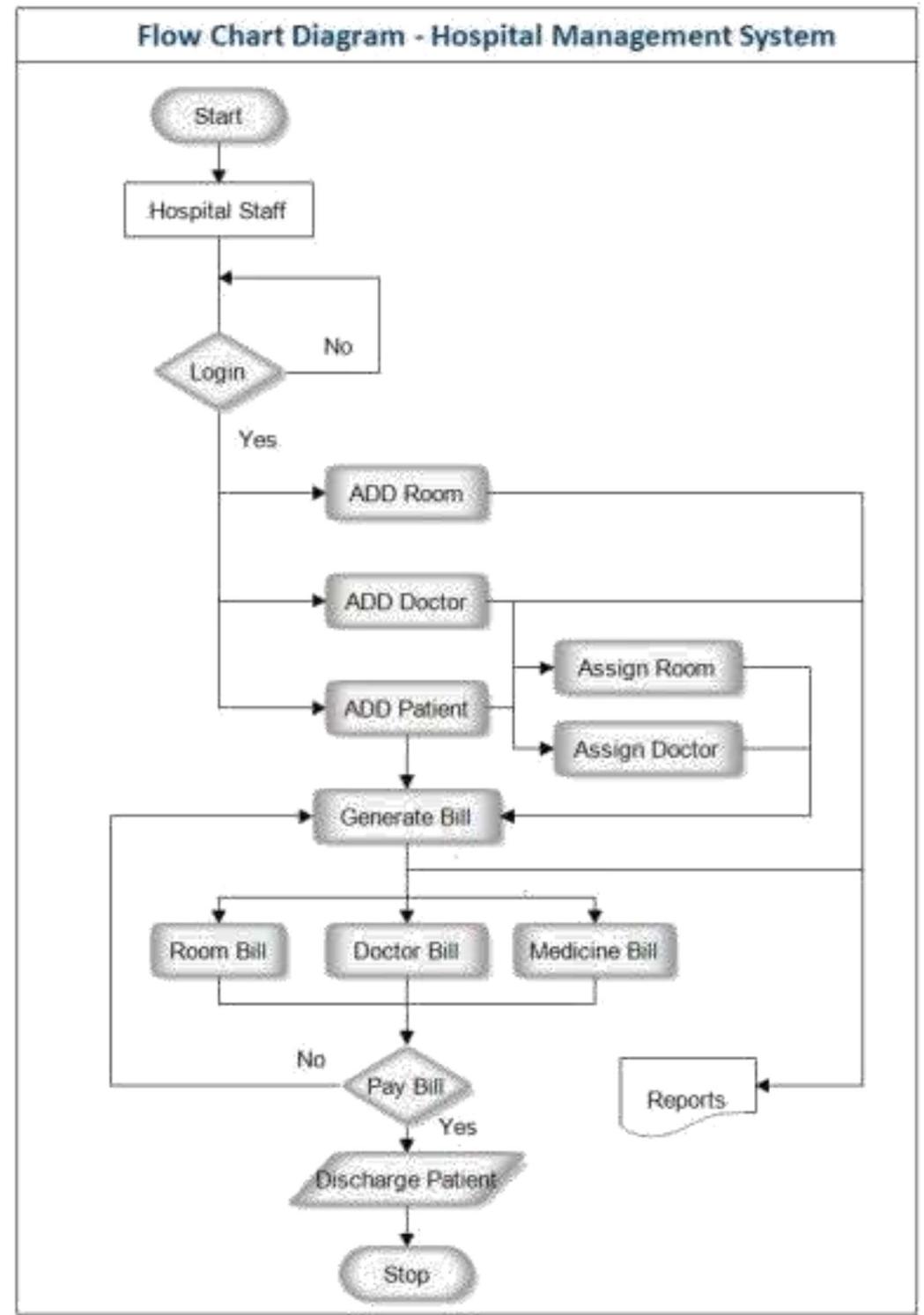
Emergency clinic design model as applied to the particular wellbeing association, it is prudent to utilize a reference model that will consider the essential business and IT necessities of, as far as possible and utilized innovations. The making of the reference SmartHospital design arrangement is gone before by a preliminary stage that permits uncovering the design and cutoff necessities. The article proposes the motivator expansion based on which the prerequisites and cutoff points are figured for the reference model of the SmartHospital structural arrangement.

The Ministry of Healthcare of the Russian Federation that is a financial and lawful component for control for the advancement of the whole medical services framework and individual wellbeing centers. The Ministry of Healthcare of the Russian Federation controls for a measure of financing wellbeing centers, the advancement methodology of the whole medical care framework, considering the social and financial circumstance in the country, the world medical care advancement patterns, and so forth ;

The Suppliers of clinical gear and medications inspired by execution of esteem and real IT based customized medication ideas by wellbeing centers.

Insurance agencies keen on creating associations with wellbeing centers to carry out different medical coverage courses

Chapter 3 Working of Project



UML Diagram

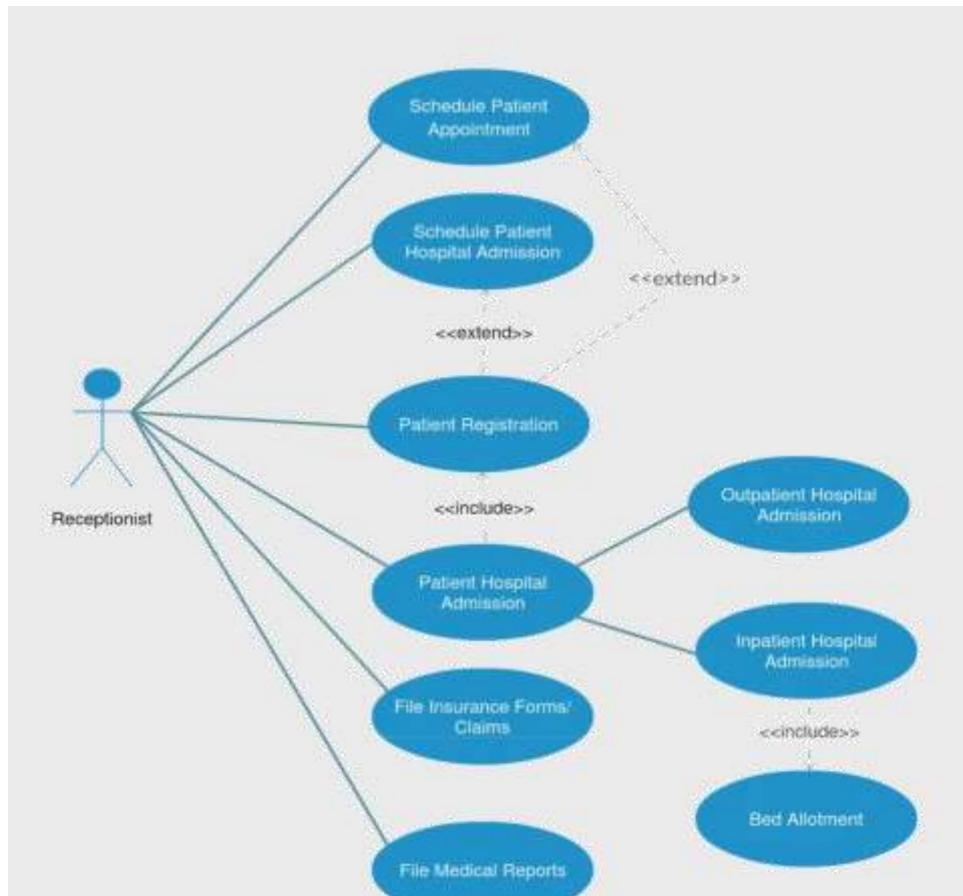
A savvy emergency clinic ought to be worked with an exact downplaying of the requirements of its clinical staff and patients. Likewise, a savvy emergency clinic needs to enough deal with various testing situations including pandemics. Attributes of a shrewd medical clinic incorporate individuals, innovation and space

For brilliant medical clinics to work, there's nobody size-fits-all methodology. It takes a perplexing joining of heap advances — that is, having frameworks "talk" to each other while engrossing and responding to information. Dissimilar clinical, IT and office innovations including warming, ventilation, cooling, energy, fire anticipation, nurture call, patient wards, working theaters, security, communication and others need to meet up for savvy emergency clinics to work.

Use-Case diagram

This system is used by 3 types of users. They are

- Admin , Doctors ,Users(patient)



Doctors Appointment



Data Flow Diagram

The DFD is also known as the bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of the input data to the system, various processing carried out in these data and the output data generated by the system. Starting with a set of high-level functions that a system performance of DFD model in hierarchically it represents various sub functions. In a normal convention, logical DFD can be completed using only four notations:

- Represents source or destination of data
- Represents Data Flow
- Represents a process that transforms incoming data into outgoing data
- Represents Data Source

Function Symbol

A function is represented using a circle. This symbol is called a process or a bubble. Bubbles are annotated with the names of corresponding functions.

External Entity Symbol

An external entity such as a librarian, library member etc is represented by a rectangle. The external entities are essentially those physical entities external to the software system, which interact with the system by inputting data to the system or by consuming the data produced by the system.

Data Flow Symbol

A directed arc or an arrow is used as a Data Flow Symbol. This represents the data flow occurring between two processes or between an external entity and a

process in direction of the Data Flow Arrow. Data Flow symbols are annotated with corresponding data names.

Data Store Symbol

A Data Store represents a logical file; it is represented using two parallel lines. A logical file can represent either Data Store Symbol, which can represent either data structure or a physical file on disk.

Output Symbol

The output symbol is used when a hardcopy is produced and the user of the copies cannot be clearly specified or there are several users of the output. The DFD at the simplest level is referred to as the Context Analysis Diagram. These are expanded by level, each explaining in process in detail. Processes are numbered for easy identification and are normally labeled in block letters. Each data flow is labeled for easy understanding.

Context Diagram

The context diagram is the most abstract data flow representation of a system. It represents the entire system as a single bubble. This bubble is labeled according to the main function of the system. The various external entities with the system interact and the data input to the system and the data output from the system are represented as incoming and outgoing arrows. These data flow arrows should be annotated with the corresponding data names.

Level-1 DFD

To develop the LEVEL-1 DFD, examine the high level functional requirements. It is between three to seven high-level functional requirements then these can be directly represented as bubbles as in the LEVEL-1 DFD. We can examine the input data to these functions and the data output by these functions, and represent them appropriately in the diagram.

Procedure to develop a DFD model of a system:

1. The SRS document is examined to determine:

- Different high-level functions that the system need to perform.
- Data input to every high-level function
- Data output from every high-level functions
- Interactions among the identified high-level functions

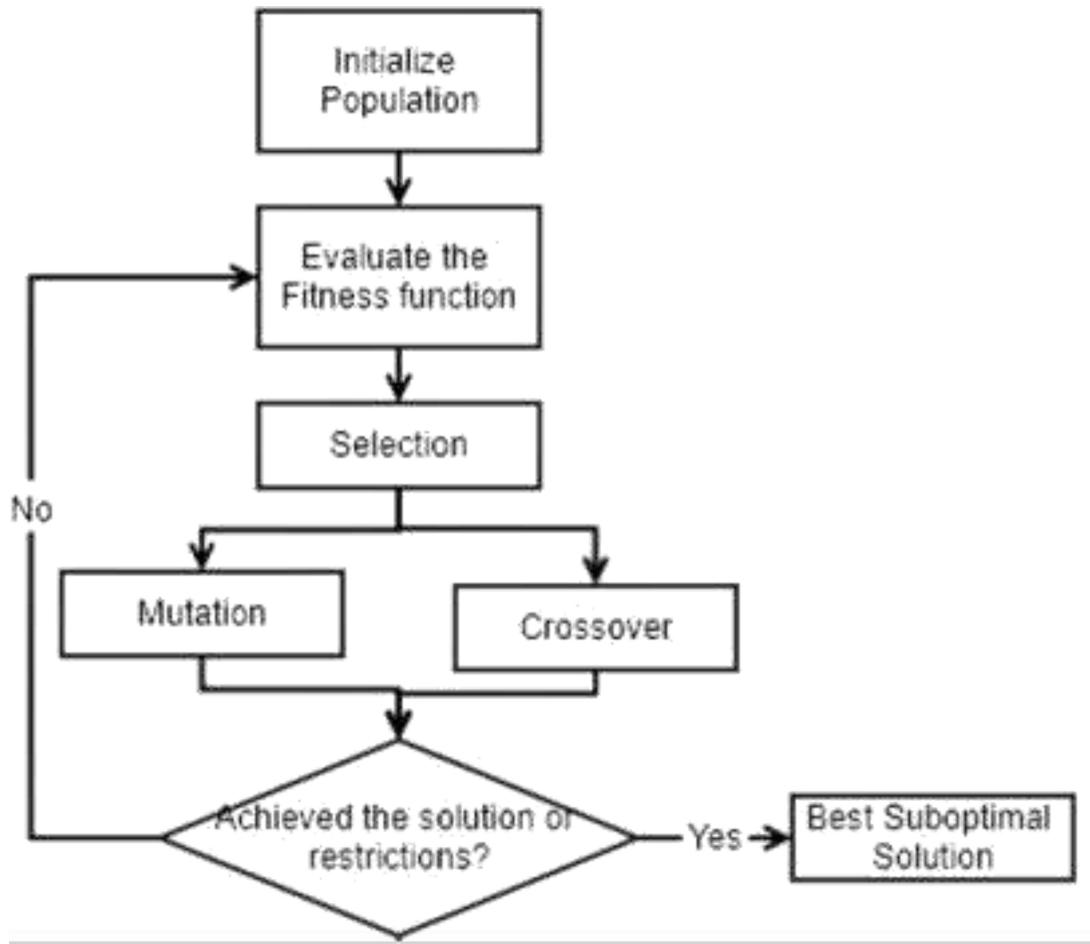
These aspects of the high-level functions are then represented in a diagrammatic form. This forms the top level Data Flow Diagram, usually called DFD.

2. The high-level functions described in the SRS Documents, and then each of the high- level functions can be represented in form of a bubble. Each high-level function is decomposed into constituent sub functions through the following set of activities.

- Different sub functions of the high-level functions are identified.
- Data input to each of these sub functions is identified.
- Data output from each of these sub functions is identified.

Interactions among these sub functions are identified. These aspects are then represented in a diagrammatic form using a DFD.

3. Step three is repeated recursively for each sub function until a simple algorithm can represent a sub function



Database design

The system is implemented in such a way that all the valid information's are stored in the database. Database design converts the data model developed in logical designing to database definition. This is supported by database software. The management of data involves both the definition of structure of the storage of information and provision of mechanism for the manipulation of information. In addition database system must provide safety of information handle, despite the system crashes due to attempts of unauthorized access.

A database is a collection of interrelated data stored with minimum redundancy to serve many users quickly and efficiently. In database design, several views of data must be considered along with the person who uses them. The logical view is what the data look like, regardless of how they are stored. The physical view is the way data exist in physical storage. Tables are carefully designed aiming to achieve its main objectives ie, to make information access easy, quick, inexpensive and flexible for user.

Admin

- Login/Logout
- Manage Hospital
- Manage Department
- Manage patient
- Manage Time
- Reports
- Manage Users
- Admin Panel

Doctors

- Dashboard (Displays Time scheduled for the current date and etc.)
- Patient Time Management
- Preview Student Details

Patient

- Dashboard
- Manage Appointment
- Manage profile

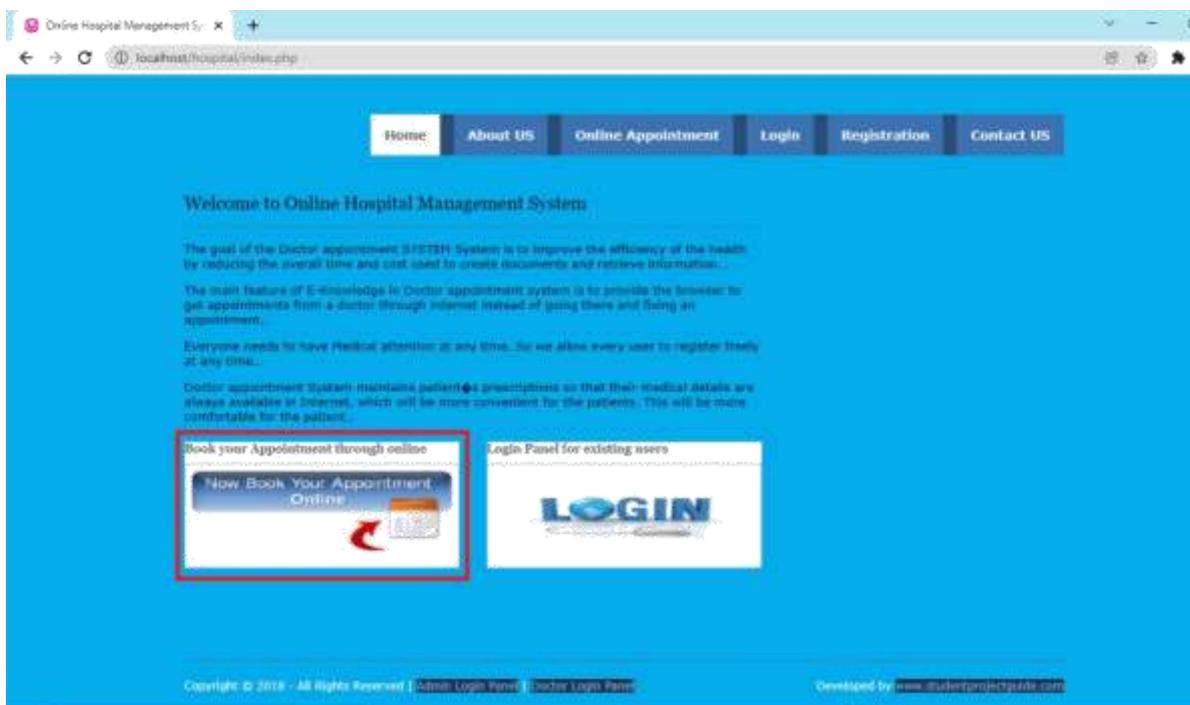
Coding

Front page of website:

In the front page of Web site the we have two excess:

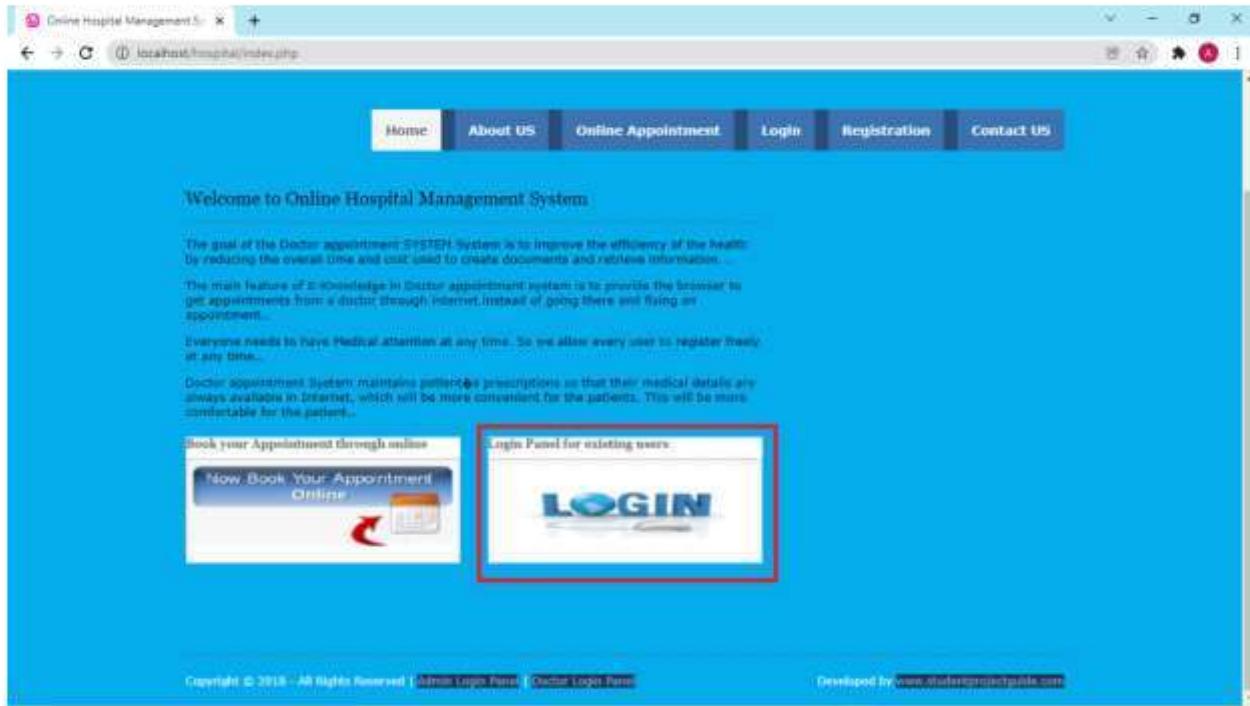
1. Direct appointment

```
<li>
  <h2>Book your Appointment through online </h2>
  <p class="imgholder"><a href="patientappointment.php"></a></p>
</li>
```



2. Login and have a Membership

```
<li
  class="last">
  <h2>Login Panel for existing users</h2>
  <p class="imgholder"><a href="patientlogin.php"></a></p>
</li>
```



Online Appointment

```
</div><scr
ipt
src="https://ajax.googleapis.com/ajax/libs/jquery/3.1/jquery.min.js"></sc
ript>

<div class="wrapper col2">
<div id="breadcrumb">
<ul>
<li class="first">Add New Appointment</li></ul>
</div>
</div>
<div class="wrapper col4">
<div id="container">
<form method="post" action="" name="frmPATAPP" onSubmit="return validateForm()">
<table width="532" border="3">
```

```
<tbody>
<tr>
<td width="34%>Patient Name</td>
<td width="66%><input type="text" name="patiente" id="patiente" value="" ></td>
</tr>
<tr>
<td height="62">Address</td>
<td><textarea name="textarea" id="textarea" ></textarea></td>
</tr>
<tr>
<td>City</td>
<td><input type="text" name="city" id="city" value="" ></td>
</tr>
<tr>
<td>Mobile Number</td>
<td><input type="text" name="mobileno" id="mobileno" value="" ></td>
</tr>
<tr>
<td>Login-ID</td>
<td><input type="text" name="loginid" id="loginid" value="" ></td>
</tr>
<tr>
<td>Password</td>
<td><input type="password" name="password" id="password" value="" ></td>
</tr>
<tr>
<td>Gender</td>
<td>
<select name="select6" id="select6">
<option value="">Select</option>
<option value='Male'>Male</option><option value='Female'>Female</option>
</select>
</td>
</tr>
<tr>
<td>DOB</td>
<td><input type="date" name="dob" id="dob" value="" ></td>
```

```

</tr>
<tr>
<td><strong>Enter Appointment Date</strong></td>
<td><input type="date" min="2021-12-23" name="appointmentdate" id="appointmentdate"></td>
</tr>
<tr>
<td><strong>Enter Appointment Time</strong></td>
<td><input type="time" name="appointmenttime" id="appointmenttime"></td>
</tr>
<tr>
<td><strong>Department</strong></td>
<td>
<select name="department" id="department" onchange="loaddoctor(this.value)">
<option value="">Select department</option>
<option value='11'>Physician</option><option value='12'>Children doctor</option><option value='13'>General Medicne1</option><option value='14'>ENT Specialist</option><option value='15'>Neurologist</option><option value='16'>Surgery</option><option value='17'>Pediatrics</option><option value='18'>Pharmacy</option><option value='19'>Laboratory and Blood bank</option><option value='20'>Physiotherapy</option><option value='41'></option><option value='42'>physician11</option><option value='43'>shricharan</option> </select>
</td>
</tr>
<tr>
<td><strong>Doctors</strong></td>
<td>
<div id="divdoc">
<select name="doct" id="doct">
<option value="">Select doctor</option>
</select>
</div>
</td>
</tr>
<tr>
<td><strong>Appointment reason</strong></td>
<td><textarea name="app_reason"></textarea></td>
</tr>
<tr>

```

```

<td colspan="2" align="center"><input type="submit" name="submit"
id="submit" value="Submit" /></td>
</tr>
</tbody>

</form>
<p>&nbsp;</p>
</div>
</div>
</div>

```

The screenshot shows a web-based appointment booking system. At the top, there's a navigation bar with links for Home, About Us, Online Appointment (which is the active tab), Login, Registration, and Contact Us. Below the navigation is a title 'Add New Appointment'. The main area contains a form with the following fields:

- Patient Name
- Address
- City
- Mobile Number
- Login ID
- Password
- Gender (with a dropdown menu showing 'Select')
- DOB (with a date picker showing '2000/01/01')
- Enter Appointment Date (with a date picker showing '2000/01/01')
- Enter Appointment Time (with a time picker showing '10:00')
- Department (with a dropdown menu showing 'Select department')
- Doctor (with a dropdown menu showing 'Select doctor')
- Appointment reason

At the bottom right of the form is a green 'Submit' button.

Membership or Login patient:

- The membership patient have a many type of facility.
- Own account
- perception section,
- appointments section,
- Record of treatment
- And etc.

Login Page:

```
</div><div  
class="wrapp  
er col2">  
    <div id="breadcrumb">  
        <ul>  
            <li class="first">Patient Login panel</li></ul>  
    </div>  
    </div>  
    <div class="wrapper col4">  
        <div id="container">  
            <h1>Kindly login to the website by entering Login ID and Password..</h1>  
            <form method="post" action="" name="frmpatlogin" onSubmit="return  
validateform()">  
                <table width="200" border="3">  
                    <tbody>  
                        <tr>  
                            <td width="34%">Login ID</td>  
                            <td width="66%"><input type="text" name="loginid" id="loginid" /></td>  
                        </tr>  
                        <tr>  
                            <td>Password</td>  
                            <td><input type="password" name="password" id="password" /></td>  
                        </tr>  
                        <tr>  
                            <td height="36" colspan="2" align="center"><input type="submit"  
name="submit" id="submit" value="Login" /></td>  
                        </tr>  
                        <tr>  
                            <td height="36" colspan="2" align="center"><strong>New user<br>  
                            <a href="patient.php">Click Here</a> to Register </strong> | <a  
                            href="patientforgotpassword.php"><strong>Forgot Password</strong></a></td>  
                        </tr>  
                    </tbody>  
                </table>  
            </form>  
            <p>&nbsp;</p>
```

```

</div>
</div>
</div>
<div class="clear"></div>
</div>
</div>
<div class="wrapper col5">
<div id="footer">
<div id="copyright">
<p class="fl_left">Copyright &copy; 2018 - All Rights Reserved | <a href="adminlogin.php">Admin Login Panel</a> | <a href="doctorlogin.php">Doctor Login Panel</a></p>
<p class="fl_right">Developed by <a href="https://www.studentprojectguide.com">www.studentprojectguide.com</a>
</p>
<br class="clear" />
</div>
<div class="clear"></div>
</div>
</div>
</body>
</html><script type="application/javascript">
var alphaExp = /^[a-zA-Z]+$/; //Variable to validate only alphabets
var alphaspaceExp = /^[a-zA-Z\s]+$/; //Variable to validate only alphabets and space
var numericExpression = /^[0-9]+$/; //Variable to validate only numbers
var alphanumericExp = /^[0-9a-zA-Z]+$/; //Variable to validate numbers and alphabets
var emailExp = /^[w\-\.\+]+\@[a-zA-Z0-9\.\-]+\.[a-zA-z0-9]{2,4}\$/;
//Variable to validate Email ID

function validateform()
{
if(document.frmpatlogin.loginid.value == "")
{
alert("Login ID should not be empty..");
document.frmpatlogin.loginid.focus();
return false;
}
else if(document.frmpatlogin.password.value == "")

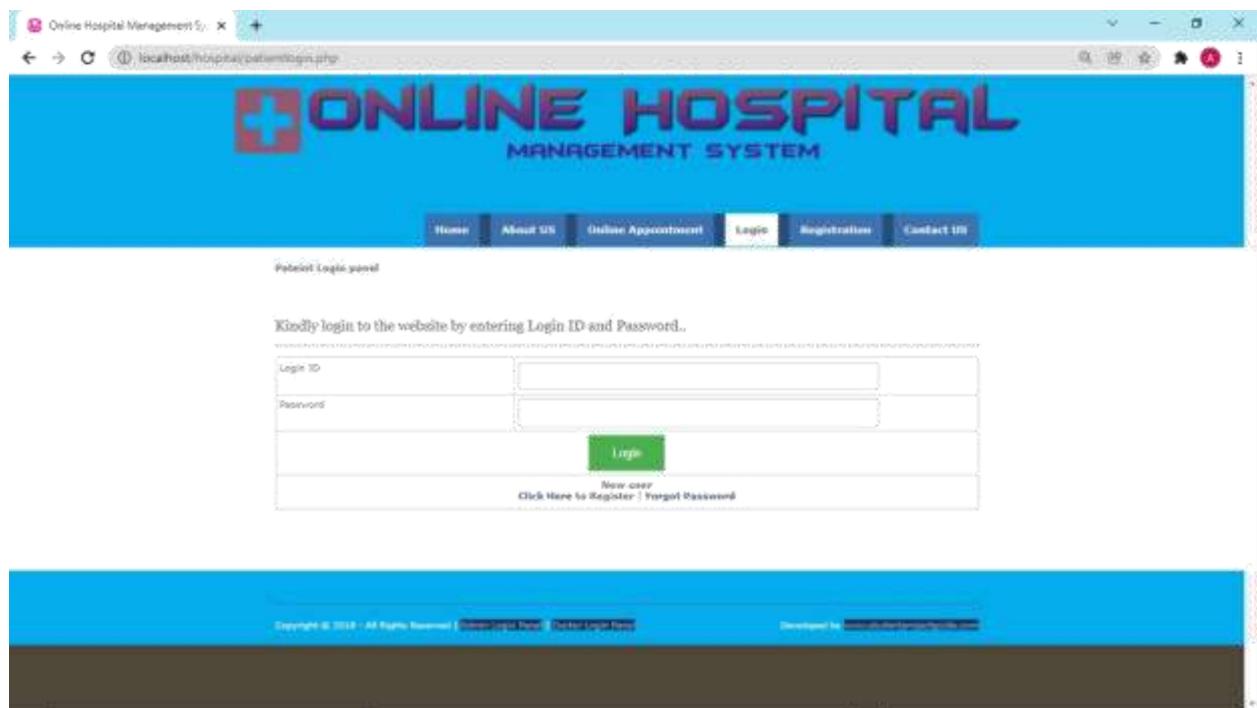
```

```

{
    alert("Password should not be empty..");
    document.frmpatlogin.password.focus();
    return false;
}
else if(document.frmpatlogin.password.value.length < 8)
{
    alert("Password length should be more than 8 characters..."); 
    document.frmpatlogin.password.focus(); return false;
}

}
</script>

```



Registration page:

```

</div>
>
<div class="wrapper col2">
<div id="breadcrumb">

```

```
<ul>
<li class="first">Add New Patient</li></ul>
</div>
</div>
<div class="wrapper col4">
<div id="container">
<h1>Patient profile Registration Panel</h1>
<form method="post" action="" name="frmpatient" onSubmit="return validateform()">
<table width="200" border="3">
<tbody>
<tr>
<td width="34%">Patient Name</td>
<td width="66%"><input type="text" name="patientname" id="patientname" value="" /></td>
</tr>
<tr>
<td>Address</td>
<td><textarea name="address" id="address" cols="45" rows="5"></textarea></td>
</tr>
<tr>
<td>Mobile Number</td>
<td><input type="text" name="mobilenumber" id="mobilenumber" value="" /></td>
</tr>
<tr>
<td>City</td>
<td><input type="text" name="city" id="city" value="" /></td>
</tr>
<tr>
<td>PIN Code</td>
<td><input type="text" name="pincode" id="pincode" value="" /></td>
</tr>
<tr>
<td>Login ID</td>
<td><input type="text" name="loginid" id="loginid" value="" /></td>
</tr>
<tr>
<td>Password</td>
<td><input type="password" name="password" id="password" value="" /></td>
```

```
</tr>
<tr>
<td>Confirm Password</td>
<td><input type="password" name="confirmpassword" id="confirmpassword" value="" /></td>
</tr>
<tr>
<td>Blood Group</td>
<td><select name="select2" id="select2">
<option value="">Select</option>
<option value='A+'>A+</option><option value='A-'>A-</option><option value='B+'>B+</option><option value='B-'>B-</option><option value='O+'>O+</option><option value='O-'>O-</option><option value='AB+'>AB+</option><option value='AB-'>AB-</option> </select></td>
</tr>
<tr>
<td>Gender</td>
<td><select name="select3" id="select3">
<option value="">Select</option>
<option value='MALE'>MALE</option><option value='FEMALE'>FEMALE</option>
</select></td>
</tr>
<tr>
<td>Date Of Birth</td>
<td><input type="date" name="dateofbirth" max="2021-12-23" id="dateofbirth" value="" /></td>
</tr>
<tr>
<td colspan="2" align="center"><input type="submit" name="submit" id="submit" value="Submit" /></td>
</tr>
</tbody>
</table>
</form>
<p>&nbsp;</p>
</div>
</div>
</div>
<div class="clear"></div>
```

```
</div>
</div>
<div class="wrapper col5">
<div id="footer">
<div id="copyright">
<p class="fl_left">Copyright © 2018 - All Rights Reserved | <a href="adminlogin.php">Admin Login Panel</a> | <a href="doctorlogin.php">Doctor Login Panel</a></p>
<p class="fl_right">Developed by <a href="https://www.studentprojectguide.com">www.studentprojectguide.com</a></p>
<br class="clear" />
</div>
<div class="clear"></div>
</div>
</div>
</body>
</html><script type="application/javascript">
var alphaExp = /^[a-zA-Z]+$/; //Variable to validate only alphabets
var alphaspaceExp = /^[a-zA-Z\s]+$/; //Variable to validate only alphabets and space
var numericExpression = /^[0-9]+$/; //Variable to validate only numbers
var alphanumericExp = /^[0-9a-zA-Z]+$/; //Variable to validate numbers and alphabets
var emailExp = /^[w\.\.]+\@[a-zA-Z0-9\.\-]+\.[a-zA-z0-9]{2,4}\$/; //Variable to validate Email ID

function validateform()
{
if(document.frmpatient.patientname.value == "")
{
alert("Patient name should not be empty..");
document.frmpatient.patientname.focus();
return false;
}
else if(!document.frmpatient.patientname.value.match(alphaspaceExp))
{
alert("Patient name not valid..");
document.frmpatient.patientname.focus();
return false;
}
else if(document.frmpatient.admissiondate.value == "")
```

```
{  
alert("Admission date should not be empty..");  
document.frmpatient.admissiondate.focus();  
return false;  
}  
else if(document.frmpatient.admissiontme.value == "")  
{  
alert("Admission time should not be empty..");  
document.frmpatient.admissiontme.focus();  
return false;  
}  
else if(document.frmpatient.address.value == "")  
{  
alert("Address should not be empty..");  
document.frmpatient.address.focus();  
return false;  
}  
else if(document.frmpatient.mobilenumber.value == "")  
{  
alert("Mobile number should not be empty..");  
document.frmpatient.mobilenumber.focus();  
return false;  
}  
else if(!document.frmpatient.mobilenumber.value.match(numericExpression))  
{  
alert("Mobile number not valid..");  
document.frmpatient.mobilenumber.focus();  
return false;  
}  
else if(document.frmpatient.city.value == "")  
{  
alert("City should not be empty..");  
document.frmpatient.city.focus();  
return false;  
}  
else if(!document.frmpatient.city.value.match(alphaspaceExp))  
{  
alert("City not valid..");
```

```
document.frmpatient.city.focus();
return false;
}
else if(document.frmpatient.pincode.value == "")
{
alert("Pincode should not be empty..");
document.frmpatient.pincode.focus();
return false;
}
else if(!document.frmpatient.pincode.value.match(numericExpression))
{
alert("Pincode not valid..");
document.frmpatient.pincode.focus();
return false;
}
else if(document.frmpatient.loginid.value == "")
{
alert("Login ID should not be empty..");
document.frmpatient.loginid.focus();
return false;
}
else if(!document.frmpatient.loginid.value.match(alphanumericExp))
{
alert("Login ID not valid..");
document.frmpatient.loginid.focus();
return false;
}
else if(document.frmpatient.password.value == "")
{
alert("Password should not be empty..");
document.frmpatient.password.focus();
return false;
}
else if(document.frmpatient.password.value.length < 8)
{
alert("Password length should be more than 8 characters...");
```

document.frmpatient.password.focus(); return false;

```
}

else if(document.frmpatient.password.value !=  
document.frmpatient.confirmpassword.value )  
{  
alert("Password and confirm password should be  
equal.."); document.frmpatient.confirmpassword.focus();  
return false;  
}  
else if(document.frmpatient.select2.value == "")  
{  
alert("Blood Group should not be empty..");  
document.frmpatient.select2.focus();  
return false;  
}  
else if(document.frmpatient.select3.value == "")  
{  
alert("Gender should not be empty..");  
document.frmpatient.select3.focus();  
return false;  
}  
else if(document.frmpatient.dateofbirth.value == "")  
{  
alert("Date Of Birth should not be empty..");  
document.frmpatient.dateofbirth.focus();  
return false;  
}  
else if(document.frmpatient.select.value == "" )  
{  
alert("Kindly select the status..");  
document.frmpatient.select.focus();  
return false;  
}  
else  
{  
return true;  
}  
}  
</script>
```

The screenshot shows a web application window titled "Online Hospital Management System". The URL in the address bar is "localhost/hospital/patient.php". The page has a blue header with navigation links: Home, About Us, Online Appointment, Login, Registration, and Contact Us. Below the header, there is a section titled "Patient profile Registration Panel" with a form. The form fields include: Patient Name (text input), Address (text input), Mobile Number (text input), City (text input), PIN Code (text input), Login ID (text input), Password (text input), Confirm Password (text input), Blood Group (dropdown menu), Gender (dropdown menu), Date Of Birth (date input), and a green "Submit" button at the bottom.

Contact Us page:

```
</style>
>
</div><div class="wrapper col2">
<div id="breadcrumb">
<ul>
<li class="first">Contact Us</li>
</ul>
</div>
</div>
<div class="wrapper col4">
<div id="container">
<h6>Our Address</h6>
<p>
Online Hospital Management System , Bangalore<br />
<strong>tel</strong>:080 65110488<br />
<strong>Email ID</strong>: ohms@gmail.com</p>
<h6>Contact Us by entering following<br />
information</h6> <form action="" method="post">
```

```
<p>
<input type="text" name="name" id="name" value="" size="22" required
/> <label for="name"><small>Name (required)</small></label> </p>

<p>
<input type="text" name="email" id="email" value="" size="22" required
/> <label for="email"><small>Mail (required)</small></label> </p>

<p>
<textarea name="comment" id="comment" cols="100%" rows="10"
required></textarea>
<label for="comment" style="display:none;"><small>Comment
(required)</small></label>
</p>
<p>
<input name="submit" type="submit" id="submit" value="Submit Form"
/> &nbsp;
<input name="reset" type="reset" id="reset" tabindex="5" value="Reset Form" />
</p>
</form>
</div>
</div>
<div class="clear"></div>
</div>
</div>
<div class="wrapper col5">
<div id="footer">
<div id="copyright">
<p class="fl_left">Copyright © 2018 - All Rights Reserved | <a
href="adminlogin.php">Admin Login Panel</a> | <a href="doctorlogin.php">Doctor
Login Panel</a></p>
<p class="fl_right">Developed by <a
href="https://www.studentprojectguide.com">www.studentprojectguide.com</a></p>
<br class="clear" />
</div>
<div class="clear"></div>
</div>
</div>
```

The screenshot shows a web browser window titled "Online Hospital Management System". The address bar displays "localhost/hospital/contactus.php". The page has a blue header with navigation links: Home, About Us, Online Appointment, Login, Registration, and Contact Us. Below the header, there is a "Contact Us" section. It includes a "Our Address" field containing the system's details: "Online Hospital Management System - Bangalore", "Tel: 080 987654321", and "Email ID: info@gmail.com". A "Contact Us by entering following information" section follows, featuring three input fields: "Name (Required)" (empty), "Email (Required)" (empty), and a large "Message" area (empty). At the bottom are two green buttons: "Submit Form" and "Reset Form". The footer is blue and contains copyright information: "Copyright © 2018 - All Rights Reserved | Admin Login Page | Doctor Login Page" and "Developed by [www.technoquestindia.com](#)".

Prescription page:

```
<div  
id="mmenu"  
>  
    <li><a  
        href="patientaccount.php">Account</a></li> <li>  
        <a href="#">Appointment</a>  
        <ul>  
            <li><a href="patientappointment.php"  
                style="width:200px;">Add Appointment</a></li>  
            <li><a href="viewappointment.php"  
                style="width:200px;">View Appointments</a></li>  
        </ul>  
    </li>  
    <li>  
        <a href="#">Profile</a>  
    <ul>
```

```
<li><a href="patientprofile.php">View Profile</a></li>
<li><a href="#">patientchangepassword.php">Change Password</a></li>
</ul>
</li>
<li>
<a href="#" #####>Prescription</a>
<ul >
<li><a style="width:200px;" href="#">patviewprescription.php">View Prescription Records</a></li>
</ul>
</li>
<li>
<a href="#" #####>Treatment</a>
<ul>
<li><a href="#">viewtreatmentrecord.php">View Treatment Records</a></li>
</ul>
</li>

<li><a href="#">logout.php">Log Out</a></li>
</div>
</div>
</div>

<div class="wrapper col2">
<div id="breadcrumb">
<ul>
<li class="first">View Prescription</li></ul>
</div>
</div>

<div class="wrapper col4">
<div id="container">
<h1>View prescription record</h1>
<p>&nbsp;</p>
</div>
</div>
</div>

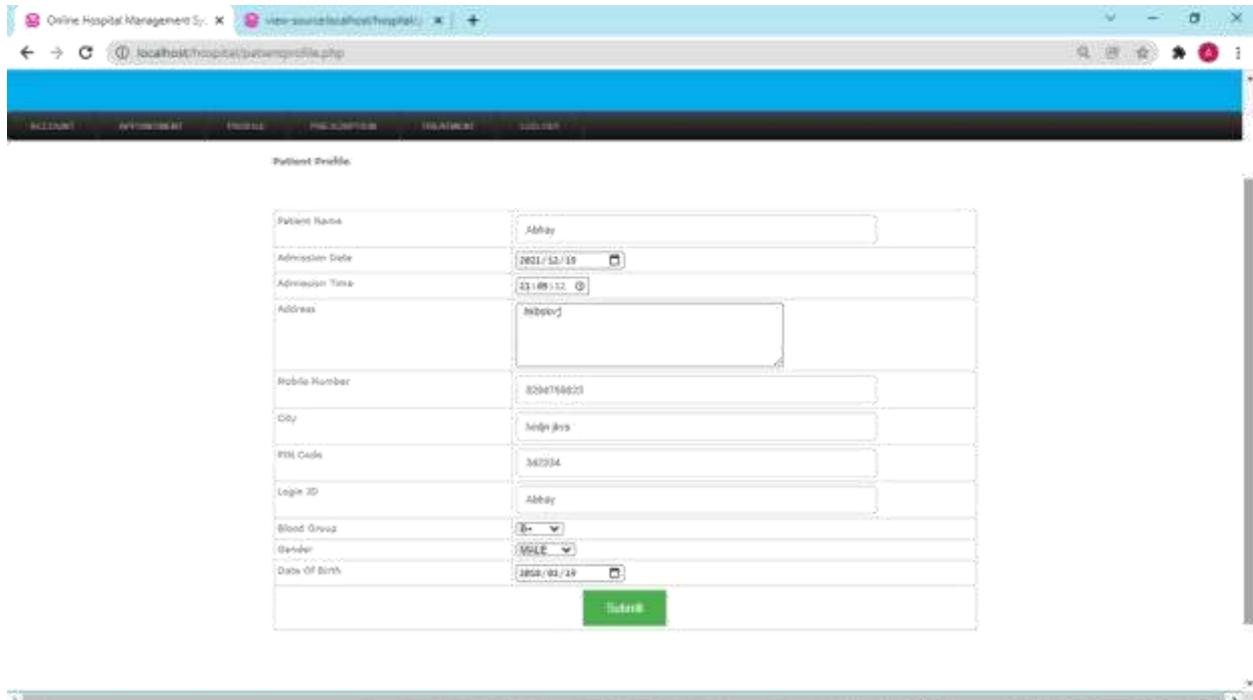
<div class="clear"></div>
</div>
</div>
```

```

<div class="wrapper col5">
<div id="footer">
<div id="copyright">
<p class="fl_left">Copyright © 2018 - All Rights Reserved | </p>
<p class="fl_right">Developed by <a href="https://www.studentprojectguide.com">www.studentprojectguide.com</a>
</p>
<br class="clear" />
</div>
<div class="clear"></div>
</div>
</div>
</body>
</html><script>
function myFunction()
{
window.print();
}
</script>

```

Profile page:



The screenshot shows a patient profile form titled "Patient Profile" in a web browser window. The form consists of a table with various input fields. The data entered into the fields is as follows:

Patient Name	Abhay
Admission Date	2021/12/19
Admission Time	13:49:52
Address	India
Mobile Number	8099155522
City	Mumbai
PIN Code	340234
Login ID	Abhay
Blood Group	O+
Gender	Male
Date Of Birth	1990/03/19

At the bottom right of the form is a green "Submit" button.

```
<di
v
id=
"m
me
nu"
>

<li><a
href="patientaccount.php">Account</a></li> <li>
<a href="#">Appointment</a>
<ul>
<li><a href="#">Add Appointment</a></li>
<li><a href="#">View Appointments</a></li>
</ul>
</li>
<li>
<a href="#">Profile</a>
<ul>
<li><a href="#">View Profile</a></li>
<li><a href="#">Change Password</a></li>
</ul>
</li>
<li>
<a href="#">Prescription</a>
<ul>
<li><a href="#">View Prescription Records</a></li>
</ul>
</li>
<li>
<a href="#">Treatment</a>
<ul>
<li><a href="#">View Treatment Records</a></li>
</ul>
</li>

<li><a href="#">Log Out</a></li>
</div>
```

```
</div>
</div>

<div class="wrapper col2">
<div id="breadcrumb">
<ul>
<li class="first">Patient Profile</li></ul>
</div>
</div>

<div class="wrapper col4">
<div id="container">
<form method="post" action="" name="frmpatprfl" onSubmit="return validateform()">
<table width="200" border="3">
<tbody>
<tr>
<td width="34%">Patient Name</td>
<td width="66%">
```

```

<tr>
<td>City</td>
<td><input type="text" name="city" id="city" value="lvnljn jkvs" /></td>
</tr>
<tr>
<td>PIN Code</td>
<td><input type="text" name="pincode" id="pincode" value="342334" /></td>
</tr>
<tr>
<td>Login ID</td>
<td><input type="text" name="loginid" id="loginid" value="Abhay"/></td>
</tr>
<tr>
<td>Blood Group</td>
<td><select name="select2" id="select2">
<option value="">Select</option>
<option value='A+'>A+</option><option value='A-'>A-</option><option
value='B+' selected>B+</option><option value='B->B-</option><option
value='O+'>O+</option><option value='O-'>O-</option><option
value='AB+'>AB+</option><option value='AB->AB-</option> </select></td>
</tr>
<tr>
<td>Gender</td>
<td><select name="select3" id="select3">
<option value="">Select</option>
<option value='MALE' selected>MALE</option><option
value='FEMALE'>FEMALE</option> </select></td>
</tr>
<tr>
<td>Date Of Birth</td>
<td><input type="date" name="dateofbirth" id="dateofbirth" value="2018-01-
19"/></td>
</tr>
<tr>
<td colspan="2" align="center"><input type="submit" name="submit"
id="submit" value="Submit" /></td>
</tr>
</tbody>
</table>

```

```

</form>
<p>&nbsp;</p>
</div>
</div>
</div>
<div class="clear"></div>
</div>
</div>
<div class="wrapper col5">
<div id="footer">
<div id="copyright">
<p class="fl_left">Copyright &copy; 2018 - All Rights Reserved | </p>
<p class="fl_right">Developed by <a href="https://www.studentprojectguide.com">www.studentprojectguide.com</a>
</p>
<br class="clear" />
</div>
<div class="clear"></div>
</div>
</div>
</body>
</html><script type="application/javascript">
var alphaExp = /^[a-zA-Z]+$/; //Variable to validate only alphabets
var alphaspaceExp = /^[a-zA-Z\s]+$/; //Variable to validate only alphabets and space
var numericExpression = /^[0-9]+$/; //Variable to validate only numbers
var alphanumericExp = /^[0-9a-zA-Z]+$/; //Variable to validate numbers and alphabets
var emailExp = /^[w\-\.\+\]+\@[a-zA-Z0-9\.\-]+\.[a-zA-z0-9]{2,4}\$/; //Variable to validate Email ID

function validateform()
{
if(document.frmpatprfl.patientname.value == "")
{
alert("Patient name should not be empty..");
document.frmpatprfl.patientname.focus();
return false;
}

```

```
else if(!document.frmpatprfl.patientname.value.match(alphaspaceExp))
{
alert("Patient name not valid..");
document.frmpatprfl.patientname.focus();
return false;
}
else if(document.frmpatprfl.admissiondate.value == "")
{
alert("Admission date should not be empty..");
document.frmpatprfl.admissiondate.focus();
return false;
}
else if(document.frmpatprfl.admissiontme.value == "")
{
alert("Admission time should not be empty..");
document.frmpatprfl.admissiontme.focus();
return false;
}
else if(document.frmpatprfl.address.value == "")
{
alert("Address should not be empty..");
document.frmpatprfl.address.focus();
return false;
}
else if(document.frmpatprfl.mobilenumber.value == "")
{
alert("Mobile number should not be empty..");
document.frmpatprfl.mobilenumber.focus();
return false;
}
else if(!document.frmpatprfl.mobilenumber.value.match(numericExpression))
{
alert("Mobile number not valid..");
document.frmpatprfl.mobilenumber.focus();
return false;
}
else if(document.frmpatprfl.city.value == "")
```

```
        alert("City should not be empty..");
        document.frmpatprfl.city.focus();
        return false;
    }
    else if(!document.frmpatprfl.city.value.match(alphaspaceExp))
    {
        alert("City not valid..");
        document.frmpatprfl.city.focus();
        return false;
    }
    else if(document.frmpatprfl.pincode.value == "")
    {
        alert("Pincode should not be empty..");
        document.frmpatprfl.pincode.focus();
        return false;
    }
    else if(!document.frmpatprfl.pincode.value.match(numericExpression))
    {
        alert("Pincode not valid..");
        document.frmpatprfl.pincode.focus();
        return false;
    }
    else if(document.frmpatprfl.loginid.value == "")
    {
        alert("Login ID should not be empty.. ");
        document.frmpatprfl.loginid.focus();
        return false;
    }
    else if(!document.frmpatprfl.loginid.value.match(emailExp))
    {
        alert("Login ID not valid..");
        document.frmpatprfl.loginid.focus();
        return false;
    }
    else if(document.frmpatprfl.password.value == "")
    {
        alert("Password should not be empty..");
        document.frmpatprfl.password.focus();
    }
}
```

```
return false;
}
else if(document.frmpatprfl.password.value.length < 8)
{
alert("Password length should be more than 8 characters..");
document.frmpatprfl.password.focus(); return false;

}
else if(document.frmpatprfl.password.value !=
document.frmpatprfl.confirmpassword.value )
{
alert("Password and confirm password should be
equal.."); document.frmpatprfl.confirmpassword.focus();
return false;
}
else if(document.frmpatprfl.select2.value == "")
{
alert("Blood Group should not be empty..");
document.frmpatprfl.select2.focus();
return false;
}
else if(document.frmpatprfl.select3.value == "")
{
alert("Gender should not be empty..");
document.frmpatprfl.select3.focus();
return false;
}
else if(document.frmpatprfl.dateofbirth.value == "")
{
alert("Date Of Birth should not be empty..");
document.frmpatprfl.dateofbirth.focus();
return false;
}
else if(document.frmpatprfl.select.value == "" ){
alert("Kindly select the status..");
document.frmpatprfl.select.focus();
return false;}
else{ return true;} } </script>
```

CHAPTER-5

CONCLUSION AND FUTURE SCOPE

The medical clinic is a focal point of medical services benefits that, these days, can be considered as a exceptionally innovative enterprise. Then, at that point, the joining of data and correspondence innovation (ICT) in the medical care area has been one of the significant spaces of examination since most recent twenty years. The framework examination permits us to depict trades of data among the various parts of a savvy clinic framework and to portray the assorted boundaries introduced in the constitution of models. For this reason the requirement for a framework approach has been introduced. Beginning from this investigation of brilliant emergency clinic frameworks talked about in this paper, work is in progress to expand general methodology for examination and demonstrating of a brilliant medical clinic framework in light of organized techniques.

References:

1. D. T. Ross; Structured Analysis (SA): A language for communicating ideas, IEEE Transaction On Software Engineering, 3(1), 1977, pp. 16-34.
2. G. Doumeingts; La Méthode GRAI. PhD. Thesis, University of Bordeaux I, Bordeaux, France, 1984.
3. H. Zhang; J. Li; B. Wen; Y. Xun; J. Liu; Connecting Intelligent Things in Smart Hospitals Using NB-IoT, IEEE Internet of Things Journal, 2018, Vol. 5, Issue: 3, pp.1550-1560.
Wigmore; Internet of Things (IoT), TechTarget, June 2014.
4. J. Gabay; MERISE et UML : Pour la modélisation des systèmes d'information, Dunod, Paris, 2004.
5. K. Varadan; Handbook of Smart Systems and Materials, Inst of Physics Pub, London, 2005.
6. L. Catarinucci; D. de Donno; L. Mainetti; L. Palano; L. Patrono; M.L Stefanizzi; L Tarricone; An IoT-Aware Architecture for Smart Healthcare Systems, IEEE Internet of Things Journal, 2015, Vol.2, Issue: 6, pp. 515-526.
7. L. Wang; X. Chen; J. Ding; N. Thomas; Patient Flow Scheduling and Capacity Planning in a Smart Hospital Environment, IEEE Access, 2016, Vol.4, pp. 135-148.