HEALTH DOOR: WEB BASED HEALTH CARE SOLUTION

BY

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This report presented in partial fulfillment of the requirements for degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled "Health Door: Web Based Health Care Solution", submitted by G.M.Asiqur Rahaman AND Md. Rasel Howlader to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on April 07, 2018.

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We hereby declare that this project has been done by us under the supervision of Aniruddha Rakshit, Lecturer, Department of CSE, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for an award of any degree or diploma.

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ABSTRACT

Now a day's online solution like as e-commerce, e-care, e-mail has long been a topic of the popular item, including print-media, education and specially on Health. This report aims to describe the process and procedure to build a very effective web based health care solution system titled as "Health Door". The main objective of this system is to get health care fast and easily people from the internet. This website also provides health tips, first aid, doctor's suggestions and doctor's appointment, ambulance services and online doctors' help and online prescription. In our country 1.5 Crore people of Bangladesh are ultra poor and more than 3 crore people are living below national poverty line. If we look them people are face several health problem and they did not take proper treatment by a skilled doctor's due to time, cost, expensive diagnosis exam and etc. If we are make web based online health care solution for the people it take easy to get better treatment from doctors. We believe that good health is critical condition for rapid socio-economic development of the country.

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INTRODUCTION

1.1 General Introduction

"Health Door" is web based health care solution basically, it is designed for all class of people to get health care and help tips easily by using internet, access from anywhere at any time. The advancement of Information Technologies & Online Solutions depends upon both our demands and our curiosity about Information Technology, then the attitude of users of ICT have towards of ICT and usefulness must be weighted and examined. Therefore, day by day online solution like e-commerce, e-service are more important, popular and useful in the world. In our project we have tried to easy solution for health problem. All online Solution is for our help and easier life. In turns, online solution like these all serve to perpetuate such treatments and disease helps the public about the out-of-control implications of online web based service.

1.2 Overview

E-Health solution system are very well & effective solution for today's generation as well as e-ticket, e-commerce, e-mail etc. e-Health is the cost-effective and secure use of information and communications technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research. E-health is an emerging field of medical informatics, referring to the organization and delivery of health services and information using the Internet and related technologies. In our project Health Door web based application we thought that if make web based application for the all class of people it's good for us to take well treatment by skilled Doctor. Beside this project to take online treatment by Doctor & others features are available such as collect blood, Appointment Booking, Hospital List, Hire Ambulance Buy Medicine .We are using tools ASP.NET,C#,MYSQL database for developing this application robust & secure.

1.3 Objectives

Objectives of this project are as follows:

- a) Develop a web base e-Health solution system using ASP.net and MYSQL Database
- b) Giving easy and flexible access to the web site from an internet.
- c) Making the system secure for users.
- d) To reduce time, cost and make it inexpensive system for user.
- e) Make the system smarter using First Aid by communicate with doctor by Online talking & chatting, image sharing, video sharing.

THEORY

2.1 Web Application

Health Door operates via a web application designed for laptop/desktop/notebook/mobile phone. The user of our Health Door system can easily access on web based application from anywhere any time using internet by a click of log in button of the system. In our web application user must need to create account before login in the system at first give user information for registration. Admin of the application system confirm user registration by e-mail and mobile number. Every user name & mobile are unique and one user can create one account to providing mobile number & e-mail & after login the system user get the total facilities of this web application system.

2.2 Hardware

We are using in our Health Door site HTML,CSS,Javascript,JQuery,SQL, LINQ & C# MVC(Model View Controller)for better performance and operation. To use our Health Door web based health solution users need to some hardware device like Laptop/Desktop/Tablet/Mobile and access our site users need internet by Modem/Wi-Fi/Broadband line to access this web application user can get easily service of this software.

2.3 Internet and Protocols

Easy home system operates via internet connectivity from a third party router as a hotspot or network traffic controller. Easy home system can provide a small range hotspot without internet to communicate with devices inside of its range. Devices can operate on local area network and world wide area network. Both devices can perform from local area network and world wide area network.

2.4 Security and Access

Health Door system can have three types of user. Admin user, Normal user and Service provider user. Admin user can access every listed in the system and can add normal user and service provider user. Service provider user like as doctor give the patient advice, prescription on the other hand normal users can facility total system of the application software. Admin user can maintain the total system of the application. Security is a good option in any application for security reason we have given the captcha information before login into the system for any user.

BACKGROUND STUDY

3.1 Objectives of this project

Health Door is web based health care solution. The main objective of the system is to give the people easily health facilities from anywhere any time using internet. We also know that health is wealth, to keep the healthy fitness we need to awareness about our health. In our country maximum people faces healthy problem but due to lack of knowledge about their health & expensive of treatment, time for treatment, diagnosis cost people are not willing to take proper treatment by skilled doctors. So in our project we have to try to more popular e- health system at the people & we hope that people are more awareness about their health accessing internet to use this site.

3.2 Features of the Project

In our project we also try to stay better features of the project. Our main features of this project is using internet access our site from anywhere anytime to meet or communicate the doctors for better treatment by sharing their image/text/video.

- a) People can collect blood of our site
- b) Doctors appointment booking
- c) Doctors List
- d) Online treatment by chat/image/video
- e) Digital Prescription
- f) Hospital list with address& contact
- g) Booking Ambulance
- h) First Aid treatment
- i) Buy Medicine.

In our project a user must be login to use this features & before login users must create account, when create account by user we gather some information as blood information. One of the features of this site to collect blood for permitted user can collect blood by searching their area & communicate of blood donor collect blood easily. On the other hand if user need to take treatment at emergency purpose he/she login the site & showing active doctors list by choosing he/she can communicate the doctor by text or image sharing after meet the appointment of doctor print the prescription. Booking Ambulance has another feature of this site when patient need to ambulance to take proper time call ambulance provider to booking the ambulance. Hospital list has another feature of this project if people want to know hospital address & location easily can find hospital list.

3.3 Why we develop this project

Over the past decade, the rapid advancement in Information and communication technology (ICT) has experienced tremendous change in health sector in many countries. Recent evidence suggests that e-Health is the blessing of ICT and is probably the most prominent service that has a noticeable effect on the development of healthcare sector in developing countries. Government in developing countries put much hope in e-Health systems due to improve the Quality and access to health services. In our country 1.5 Crore people of Bangladesh are ultra poor and more than 3 crore people are living below national poverty line. In our project we think that if we develop a web based online health project for all class of people to get the health facilities via internet connectivity from anytime & anywhere which is better for us.

To get the health facilities in our country to much expensive for all class of people. The development of our health sector is not well still in modern generation. On the other hand maximum people are come from village in Dhaka forbetter treatment to meet a skilled doctor who is able to maintain their treatment cost because our government not decentralized our medical college, hospital in remote area, different cities & skilled doctor. So people are willing to come in Dhaka for treatment purpose from village, city. It's also expensive for patient staying in Dhaka for take treatment by skilled doctors. Above fact people are want to get the health facilities with low of cost & time but what we can do for health care solution. Research on the adoption of e-Health in developing countries has shown that e-Health can be one solution to provide better access to healthcare facilities for patients, physician, nurses and other healthcare staffs, increase care quality and improve collaboration. Like developed and other developing countries, Bangladesh is beneficiary of the ICT based health service. Inception of e-Health solution is more crucial at this moment at our country. We development our project Health Door for web based care health solution for take better online based treatment using internet from anytime & anywhere for all class of people & have a some features of our application we discuss above.

SYSTEM DESIGN

4.1 Software Design

Table: 4.1: Language and Utilities used to design and develop web application.

ID	LANGUAGE, TOOLS & UTILITIES	<u>PLATFORM</u>	USAG E
1	C#	MVC	User control and communication with central database
2	Java script&jQuery	Event Control	Used in web application programming to control User activities and access central database
3	SQL& LINQ	Database Management	Insert& Retrieve data by user requirement
4	HTML& CSS	Browser Activities	To shows all the content & data in browser with color ,font & fit to screen

4.1.1 Use Case Design of Health Door

USE CASE:Health Door

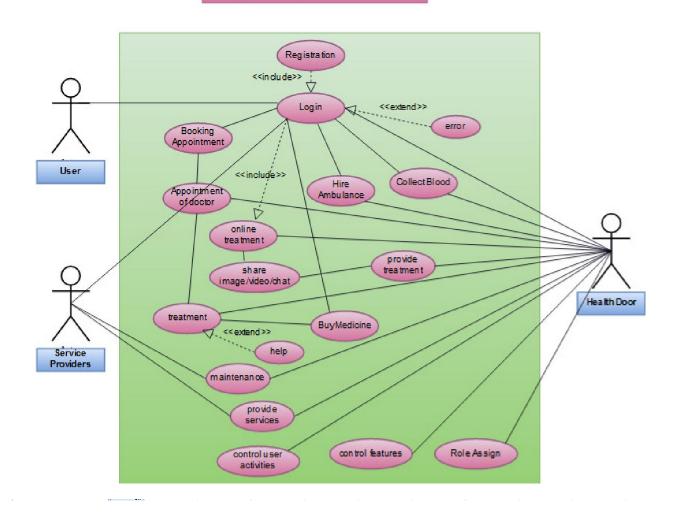


Figure 4.1: Use Case Design of Health Door

4.1.2 Data Flow between user and system

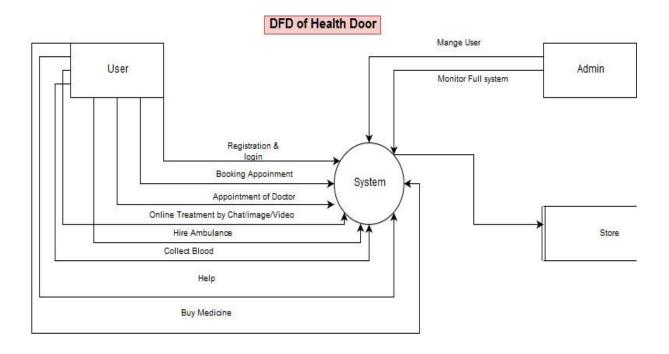


Figure 4.2: Context level Data Flow Diagram of Health Door

4.1.3 Level 1Data Flow Diagram

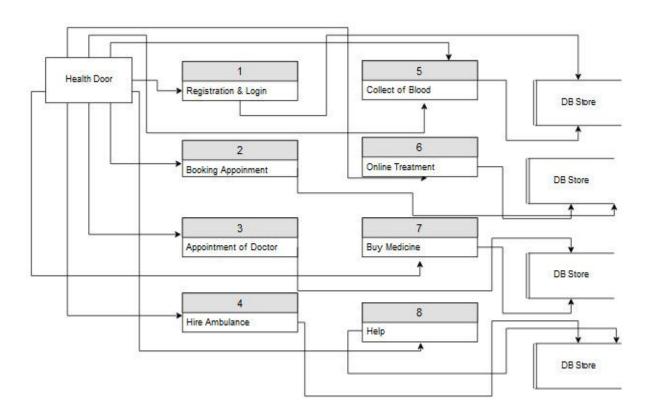


Figure 4.3: Level 1 Data Flow Diagram of Health Door

4.1.4Database Model of Health Door

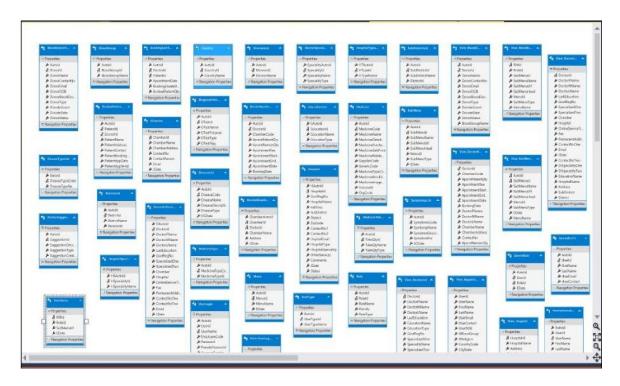


Figure 4.4: Database Model View of Health Door

4.1.5 ERD of Health Door

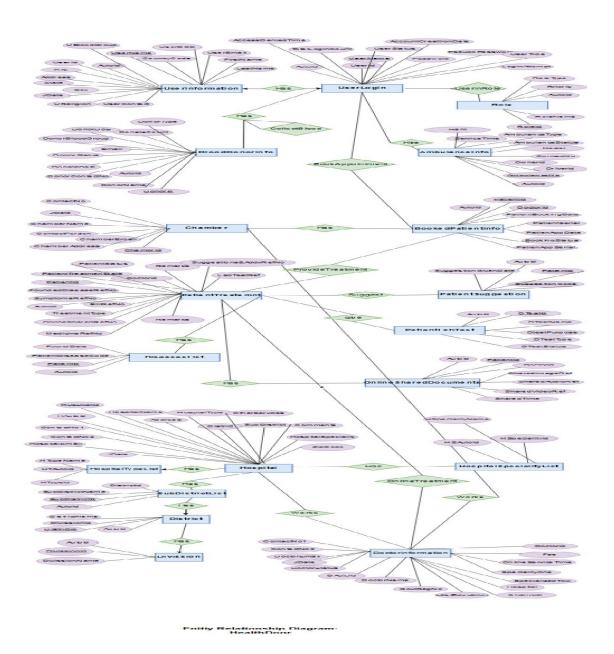


Figure 4.5: ERD Design of Health Door

IMPLEMENTATION

5.1 Home page Code for Health Door

```
Home.cshtml* → X UserRegistrationController.cs =
         <link href="~/Content/Plugins/bootstrap/css/bootstrap.min.css" rel="stylesheet" />
         <link href="~/Content/Plugins/sweetAlert/sweetalert.css" rel="stylesheet" />
         k rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
19
        <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>
21
        <script src="~/Content/Plugins/sweetAlert/sweetalert.min.js"></script>
22 23
             <div class="col-sm-12" style="background-color:cornflowerblue">
24
25
26
27
28
29
30
31
32
33
34
35
                  <div class="col-sm-6">
  <div class="col-sm-3">
                           <div>
                                <img src="~/Content/Plugins/Login/images/icon.png" id="iconImage" style="mangin:0px 10px 0px 5px;" width="85" he</pre>
                           </div>
                      </div>
                       <div class="col-sm-6" style="font-family:Bluefish STENCIL;">
                           <h1>Health Door</h1>
                       </div>
36
37
38
39
                  <div class="col-sm-6" style="margin-top:5px;">
                      @using (Html.BeginForm())
                           if (ViewBag.errorMessage != null)
40
                                <script type="text/javascript">
    swal("Warning !","@ViewBag.errorMessage","warning");
41
42
43
44
                                </script>
                       <div class="col-sm-5">
45
                              <label> User Name</label>
```

Figure 5.1: Home Page design Code

5.2 Code for patient meets with Doctor

```
PatientMeetWithDoctor.cshtml* + × DoctorRegistration.cshtml
             cript type="text/javascript">
window.onload = loadAllFunctions();
               function loadAllFunctions() {
349
350
                    //loadMenuList();
loadBookedPatientList();
                    loadDiseaseTypeList();
352
353
                    loadSymptompsList();
loadLabTestList();
354
355
                    loadMedicineTypeList();
                    loadSuggestionList();
manageView();
356
357
358
359
360
               function loadSelectedDiseaseInfo() {
                    var selectedDissease = document.getElementById('diseaseList');
var diseaseCode = selectedDissease.valwe;
var diseaseName = selectedDissease.options[selectedDissease.selectedIndex].innerHTML
361
362
363
                         var countloadedFaultyTableRow = $('#selectedDiseaseTable tr').length;
365
366
                         //here the number 1 row is the table header for (var i = 0; i < countloadedFaultyTableRow; i++) {
367
368
                              var isExist = checkExistanceDisease(diseaseCode);
370
371
                              if (isExist == "false") {
                                   var element = dacument.getElementById("selectedDiseaseName").innerHTML;
element += "* " + diseaseName + " ";
373
374
                                   document.getElementById("selectedDiseaseName").innerHTML = element;
375
376
                                        377
                                        document.getElementById("selectedDiseaseTablebody").innerHTML = content;
379
```

Figure 5.2: Code for patient meets with Doctor

5.2 Code of patient meets with Doctor

5.3 Code for Doctor List

```
Layout = "~/Views/Shared/_Layout.cshtml";
10
      <link href="~/Content/Plugins/font-awesome/css/font-awesome.min.css" rel="stylesheet" />
11
       <link href="~/Content/bootstrap.min.css" rel="stylesheet" />
12
       <link href="~/Content/Plugins/Accordian/accordian.css" rel="stylesheet" />
13
       <link href="~/Content/sweetalert.css" rel="stylesheet" />
       <link href="~/Content/Plugins/datatables/css/dataTables.bootstrap.min.css" rel="stylesheet" />
15
       k href="~/Content/Plugins/datatables/css/dataTables.jqueryui.min.css" rel="stylesheet" />
       k href="~/Content/Plugins/datatables/css/dataTables.responsive.css" rel="stylesheet" />
18
19
     ⊡<div class="row">
          <br />kbr />
20
21
           <div class="col-sm-1"></div>
          <div class="col-sm-10">
22
23
              <div class="accordion-wrapper">
24
                   <div class="ac-pane active">
                      <a href="#" class="ac-title">
26
                           <span id="subHeader">Doctor List</span><i class="fa"></i></i></i></or>
27
                      <div class="ac-content">
28
                           <div class="inside-content">
29
30
                               <div class="row">
31
                                   <div class="col-sm-12">
                                       <!-- New Menu Add section-->
                                       <div class="col-sm-12">
                                           <div id="loadDoctorDiv"></div>
```

Figure 5.3: Code for Doctor List

5.4 Code for Add Chamber

```
DoctorList.cshtml*
                                                                                                                      HomeController.cs #
                                                                                                                                                                                                                                                SignUp.cshtml
                                                                                                                                                                                                                                                                                                                                                        UserRegistrationController.cs ■
                                  function manageView() {
    document.getElementById("btnAdd").style.display = "";
    document.getElementById("btnEdit").style.display = "none";
    document.getElementById("menuIddiv").style.display = "none";
   88
  98
91
92
93
                                  function loadMenuList() {
                                            var x = "";
iloadedMenuListDiv = document.getElementById("loadedMenuListDiv");
94
95
96
97
98
99
                                               var iloadedMenuListTable = "<thead>MenuID<th
                                               var count = 1;
                                                         type: "POST",
url: '@Url.Action("LoadChamberList", "Doctor")',
                                                         contentType: "application/json; charset=utf-8",
data: JSON.stringify({ "": "" }),
101
182
                                                        data: JSoN.stringity({ ": - }),
dataType: "json",
success: function (data) {
    $.each(data, function (index, value) {
        iloadedHenuListTable += "* toadedHenuListTable += "* toadedHe
103
104
105
106
                                                                                 count++;
107
                                                                     });
iLoadedMenuListTable += "";
108
109
110
                                                                      iLoadedMenuListDiv.innerHTML = iLoadedMenuListTable;
                                                                      //SelectForDelete();
111
112
                                                                      //SelectForEdit();
113
                                                                    | "IndodedMenuListTable").DataTable({
    "responsive": true, // For Make data table responsive
    "scrollY": "200px",// For Fixed Header set with specific height (scrollY, scrollCollapse)
    "paging": false, // For footer Paigination
    "bInfo": true// For Remove Showing entries
114
115
116
117
118
```

Figure 5.4: Code for Add Chamber

5.5 Code for Doctor Registration

```
ViewBag.Title = "DoctorRegistration";

                   <div class="row">
                         <br /> <br />
                         <div class="col-sm-1"></div>
<div class="col-sm-8">
19
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
                                <div class="accordion-wrapper">
                                      <span>Doctor Information</span><i class="fa"></i></i>
                                              <div class="ac-content">
                                                    <div class="col-sm-12">
                                                                         <div class="row">
                                                                               <div class="col-sm-6">
                                                                                       <label class="form-label">Doctor First Name</label>
<input type="text" class="form-control" name="dFirstName" id="dFirstName" />
                                                                                       <label class="form-label">Doctor Middle Name</label>
<input class="form-control" type="text" name="middleName" id="middleName" />
                                                                                       <label class="form-label">Doctor Last Name</label>
<input type="text" class="form-control" name="LastName" id="LastName" />
<label class="form-label">Select a Degree</label>
                                                                                       <span id='educationDiv'></span>
<label class="form-label">BMDC Reg. No</label>
                                                                                       claput type="text" class="form-control" name="regNoBMDC" id="regNoBMDC" />
<label class="form-label">Speciality:One</label>
32
33
34
                                                                                       <span id='specialityDiv1'></span>
```

Figure 5.5: Code for Doctor Registration

EXPERIMENTAL RESULTS

6.1Home page of Health Door



Figure 6.1: Home page of Health Door

When a user visits our site he/she can see our home page. User must be registration first to login our site by providing name, mobile number, e-mail, age etc. After successful registration user give the user name & password for login.

6.2 Online treatment by Doctor

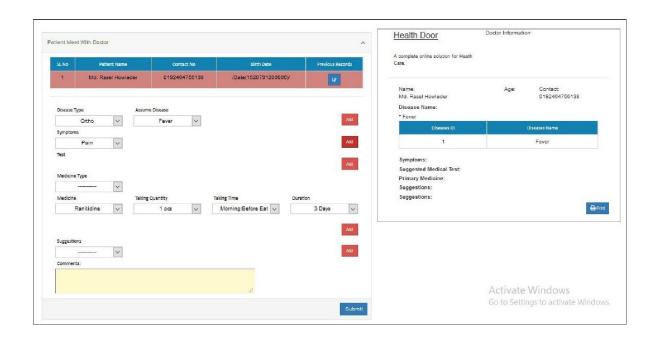


Figure 6.2: Online treatment by Doctor

After successfully registration user can login our page & found features of the application as well as online treatment by Doctor. To meet the discussion with Doctor & patient, patient can print the prescription.

6.3 Registered Doctor List for Appointment



Figure 6.3: Appointment Booking

When a user login our web based application Health Door user can also take appointment by our application by choosing Doctor Name, Education, Chamber address, Hospital Name, Fee.

6.4 Doctor Chamber Information

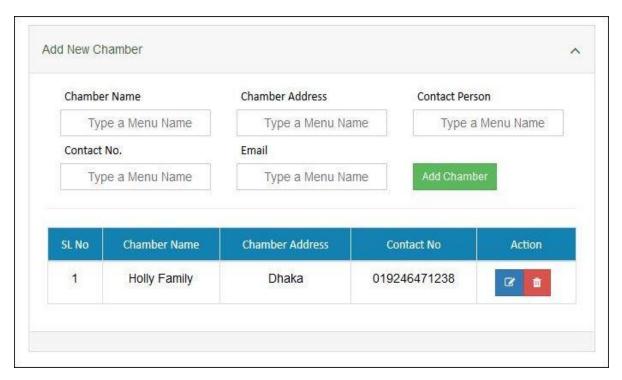


Figure 6.4: Doctor Chamber Information

User can able to see the Doctor Chamber information of our web based application Health Door when they have need to appointment for booking. Users also see the Chamber Name, Chamber Address, and Contact No. Admin user can add chamber information.

CONCLUSION

7.1 Conclusion

There are various systems in Health Care solution. Recently example of health based website like MAYO Clinic, Drugs.com(Online Drug Information). as Healthgrades.com(appointed to a different specialist), Mercola.com(health based website), Health.com(health based), Medscape.com(health based website). In our Health Door web based application we have tried to how user get the health care facilities. Our Health Door system people login the system and take doctor's treatment, First aid, Ambulance information, Hospital list, Blood information, Doctor's appointment, prescription & news feed option where doctor's patient see all status, opinion. We expect that our application system reduce cost, time & more popular at all class of people.

7.2 Limitations & Future Scope

Every web based application system has limitations as well as our Health Door system has some limitations. A user when operates our application must need to internet via connectivity & before login the system user must create account with mobile number & E-mail. Our Health Door system future scope will bright & well. In future if we are an implement this project people will get good facilities about their health care. All above we believe that people will more aware of their health & an inception of health care solution in web based in our country are more important.

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- [4] Digital Qatar Available: http://www.digitalqatar.qa/en/2012/12/31/what-is-e-health-and-why-it-is-important/ Accessed on 30-03-2018 02.45 PM