PROJECT REPORT FOR BACHELOR OF COMPUTER SCIENCE AND

INFORMATION TECHNOLOGY

**"HOSPITAL MANAGEMENT SYSTEM"**



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**DEPARTMENT OF SCIENCE AND TECHNOLOGY**

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PROJECT REPORT FOR BACHELOR OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

**"HOSPITAL MANAGEMENT SYSTEM"**

**SUPERVISED BY**

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A REPORT SUBMITTED

FOR

THIRD SEMESTER DSA-PROJECT

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**JULY, 2022**

**DECLARATION**

We hereby declare that this project entitled "Hospital Management System" is based on our original research work. Related works on this project by other researchers have been duly acknowledged. We owe all the liabilities relating to the accuracy and authenticity of the data and any other information included hereunder.

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**RECOMMENDATION**

This is to certify that this project entitled **"Hospital Management System"** prepared and submitted by**Amshu Man Maharjan, AabhashBashnet, Manish Karki and Sarad Khadayat** for third Semester DSA Project of Bachelor of Computer Science and Information Technology awarded by Tribhuvan University, has been completed under my supervision.

……………………..

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Date: Jan, 2023

# **ACKNOWLEDGMENT**

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# **ABSTRACT**

Hospital Management System is a program for recording books. In this project we keep the records of the hospital. It is a very simple program and anyone can run it in the computer.

In this project we take details of the patients, we including their name, address, their blood group as well as the diseases they have. The patients have to choose which kind of disease they have then appointments will be given to the patients.If more patients comes to the hospital then we can add more patients. After finishing the treatment of the patients we can delete the record of the patients.We can take the details of the patients such as name, address, age, phone number, blood group and then patients can choose which kind of disease they have. After taking the details of the patients appointment are given to the patients. If the treatment of the patient is finished or if the patients leave the hospital then we can also delete the record of the patients.

Hence, by using different functions we have created this project.

Keywords: *Add patient, delete a record and display all appointments.*

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# **1.INTRODUCTION**

## **INTRODUCTION**

Hospital Management System is a system which is widely used in hospitals to keep the records of patients and to give appointments. It is to keep the records to know who patients had visited into this hospital for check-up.

Hospital Management System is created by using C. It uses the concept of simple programming. The details of patients and disease of the patient is saved and then the patient will be given an appointment. We can delete the details later on easily by using this 'Hospital Management System'. It is very useful in Hospitals to keep and manage larger numbers of records.

Hospital Management System is one of the best example of giving appointments to the patients. Now days it is used in many hospitals to manage the hospital.

## **PROBLEM STATEMENT**

It is very impotent to manage the hospitals.If the hospital is properly managed then the patients will get better treatments. Patients can get their treatment on the time and we can reduce the risk of the patients not getting treatment on time by making the hospital management system and implementing it on the hospitals. Every hospitals should have this kind of hospital management system for the better management of the hospitals. We can keep digital record in the computer because of the hospital management system and this kind of system is very important in the hospitals.

Thus, we are trying to make an easily understandable and can be easily edited and updated 'HOSPITAL MANAGEMENT SYSTEM' that will make us easy to manage the records of the patients.

## **1.3 OBJECTIVE**

The objectives of our project are the following:

i. To make Hospital Management Systemmore easily accessible using a highly versatile language.

ii. To provide hospital an easy way to manage the records of patients.

iii. To utilize our knowledge in C-programming and DSA to make something useful.

## **1.4 SCOPE**

Our project is applicable in any place that has access to a compute regardless of its specifications and its hardware capabilities.

This is made possible by the versatility of C language.

## **1.5OVERVIEW OF REPORT**

This report altogether contains four chapters. The first chapter “Introduction” contains overall information of the program “Hospital Management System”.

The chapter is further sub-headed into ten topics. Contents of this chapter are background, problem statements, objectives, scopes and overview of our project. Similarly, chapter two contains literature review of the report. In addition, chapter three is all about the methods by which the project is being completed. Under the third chapter “Methodology”, system flow diagram of hospital management system along with its working mechanism is given.

# **2.BACKGROUND STUDY AND LITERATURE REVIEW**

## **BACKGROUND STUDY**

Our team decided to port Hospital Management System in C because first off, it is a useful system to keep records and thus our program is familiar to the users as there is a high chance that user has at least seen this kind of management system. Having familiarity with it is important because it will be easier to convince people to give a chance to our program instead of trying to make them give a chance to something that they have no idea what it is and no idea whether they will like it.

Secondly, we are also starting out with very beginner level knowledge of C-Programming and DSA (Data Structure and Algorithm). Thus, we wanted our project to be moderately challenging without hopeless levels of difficulty that would put us off C.

Thirdly, we wanted our project to incorporate technology that was traditional to us but learning it could prove to be very useful to us in the future.

Thus, because of these reasons, we decided that our project would be porting the popular hospital management system to PC using in C.

## **LITERATURE REVIEW**

For any hospital management system we have to take the detail of the patients and also we have to know the disease of the patients for the check-up. Then we have to give them the appointments to come in the hospital for the check-up.

'Hospital Management' system is one of the best example of management system as we can easily manage the records of patients in it.

# **3. SYSTEM ANALYSIS AND DESIGN**

# **3.1 SYSTEM ANALYSIS**

# **REQUIREMENT ANALYSIS**

1. **FUNCTIONAL REQUIREMENT**

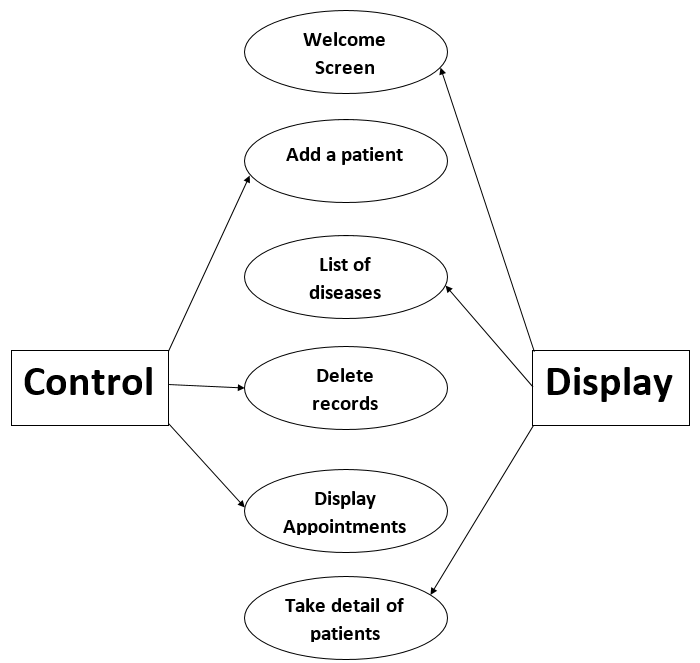


Figure 1. Use case diagram for the project.

There are two factors in our project; display and controller. Main objective of our project is to keep records and details of patients and give them appointments.

Talking about our vital actor project control, it does most of the heavy lifting like adding patients, deleting records and take detail of patients. All these tangle up to meet to make a fine recipe for an exciting hospital management system.

Some major entities of our program with their functions are:

a) Show welcome screen: It greets the people to the hospital.

b) Add patients: It adds patients to the hospital.

c) List of disease: Itdisplays the list of diseases to choose, from which the patient is suffering.

d)Delete records: It deletes the record of the patients.

e) Take detail of patients: Detail of patients such as name, address, age phone number blood group and the disease that the patient is suffering will be taken.

f)Display Appointments: After taking the detail of the patient appointments will be given to visit the hospital.

**ii. NON-FUNCTIONAL REQUIREMENT**

**a.ACCESSIBILITY**

One can easily gain access to our project on downloading it via internet. Users won’t have a problem downloading it from devices such as a pen-drive. It is free of cost and can be easily used.

**b. PERFORMANCE**

The performance of this project is really good. It works really nice in any computer without any glitch and lags.

**c. APPEARANCE**

It is a hospital management system. After running this program at first the welcome screen is shown. We have to choose what we want to do. We can keep records, make changes in it and delete the records if we don't need it.

## **FEASIBILITY ANALYSIS**

1. **TECHNICAL FEASIBILITY**

Our project is technically feasible because the code is written in Cso it doesn’t require much investment.

1. **OPERATIONAL FEASIBILITY**

Our project is operationally feasible because it doesn’t require any investment to run normally it only requires a C-Programming Language that is easily available.

1. **ECONOMIC FEASIBILITY**

Our project doesn’t cost anything to either run so it is economically feasible to anyone who is interested in our project.

1. **SCHEDULE FEASIBILITY**

Our project only required a week to program so it doesn’t require much time investment hence it is feasible in any schedule.

# **SYSTEM DESIGN**

## **3.2.1 ALGORITHM**

Step 1: Start

Step 2: Show the Welcome Screen.

Step 3: choose the options.

Step 4: If option is add a patient (1). Give detail of the patients.

Step 5: Display list of disease.

Step 6: Choose the option, Go to step 2.

Step 6: If option is delete the record (2). Delete the record of the patients,Go to step 2.

Step 7: If option is display all appointment (3). Display all the appointments,Go to step 2.

Step 8: If the option is (4) exit the program.

Step 9: Stop.

# **4.RESULT AND DISCUSSION**

## **4.1RESULT**

The final output of our program has following results:

The figure below shown is the menu screen or welcome screen of the project. It is asking for the options to do in the record of the hospital.

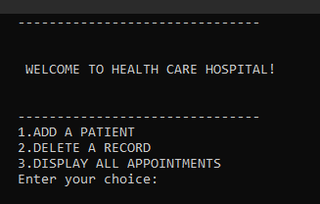


Figure 3. Screen shot of menu screen.

In this screen we can see there are many options we can choose. We can choose any options as we like to so with this record.

We can choose many options in this program. After performing some activities in this program then output will be as follow:

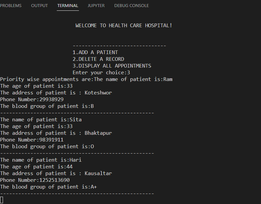


Figure 4. Screenshot of the activities performed in program.

## **4.2 TEST CASES**

Table 4.2.1: Test case 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | |  | LOAD\_001 | | | | | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| TEST CASE | |  | Presentation of welcome screen. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESCRIPTION | |  |  | | | | | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| PRE REQUISITE | |  | -Windows Terminal | | | | | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  |  | | | | | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| TEST SCENARIO | |  | On Opening executable file | | | | | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| TEST DATA | |  | DESIRED SCREEN SIZE(any) | | | | | | | | | | | | | |  | |  | |  | |  | |  | |  | |  | |
|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| Steps | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | | | |
|  | |  | Expected Result | | | | | |  | | Obtained Result | | | | | |  | | Result | | | | | | | | | |  | |
|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| -Open executable file | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| .exe file should run and menu screen to be shown. | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| .exe file should run and menu screen to be shown. | | | | | | | |  | |  | | .exe file ran successfully and menu screen was shown. | | | | | | | | Pass | | | | | |  | |
|  | |  |  | |  | |  | |
|  |  | | | | | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
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|  | |  |  | |  | |  | | | |  | | | |  | |  | |  | |  | |  | |  | |  | |  | |
| Table 4.2.2: Test case 2 | | | |  |  | |  | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| Test Case ID | | | |  |  | | LOAD\_002 | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | | | | |  | |  | | | |  | | | |  | |  | |  | |  | |  | |  | |  | |  | |
| TEST CASE DESCRIPTION | | | | | Options Selection | | | | | | | | | | | |  | |  | |  | |  | |  | |  | |  | |
|  | | | |  |  | |  | | | |  | | | |  | |  | |  | |  | |  | |  | |  | |  | |
| PRE REQUISITE | | | |  |  | | Running instance of the program | | | | | | | | | |  | |  | |  | |  | |  | |  | |  | |
|  | | | |  |  | |  | | | |  | | | |  | |  | | | |  | | | |  | |  | | | |
| Test Scenario | | | |  |  | | Checking if all the function work properly | | | | | | | | | | | | | | | | | | | |  | | | |
|  | | | |  |  | |  | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| Test Data | | | |  |  | | “1” key | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | | | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| Steps | | | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  | |  |  | |  | | | |  | | | |  | |  | | | |  | | | | | |  | | | |
|  | |  | |  |  | | Expected Result | | | | Obtained Result | | | | | | Result | | | | | | | |  | |  | |  | |
|  | | | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | | | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| -Open the executable file | | | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | | | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  |  | | Corresponding results of | | | |  | |  | | Corresponding result of adding books was shown. | |  | |  | | Pass | | | |  | |  | |  | |
| -Press the 1 key | | | |  |  | |  | |  | |  | |  | |  | |  | | | |
|  |  | | adding patients to be shown. | | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |



|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 4.2.3: Test case 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Test Case ID |  |  | LOAD\_003 | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |
| TEST CASE |  |  | Termination of program on pressing 4 | | | | | | | |  |  |  |  |  |
| DESCRIPTION |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PRE REQUISITE |  |  | Running instance of the program | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |
| Test Scenario |  |  | Checking if the program terminates on pressing key “4” | | | | | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Test Data |  |  | “4” key | | | |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Steps |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | Expected Result | |  | Obtained Result | | | |  | Result | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| -Open the executable file |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Program must terminate. | | |  |  | Program was terminated. | | | |  | Pass |  |
| -Press the “4” key |  |  |  |  |  |  |  |
|  |  |  |  | | |  |  |  | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  | | |  | |  |  |  |  |  |  |

# **5. LIMITATION**

Every things have some limitations. Our project 'Hospital Management System' also have some of the limitations they are described below:

1. The details of patients are not saved in anything.
2. If program is closed or terminated all the records of the patients will be gone.
3. We can access the data or details of the patients till the programming is running and next time the details will be gone.

# **6. FUTURE WORK**

After creating this 'Hospital Management System' using C. We are trying to make better version of this project. In better version of 'Hospital Management System' we will have many new things such as:

* 1. We will save the details of the patients permanently.
  2. View the details of patients such as phone number, address etc.
  3. Records of the patients will be saved though the program is closed or terminated.
  4. The records of the patients will be deleted if we want to delete it otherwise it will be saved.

# **7.RECOMMENDATION AND CONCLUSION**

## **RECOMMENDATION**

To those people who might take our report as reference we have some suggestions and recommendations:

**First recommendation:**Be careful while writing the program. If there are some mistakes in the program then the program will not run as we want to run it.

**Second recommendation:**The details in the program are not saved. So, we cannot keep the records permanently.

## **CONCLUSION**

We will have to work a lot about record keeping in this project and we should also have good knowledge on C to make such project.

There were a lot of frustrations as we hit the dead end a lot of times on various aspects of the development. However, all those grinding gave us some knowledge about C-programming. This was indeed a great experience for our team.

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