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MINI PROJECT I

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HOSPITAL MANAGEMENT SYSTEM

By

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BONAFIDE CERTIFICATE

Certified that this mini project report on **“HOSPITAL MANAGEMENT SYSTEM USING PYTHON AND SQL”** is a bonafide work of **“DHINAGARAN.V”** who carried out the project work under my supervision.

SIGNATURE OF THE GUIDE

HEAD OF THE DEPARTMENT

The mini project report submitted for the viva voice held on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HOSPITAL MANAGEMENT SYSTEM USING PYTHON AND SQL

ABSTRACT

The purpose of the project entitled as “HOSPITAL MANAGEMENT SYSTEM” is to computerize the Front Office Management of Hospital to develop software which is user friendly simple, fast, and cost – effective. It deals with the collection of patient’s information, diagnosis details, etc. Traditionally, it was done manually. The main function of the system is register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully System input contains patient details, diagnosis details, while system output is to get these details on to the screen.

The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast.

Hospital Management System provides the benefits of streamlined operations, enhanced administration, control, superior patient care, strict cost control and improved profitability. HMS is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. More importantly it is backed by reliable and dependable support. The project ‘Hospital Management System’ is based on the database, object oriented and networking techniques. As there are many areas where we keep the records in database for which we are using MY SQL software.

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CHAPTER 1

INTRODUCTION

The project Hospital Management system includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current status of each room. User can search availability of a doctor and the details of a patient using the id. The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the data base. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast .Hospital Management System is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals .Hospital Management System is designed for multi speciality hospitals, to cover a wide range of hospital administration and management processes. It is an integrated end-to-end Hospital Management System that provides relevant information across the hospital to support effective decision making for patient care, hospital administration and critical financial accounting, in a seam less flow .Hospital Management System is a software product suite designed to improve the quality and management of hospital management in the areas of clinical process analysis and activity-based costing. Hospital Management System enables you to develop your organization and improve its effectiveness and quality of work. Managing the key processes efficiently is critical to the success of the hospital helps you manage your processes.

CHAPTER 2

LITERATURE SURVEY

One of the major challenges existing hospital management systems face is around operational efficiency and wait times between different processes, departments and persons. This paper highlights such limitations of existing systems and proposes a RFID(Radio Frequency ID) and wireless sensor based , location and information management framework that facilitates real time tracking of hospital assets, personnel and patients as they move through pre-set procedures as part of daily activities of the hospitals. The International Journal for Research in Engineering Application & Management Issue IJREAM All Rights Reserved. 2 system covers the visual simulation and providing ability to analyse the ongoing operations so they can be corrected to achieve increased process efficiency and service levels.

This paper reviews the HIS (Hospital Information Systems) which are widely used in many hospitals in China mainly to provide easier and faster way for daily medical tasks /activities with a GUI And provides for overcoming some of the limitations of HMS , eg. HMS aims at improving quality of health care services but do not have way of evaluating /measuring those. So this paper proposes HMS (Hospital Management System) which aims at improving quality of services, identifying cost reduction areas , analyses and evaluate /rate health care services . The ability to evaluate the services facilitates hospital achieve higher Customer satisfaction scores and get a competitive edge against those hospitals which score less or use HIS and do not have ways of promoting the quality of their services.

Many enterprise projects get scrapped due to high costs involved in initial planning requirement gathering and design phase. The costs in this phase become unmanageable due to lot of unknown factors. Like lack of Subject area expertise, lack of knowledge on different Hospital enterprise functions

- 1) Patient admission
- 2)Patient Treatment planning
- 3)Order Entry
- 4)execution of diagnostic and treatment procedures
- 5)administrative documentation
- 6)billing
- 7) Clinical documentation
- 8) discharge

referral to specialised medical institutions, lack of knowledge /experience on the entities types involved (example: patient, Clinical finding) , their roles and responsibilities and the relationships /associations between different enterprise function and /or entity types. This paper aims at creating a reference data model that will serve as a generic starting point for any new HIS development projects so costs involved in studying and analyzing current state and coming up with gaps analysis and additional requirements can be significantly reduced. The model is Hierarchical in nature that is it is dived into 3 levels of sub models and units so a choice for full or partial implementation can be offered based on the requirements.

The author of this paper focuses more on needs of hospital manager and the ecosystem in which he/she operates. The internal and external Environment shaping factors ESFs that bear an impact or association on daily hospital activities and decision making process that the hospital manager has to go through in each situations. Some of the challenges that this ecosystem needs to work on are high demand pressure, greater customer satisfaction level and low profit margins.

This paper more so contributes to Planning, Design and development aspects of any Hospital management system by highlighting ESFs that should be considered. The external and internal factors the author mentions are: The public at large, Law and policy makers, Funders, Medical suppliers the biggest of which are pharmaceutical companies, the scientific community, the software development community. Internal influencer authors can obviously also be at play in terms of what services are provided by the hospital and how they are provided. These can include: the skills and experience of staff, internal business strategies such as competition and subsidization, Soft factors such as morale and culture, Equipment availability.

During past several decades, the hospital management system is supposed to maintain manual handling of all the hospital daily activities. The manual handling of the record is time consuming and highly prone to error. To improve the performance of the hospital management system, the computerized hospital management system is to be undertaken. The computerized hospital project is fully computerized and user friendly even that any of the hospital's members can see the patient's report and the doctor's report.

CHAPTER 3

EXISTING SYSTEM

The current manual system has a lot of paper work. To maintain the records of sale and service manually, is a Time-consuming task. With the increase in database, it will become a massive task to maintain the database. Requires large quantities of file cabinets, which are huge and require quite a bit of space in the office, which can be used for storing records of previous details. The retrieval of records of previously registered patients will be a tedious task. Lack of security for the records, anyone disarrange the records of your system. If someone want to check the details of the available doctors the previous system does not provide any necessary detail of this type.

- Presently all the hospital functionalities are done manually .
- If the patient want to consult the doctor he can visit.
- This makes the patient very difficult .

CHAPTER 4

PROPOSED METHODOLOGY

Project planning is part of project management, which relates to the use of schedules such as Gantt charts to plan and subsequently report progress within the project environment. Initially, the project scope is defined and the appropriate methods for completing the project are determined. Following this step, the durations for the various tasks necessary to complete the work are listed and grouped into a work breakdown structure. The logical dependencies between tasks are defined using an activity network diagram that enables identification of the critical path.

We have used Iterative and Incremental Development model (IID) for our project development. This development approach is also referred to as Iterative Waterfall Development approach. Iterative and Incremental Development is a software development process developed in response to the more traditional waterfall model. This model is designed to take care of such big project. The large and complicate project chiefly demand better development and testing procedure. The waterfall model is well known for its repeated testing process. Hence I choose the waterfall model for developing my software.

4.1 ADVANTAGES OF PROPOSED SYSTEM:

- When the patient easily to identify.
- It is secured.
- Easy to analyse the previous patient problems.
- If we are using the medical reports on paper sheets only that can be missing at any way.
- So, we can create an id for each and every patients.
- that can be easy to get our medical report.

CHAPTER 5

SYSTEM ARCHITECTURE

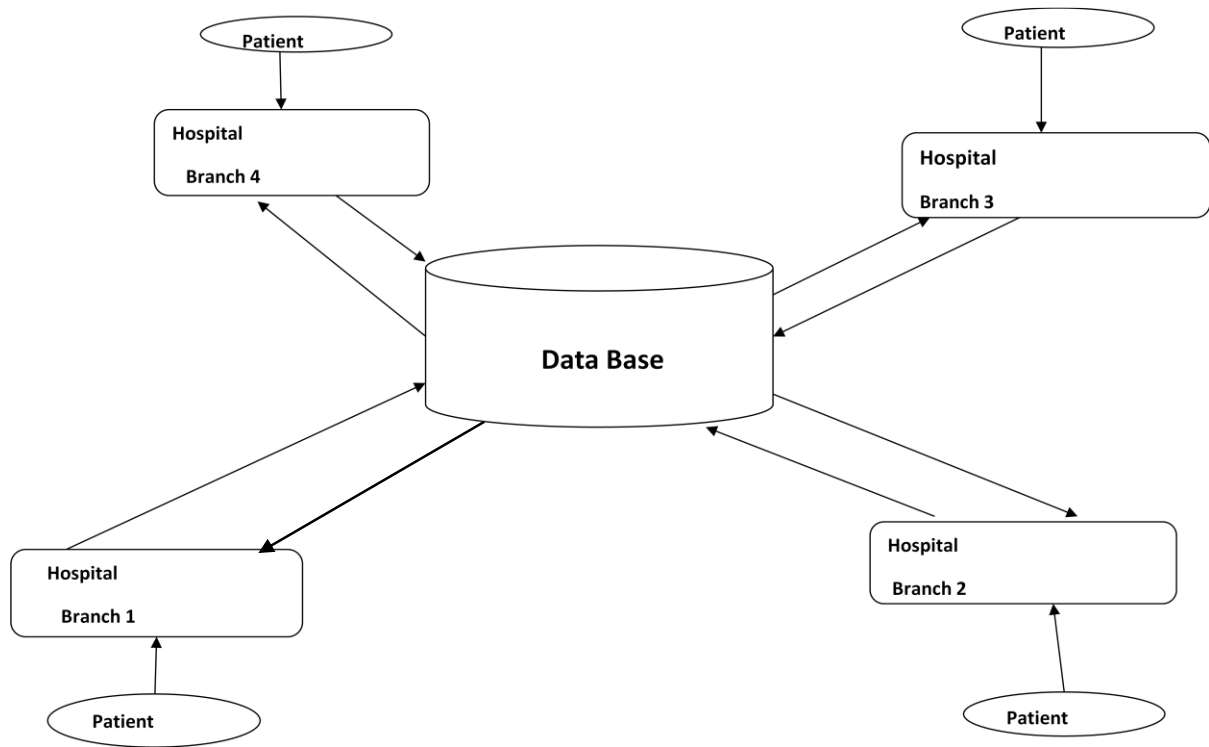


Fig : 1 Architecture of hospital management system

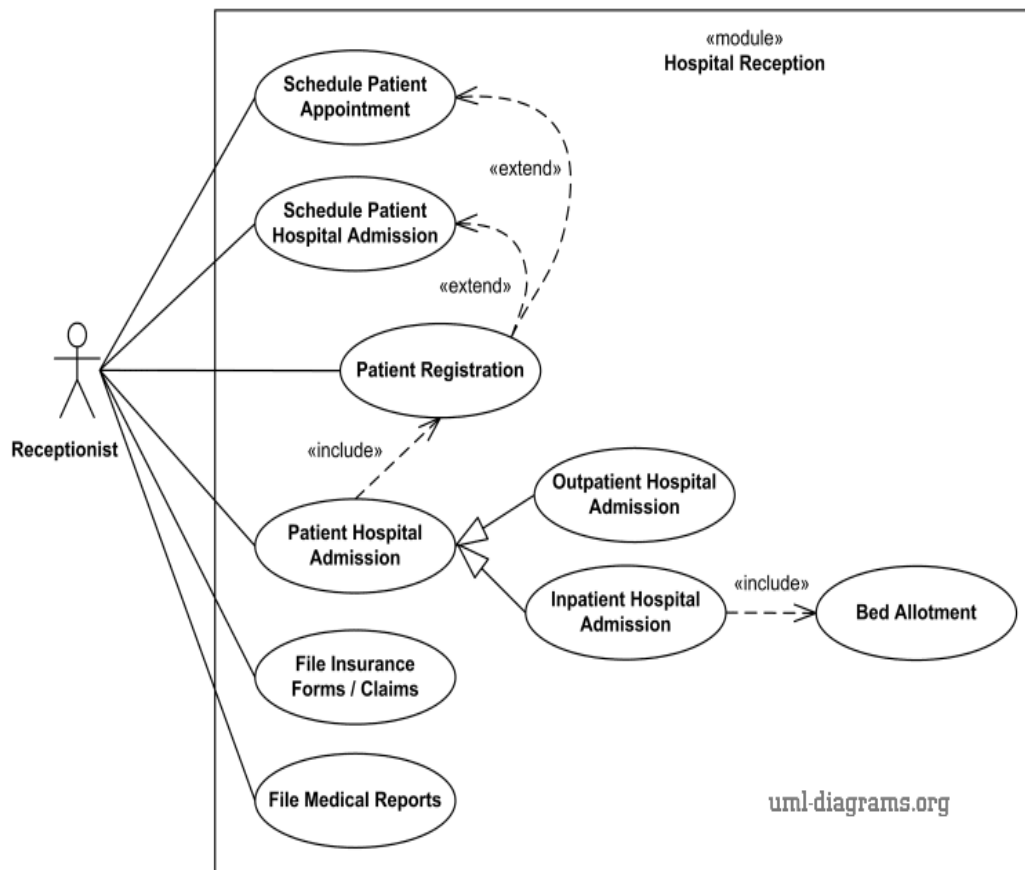


fig: 2 Hospital management system Architecture

This is a component diagram of hospital management system which shows components, provided and required interfaces, ports, and relationships hospital management system architecture diagram between the patient, doctor, appointment, medicines and hospital. this type of diagrams is used in component-based development (cbd) to describe systems with service-oriented architecture (soa).

Instead of dropping an astronaut in the middle of a heart attack miles off hospital management system architecture diagram the coast, they could potentially be brought down in the nevada desert and taken to the hospital in an ambulance. Mobile resource management (mrm) is a combination of technology, software, and hardware that informs users of the location of a mobile asset at a specified time. organizations use mobile resource. Hospital management system (block diagram) use createUML's easy online diagram editor to edit this diagram, collaborate with others and export results to multiple image formats. edit this diagram. boson. we were unable to load the diagram. tap diagram to zoom and pan. copy of hospital management system.

CHAPTER 6

URL DAIAGRAMS

6.1 ENTITY RELATION DIAGRAM:

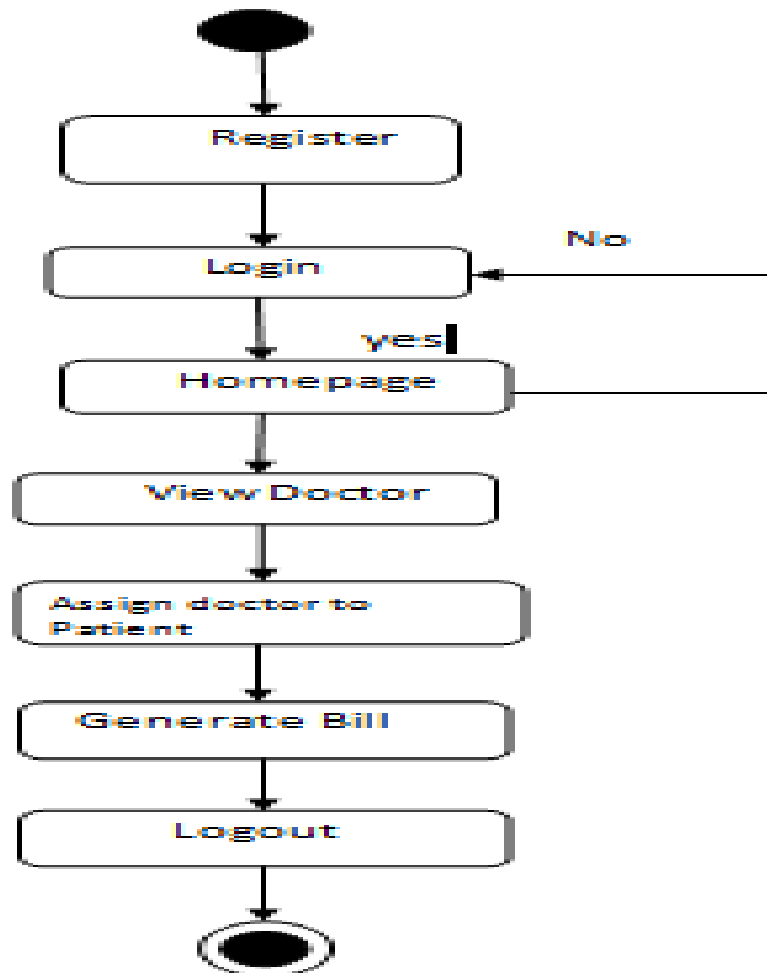


fig: 3 Entity relation diagram of hospital management system

6.2 DATA FLOW DIAGRAM:

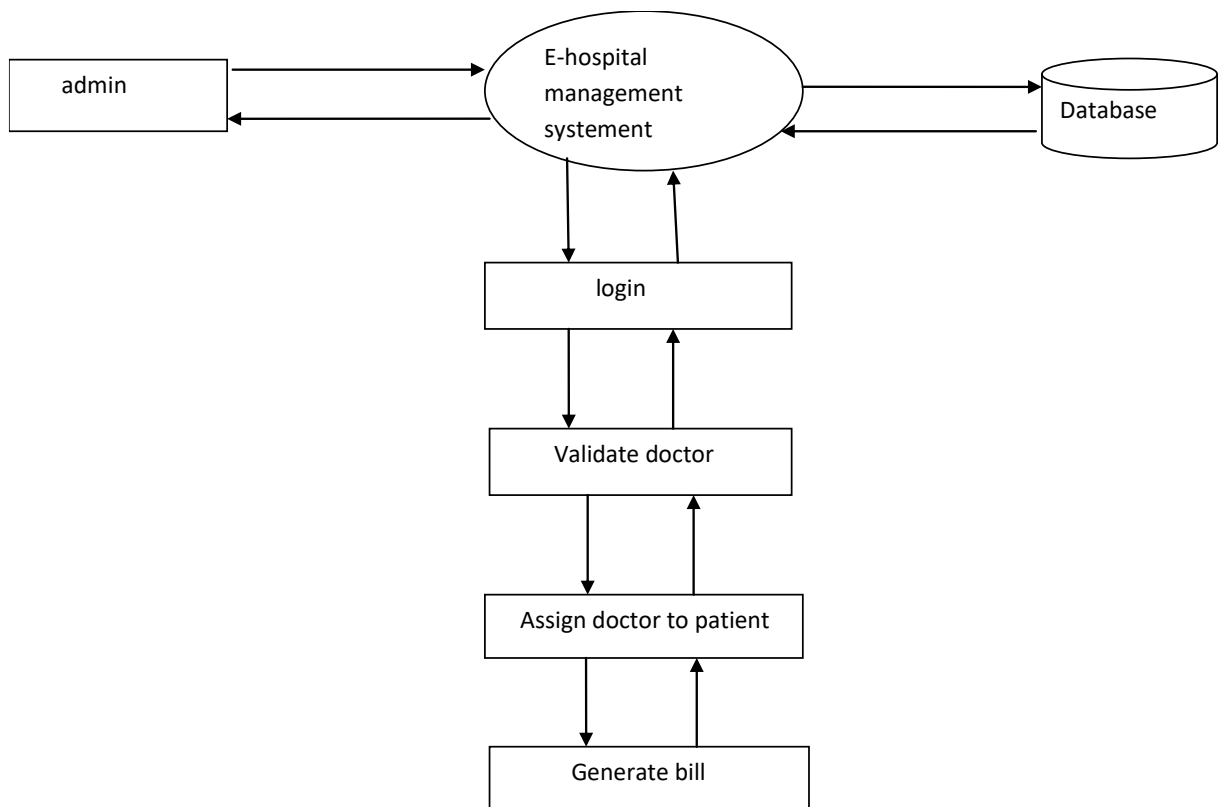


fig.4 Dataflow diagram of Hospital management system

CHAPTER 7

MODULES EXPLANATION

There are four types of modules

- Admin
- Doctors
- Patient
- Pharmacy
- **Admin module :**
 - manage department of hospitals, user, doctor, nurse, pharmacist, laboratorist accounts.
 - watch appointment of doctors .
 - watch transaction reports of patient payment .
 - Bed ,ward, cabin status.
 - watch blood bank report.
 - watch medicine status of hospital stock.
 - watch operation report .
 - watch birth report.
- **Doctor module:**
 - Manage patient. account opening and updating
 - Create, manage appointment with patient
 - Create prescription for patient
 - Provide medication for patients
 - Issue for operation of patients and creates operation report
 - Manage own profile
- **Pharmacy module:**
 - Maintain medicine .
 - Keep records of hospitals stock medicines and status .
 - Manage medicine categories.
 - Watch prescription of patient.
 - Provide medication to prescriptions .

- **user module(patient):**
- View appointment list and status with doctors.
- View prescription details .
- View medication from doctor .
- View doctor list .
- View blood bank status .
- View operation history .
- View admit history. like bed, ward icu etc.
- Manage own profile.

CHAPTER 8

IMPLEMENTATION&RESULT

Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread through out the hospital management infrastructure. Often information is incomplete or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. Multiple copies of the same information exist in the hospital and may lead to inconsistencies in data in various data stores..

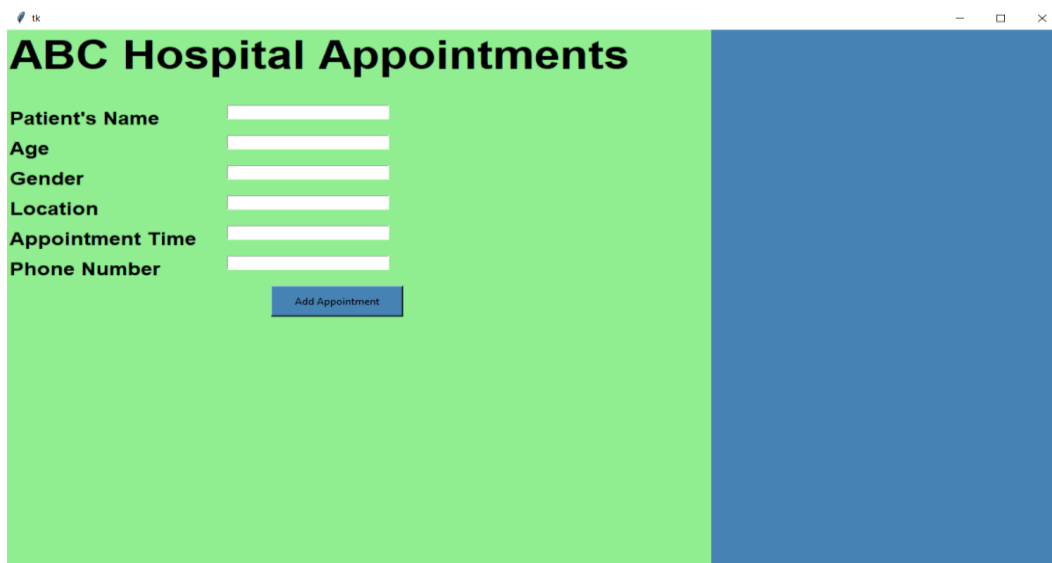
The image shows a web application window titled "ABC Hospital Appointments". The window has a light green background on the left and a blue background on the right. On the green background, there is a form with the following labels and input fields: "Patient's Name", "Age", "Gender", "Location", "Appointment Time", and "Phone Number". Each label is followed by a white rectangular input field. Below these fields is a blue button with the text "Add Appointment". The window has standard window controls (minimize, maximize, close) in the top right corner.

Fig:5 Welcome page of hospital management system

View the list of all patients registered:

- Admin can able to view all the patients registered.
- This includes the patients' First Name, Last Name, Email ID, Contact Number and Password.
- Admin can also search for a patient by their contact number in the search box.

Storing of patient details:



Fig : 6 sorting of patient details in HMS

CHAPTER 9

SOFTWARE REQUIREMENTS

We have used some software for implementing Hospital management system. And software are given in the following,

- Python 3.9.6
- Tkinter 8.6
- MySql 8.0

CHAPTER 10

CONCLUSION

- Since the Hospital Management System is essential for maintaining detail about the Doctor, Patient, Hospital staff etc. we understand that by using of Hospital Management System project the work became very easy and we save lot of time. Hospital administrators would be able to significantly improve the operational control and thus streamline operations. This would enable to improve the response time to the demands of patient care because it automates the process of collecting, collating and retrieving patient information. Accounting sometimes becomes awfully pathetic and complex. This product will eliminate any such complexity .
- The project Hospital Management System (HMS) is for computerizing the working in a hospital.
- The software takes care of all the requirements of an average hospital and is capable to provide easy.
- And effective storage of information related to patients that come up to the hospital.
- Using this application we can retrieve patient's history with a single click.
- Thus processing information will be faster.

REFERENCES

- HTML & CSS <https://www.w3schools.com/>
- Bootstrap <http://getbootstrap.com/>
- <https://stackoverflow.com>
- Abraham Silberschatz, Henry F. Korth and S. Sudarshan “Sixth Edition Database System Concepts released
- <https://books.google.iq/books?id=hxMiygsvOh8C&pg=PA36&lpg=PA36&dq=hms+c%23&source=bl&ots=uh0E6Kov04&sig=ACfU3U23pLOPSMtsRQuQs6ab44a6pqV5Nw&hl=ar&sa=X&ved=2ahUKEwifgb-RIKDqAhUoxKYKHSFsATEQ6AEwCXoECAgQAQ#v=onepage&q=hms%20c%23&f=false>

APPENDIX

Create Tables

```
database db;  
CREATE TABLE appointments (name varchar(20), age int(2), gender varchar(6),  
location varchar(20), scheduled_time int(4), phone int(10));
```

main.py

1. Importing the Modules

```
from tkinter import *  
import sqlite3  
import tkinter.messagebox
```

2. Connecting to the MySql server

```
conn = sqlite3.connect("appointment`.db")
```

3. Designing the Window

```
class Application:  
def __init__(self, master):  
self.master = master
```

4. creating the frames in the master

```
self.left = Frame(master, width=800, height=720, bg='lightgreen')  
self.left.pack(side=LEFT)  
self.right = Frame(master, width=400, height=720, bg='steelblue')  
self.right.pack(side=RIGHT)
```

5 .labels for the window

```
self.heading = Label(self.left, text="ABC Hospital Appointments", font=('arial 40  
bold'), fg='black', bg='lightgreen')  
self.heading.place(x=0, y=0)
```

6. patients name

```
self.name = Label(self.left, text="Patient's Name", font=('arial 18 bold'), fg='black',  
bg='lightgreen')
```

```
self.name.place(x=0, y=100)
```

7. age

```
self.age = Label(self.left, text="Age", font=('arial 18 bold'), fg='black', bg='lightgreen')  
self.age.place(x=0, y=140)
```

8. gender

```
self.gender = Label(self.left, text="Gender", font=('arial 18 bold'), fg='black',  
bg='lightgreen')  
self.gender.place(x=0, y=180)
```

9. location

```
self.location = Label(self.left, text="Location", font=('arial 18 bold'), fg='black',  
bg='lightgreen')  
self.location.place(x=0, y=220)
```

10. appointment time

```
self.time = Label(self.left, text="Appointment Time", font=('arial 18 bold'), fg='black',  
bg='lightgreen')  
self.time.place(x=0, y=260)
```

11. phone

```
self.phone = Label(self.left, text="Phone Number", font=('arial 18 bold'), fg='black',  
bg='light green')  
self.phone.place(x=0, y=300)
```

12. Entries for all labels=====

```
self.name_ent = Entry(self.left, width=30)  
self.name_ent.place(x=250, y=100)  
self.age_ent = Entry(self.left, width=30)  
self.age_ent.place(x=250, y=140)  
self.gender_ent = Entry(self.left, width=30)  
self.gender_ent.place(x=250, y=180)  
self.location_ent = Entry(self.left, width=30)  
self.location_ent.place(x=250, y=220)  
self.time_ent = Entry(self.left, width=30)  
self.time_ent.place(x=250, y=260)  
self.phone_ent = Entry(self.left, width=30)  
self.phone_ent.place(x=250, y=300)  
# button to perform a command
```

```

self.submit = Button(self.left, text="Add
Appointment", width=20, height=2, bg='steel
blue', command=self.add_appointment)
self.submit.place(x=300, y=340)

```

```

# getting the number of appointments fixed to
view in the log
sql2 = "SELECT ID FROM appointments "
self.result = c.execute(sql2)
for self.row in self.result: self.id = self.row[0]
ids.append(self.id)

```

```

# ordering the ids
self.new = sorted(ids)
self.final_id = self.new[len(ids)-1]
# displaying the logs in our right frame
self.logs = Label(self.right, text="Logs",
font=('arial 28 bold'), fg='white', bg='steelblue')
self.logs.place(x=0, y=0)

```

```

self.box = Text(self.right, width=50, height=40)
self.box.place(x=20, y=60)
self.box.insert(END, "Total Appointments till
now : " + str(self.final_id))
# funtion to call when the submit button is clicked
def add_appointment(self):
# getting the user inputs
self.val1 = self.name_ent.get()
self.val2 = self.age_ent.get()
self.val3 = self.gender_ent.get()
self.val4 = self.location_ent.get()
self.val5 = self.time_ent.get()
self.val6 = self.phone_ent.get()

```

```

# checking if the user input is empty
if self.val1 == " or self.val2 == " or self.val3 == "
or self.val4 == " or self.val5 == ":
tkinter.messagebox.showinfo("Warning", "Please
Fill Up All Boxes")
else:
# now we add to the database

```



```
sql = "INSERT INTO 'appointments' (name, age,  
gender, location, scheduled_time, phone)  
VALUES(?, ?, ?, ?, ?, ?)"  
c.execute(sql, (self.val1, self.val2, self.val3,  
self.val4, self.val5, self.val6))  
conn.commit()  
print("successfull added to the database")  
# creating the object  
  
root = Tk()  
  
b = Application(root)  
  
# resolution of the window  
root.geometry("1200x720+0+0")  
  
# preventing the resize feature  
root.resizable(False, False)  
  
# end the loop root.mainloop()
```