**System Implementations**

**Recommended System Requirements**

Processors: Intel® Core™ i3 processor 4300M at 2.60 GHz.

Disk space: 4 to 8 GB.

Operating systems: Windows® 10, MACOS, and UBUNTU.

Python Versions: 3.X.X or Higher.

**Minimum System Requirements**

Processors: Intel Atom® processor or Intel® Core™ i3 processor.

Disk space: 1 GB.

Operating systems: Windows 7 or later, MACOS, and UBUNTU.

Python Versions: 2.7.X, 3.9.X.

**ACKNOWLEDGEMENT**TTT

First and foremost, praises and thanks to the God, the Almighty, for His showers of blessings throughout my research work to complete the research successfully.

We would like to express my deep and sincere gratitude to my subject teacher, Mr. Amit Udiwal, for giving me the opportunity to do research and providing invaluable guidance throughout this research. His dynamism, vision, sincerity and motivation have deeply inspired me. He has taught me the methodology to carry out the research and to present the research works as clearly as and honour to work and study under his guidance. We are very much thankful to our Sr. Jasmin for giving valuable time and moral support to develop this software. We would like to take opportunity to extend my sincere thanks and gratitude to our parents for being a source of inspiration and providing time and freedom to develop this software project. We also feel indebted to my friends for the valuable suggestions during the project work.

Suffista Nagori

[Roll No.

Class XII

**CERTIFICATE**

This is to certify that the project on ‘Hospital Management System’ is a work done by Suffista Nagori fulfilment of CBSE’S AISSCE EXAMINATION 2020¢and has been carried out under my direct supervision and guidance. This report or a similar report on the topic has not been submitted for any other examination and does not form any other examination and does not form any other course undergone by the candidate.

Name:

Suffista Nagori [Roll No.

………………….

Signature of Teacher / Guide

Name: Mr. Amit Udiwal

Designation:

………………. ….………………

**REFERENCE**

The order to work on this project on ‘**Hospital Management System**’ the following books & literature are referred by me during the various phrases of department of the project.

• http://www.python.org/.

• http://www.itsourcecode.org/.

• http://www.wikipedia.org/.

• Informatics Practices for Class XII

- By Sumita Arora

• Together with informatics practices.

Other than the above mentioned books, the suggestions and supervision of my teacher and my class experience also helped me to develop this software project.

**Introduction**

Hospital Management System project in Python focuses mainly on dealing with appointment bookings by inserting patient’s and doctor’s records. Also, the system displays all the available details of patients, and doctors with their respective names, contact information, address, date, and time. In addition, the system lists out all the available appointments which include doctor’s and patient’s names with their date and time respectively. There’s only an admin panel in this system for the management aspects. In an overview of this python web app, the user needs to first insert data under the patient and doctor’s section, then he/she can proceed towards appointment booking. So, when it comes to booking appointments, the user should select available patients, doctor’s names and select the exact date and time. Besides, the dashboard displays the total available records of each section.

Last but not least, a clean and simple dashboard is presented with simple color combinations for greater user experience while using this simple hospital management system project in Python with Flask Web Framework. For its UI elements, a free open-source CSS framework; Bootstrap is on board with some Vanilla CSS too.

**Objective and**

**Scope of The Project**

All this work is done manually by the receptionist and other operational staff and lot of papers are needed to be handled and taken care of. Doctors have to remember various medicines available for diagnosis and sometimes miss better altematives as they can't remember them at that time. The limited time and resources have restricted us to incorporate, in this project, only main activities that are performed in a Hospital Management System, but utmost care has been taken to make the system efficient and user friendly.

***Functions:***

* Admin Panel
* Patient Management
* Doctor Management
* Book Appointments
* Manage Appointments
* Search Records

**Hospital Management System**

import Read\_Hospital\_Excel\_Sheet

import Write\_Hospital\_Excel\_Sheet

def AppointmentIndexInDoctorsDataBase (patient\_ID) :

for i in Doctors\_DataBase :

for j in Doctors\_DataBase[i] :

if str(patient\_ID) == str(j[0]) :

Appointment\_index = Doctors\_DataBase[i].index(j)

return Appointment\_index,i

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

print("\* \*")

print("\* Welcome to Hospital Management System \*")

print("\* \*")

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

tries = 0

tries\_flag = ""

while tries\_flag != "Close the program" :

Patients\_DataBase = Read\_Hospital\_Excel\_Sheet.Read\_Patients\_DataBase()

Doctors\_DataBase = Read\_Hospital\_Excel\_Sheet.Read\_Doctors\_DataBase()

print("-----------------------------------------")

print("|Enter 1 for Admin mode |\n|Enter 2 for User mode |")

print("-----------------------------------------")

Admin\_user\_mode = input("Enter your mode : ")

if Admin\_user\_mode == "1" : #Admin mode

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n| Welcome to admin mode |\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

Password = input("Please enter your password : ")

while True :

if Password == "1234" :

print("-----------------------------------------")

print("|To manage patients Enter 1 |\n|To manage doctors Enter 2 |\n|To manage appointments Enter 3 |\n|To be back Enter E |")

print("-----------------------------------------")

AdminOptions = input ("Enter your choice : ")

AdminOptions = AdminOptions.upper()

if AdminOptions == "1" : #Admin mode --> Pateints Management

print("-----------------------------------------")

print("|To add new patient Enter 1 |")

print("|To display patient Enter 2 |")

print("|To delete patient data Enter 3 |")

print("|To edit patient data Enter 4 |")

print("|To Back enter E |")

print("-----------------------------------------")

Admin\_choice = input ("Enter your choice : ")

Admin\_choice = Admin\_choice.upper()

if Admin\_choice == "1" : #Admin mode --> Pateints Management --> Enter new patient data

try : #To avoid non integer input

patient\_ID = int(input("Enter patient ID : "))

while patient\_ID in Patients\_DataBase : #if Admin entered used ID

patient\_ID = int(input("This ID is unavailable, please try another ID : "))

Department=input("Enter patient department : ")

DoctorName=input("Enter name of doctor following the case : ")

Name =input("Enter patient name : ")

Age =input("Enter patient age : ")

Gender =input("Enter patient gender : ")

Address =input("Enter patient address : ")

RoomNumber=input("Enter patient room number : ")

Patients\_DataBase[patient\_ID]=[Department,DoctorName,Name,Age,Gender,Address,RoomNumber]

print("----------------------Patient added successfully----------------------")

except :

print("Patient ID should be an integer number")

elif Admin\_choice == "2" : #Admin mode --> Pateints Management --> Display patient data

try : #To avoid non integer input

patient\_ID = int(input("Enter patient ID : "))

while patient\_ID not in Patients\_DataBase :

patient\_ID = int(input("Incorrect ID, Please Enter patient ID : "))

print("\npatient name : ",Patients\_DataBase[patient\_ID][2])

print("patient age : ",Patients\_DataBase[patient\_ID][3])

print("patient gender : ",Patients\_DataBase[patient\_ID][4])

print("patient address : ",Patients\_DataBase[patient\_ID][5])

print("patient room number : ",Patients\_DataBase[patient\_ID][6])

print("patient is in "+Patients\_DataBase[patient\_ID][0]+" department")

print("patient is followed by doctor : "+Patients\_DataBase[patient\_ID][1])

except :

print("Patient ID should be an integer number")

elif Admin\_choice == "3" : #Admin mode --> Pateints Management --> Delete patient data

try : #To avoid non integer input

patient\_ID = int(input("Enter patient ID : "))

while patient\_ID not in Patients\_DataBase :

patient\_ID = int(input("Incorrect ID, Please Enter patient ID : "))

Patients\_DataBase.pop(patient\_ID)

print("----------------------Patient data deleted successfully----------------------")

except :

print("Patient ID should be an integer number")

elif Admin\_choice == "4" : #Admin mode --> Pateints Management --> Edit patient data

try : #To avoid non integer input

patient\_ID=int(input("Enter patient ID : "))

while patient\_ID not in Patients\_DataBase :

patient\_ID = int(input("Incorrect ID, Please Enter patient ID : "))

while True :

print("------------------------------------------")

print("|To Edit pateint Department Enter 1 : |")

print("|To Edit Doctor following case Enter 2 : |")

print("|To Edit patient Name Enter 3 : |")

print("|To Edit patient Age Enter 4 : |")

print("|To Edit patient Gender Enter 5 : |")

print("|To Edit patient Address Enter 6 : |")

print("|To Edit patient RoomNumber Enter 7 : |")

print("|To be Back Enter E |")

print("-----------------------------------------")

Admin\_choice = input("Enter your choice : ")

Admin\_choice = Admin\_choice.upper()

if Admin\_choice == "1" :

Patients\_DataBase[patient\_ID][0]=input("\nEnter patient department : ")

print("----------------------Patient Department edited successfully----------------------")

elif Admin\_choice == "2" :

Patients\_DataBase[patient\_ID][1]=input("\nEnter Doctor follouing case : ")

print("----------------------Doctor follouing case edited successfully----------------------")

elif Admin\_choice == "3" :

Patients\_DataBase[patient\_ID][2]=input("\nEnter patient name : ")

print("----------------------Patient name edited successfully----------------------")

elif Admin\_choice == "4" :

Patients\_DataBase[patient\_ID][3]=input("\nEnter patient Age : ")

print("----------------------Patient age edited successfully----------------------")

elif Admin\_choice == "5" :

Patients\_DataBase[patient\_ID][4]=input("\nEnter patient gender : ")

print("----------------------Patient address gender successfully----------------------")

elif Admin\_choice == "6" :

Patients\_DataBase[patient\_ID][5]=input("\nEnter patient address : ")

print("----------------------Patient address edited successfully----------------------")

elif Admin\_choice == "7" :

Patients\_DataBase[patient\_ID][6]=input("\nEnter patient RoomNumber : ")

print("----------------------Patient Room Number edited successfully----------------------")

elif Admin\_choice == "E" :

break

else :

print("Please Enter a correct choice")

except :

print("Patient ID should be an integer number")

elif Admin\_choice == "E" : #Admin mode --> Pateints Management --> Back

break

else :

print("Please enter a correct choice\n")

elif AdminOptions == "2" : #Admin mode --> Doctors Management

print("-----------------------------------------")

print("|To add new doctor Enter 1 |")

print("|To display doctor Enter 2 |")

print("|To delete doctor data Enter 3 |")

print("|To edit doctor data Enter 4 |")

print("|To be back enter E |")

print("-----------------------------------------")

Admin\_choice = input ("Enter your choice : ")

Admin\_choice = Admin\_choice.upper()

if Admin\_choice == "1" : #Admin mode --> Doctors Management --> Enter new doctor data

try : #To avoid non integer input

Doctor\_ID = int(input("Enter doctor ID : "))

while Doctor\_ID in Doctors\_DataBase : #if Admin entered used ID

Doctor\_ID = int(input("This ID is unavailable, please try another ID : "))

Department=input("Enter Doctor department : ")

Name =input("Enter Doctor name : ")

Address =input("Enter Doctor address : ")

Doctors\_DataBase[Doctor\_ID]=[[Department,Name,Address]]

print("----------------------Doctor added successfully----------------------")

except :

print("Doctor ID should be an integer number")

elif Admin\_choice == "2" : #Admin mode --> Doctors Management --> Display doctor data

try : #To avoid non integer input

Doctor\_ID = int(input("Enter doctor ID : "))

while Doctor\_ID not in Doctors\_DataBase :

Doctor\_ID = int(input("Incorrect ID, Please Enter doctor ID : "))

print("Doctor name : ",Doctors\_DataBase[Doctor\_ID][0][1])

print("Doctor address : ",Doctors\_DataBase[Doctor\_ID][0][2])

print("Doctor is in "+Doctors\_DataBase[Doctor\_ID][0][0]+" department")

except :

print("Doctor ID should be an integer number")

elif Admin\_choice == "3" : #Admin mode --> Doctors Management --> Delete doctor data

try : #To avoid non integer input

Doctor\_ID = int(input("Enter doctor ID : "))

while Doctor\_ID not in Doctors\_DataBase :

Doctor\_ID = int(input("Incorrect ID, Please Enter doctor ID : "))

Doctors\_DataBase.pop(Doctor\_ID)

print("/----------------------Doctor data deleted successfully----------------------/")

except :

print("Doctor ID should be an integer number")

elif Admin\_choice == "4" : #Admin mode --> Doctors Management --> Edit Doctor data

try : #To avoid non integer input

Doctor\_ID=input("Enter doctor ID : ")

while Doctor\_ID not in Doctors\_DataBase :

Doctor\_ID = int(input("Incorrect ID, Please Enter doctor ID : "))

print("-----------------------------------------")

print("|To Edit doctor's department Enter 1 |")

print("|To Edit doctor's name Enter 2 |")

print("|To Edit doctor's address Enter 3 |")

print("To be Back Enter E |")

print("-----------------------------------------")

Admin\_choice=input("Enter your choice : ")

Admin\_choice = Admin\_choice.upper()

if Admin\_choice == "1" :

Doctors\_DataBase[Doctor\_ID][0][0]=input("Enter Doctor's Department : ")

print("/----------------------Doctor's department edited successfully----------------------/")

elif Admin\_choice == "2" :

Doctors\_DataBase[Doctor\_ID][0][1]=input("Enter Doctor's Name : ")

print("----------------------Doctor's name edited successfully----------------------")

elif Admin\_choice == "3" :

Doctors\_DataBase[Doctor\_ID][0][2]=input("Enter Doctor's Address : ")

print("----------------------Doctor's address edited successfully----------------------")

elif Admin\_choice == "E" :

break

else :

print("\nPlease enter a correct choice\n")

except :

print("Doctor ID should be an integer number")

elif Admin\_choice == "E" : #Back

break

else :

print("\nPlease enter a correct choice\n")

elif AdminOptions == "3" : #Admin mode --> Appointment Management

print("-----------------------------------------")

print("|To book an appointment Enter 1 |")

print("|To edit an appointment Enter 2 |")

print("|To cancel an appointment Enter 3 |")

print("|To be back enter E |")

print("-----------------------------------------")

Admin\_choice = input ("Enter your choice : ")

Admin\_choice = Admin\_choice.upper()

if Admin\_choice == "1" : #Admin mode --> Appointment Management --> Book an appointment

try : #To avoid non integer input

Doctor\_ID = int(input("Enter the ID of doctor : "))

while Doctor\_ID not in Doctors\_DataBase :

Doctor\_ID = int(input("Doctor ID incorrect, Please enter a correct doctor ID : "))

print("---------------------------------------------------------")

print("|For book an appointment for an exist patient Enter 1 |\n|For book an appointment for a new patient Enter 2 |\n|To be Back Enter E |")

print("---------------------------------------------------------")

Admin\_choice = input ("Enter your choice : ")

Admin\_choice = Admin\_choice.upper()

if Admin\_choice == "1" :

patient\_ID = int(input("Enter patient ID : "))

while patient\_ID not in Patients\_DataBase : #if Admin entered incorrect ID

patient\_ID = int(input("Incorrect ID, please Enter a correct patient ID : "))

elif Admin\_choice == "2" :

patient\_ID = int(input("Enter patient ID : "))

while patient\_ID in Patients\_DataBase : #if Admin entered used ID

patient\_ID = int(input("This ID is unavailable, please try another ID : "))

Department=Doctors\_DataBase[Doctor\_ID][0][0]

DoctorName=Doctors\_DataBase[Doctor\_ID][0][1]

Name =input("Enter patient name : ")

Age =input("Enter patient age : ")

Gender =input("Enter patient gender : ")

Address =input("Enter patient address : ")

RoomNumber=""

Patients\_DataBase[patient\_ID]=[Department,DoctorName,Name,Age,Gender,Address,RoomNumber]

elif Admin\_choice == "E" :

break

Session\_Start = input("Session starts at : ")

while Session\_Start[ :2] == "11" or Session\_Start[ :2] == "12" :

Session\_Start = input("Appointments should be between 01:00PM to 10:00PM, Please enter a time between working hours : ")

for i in Doctors\_DataBase[Doctor\_ID] :

if type(i[0])!=str :

while Session\_Start >= i[1] and Session\_Start < i[2] :

Session\_Start = input("This appointment is already booked, Please Enter an other time for start of session : ")

Session\_End = input("Session ends at : ")

New\_Appointment=list()

New\_Appointment.append(patient\_ID)

New\_Appointment.append(Session\_Start)

New\_Appointment.append(Session\_End)

Doctors\_DataBase[Doctor\_ID].append(New\_Appointment)

print("/----------------------Appointment booked successfully----------------------/")

except :

print("Doctor ID should be an integer number")

elif Admin\_choice == "2" : #Admin mode --> Appointment Management --> Edit an appointment

try : #To avoid non integer input

patient\_ID = int(input("Enter patient ID : "))

while patient\_ID not in Patients\_DataBase :

patient\_ID = int(input("Incorrect Id, Please Enter correct patient ID : "))

try : #To avoid no return function

AppointmentIndex,PairKey = AppointmentIndexInDoctorsDataBase(patient\_ID)

Session\_Start = input ("Please enter the new start time : ")

while Session\_Start[ :2] == "11" or Session\_Start[ :2] == "12" :

Session\_Start = input("Appointments should be between 01:00PM to 10:00PM, Please enter a time between working hours : ")

for i in Doctors\_DataBase[Doctor\_ID] :

if type(i[0])!=str :

while Session\_Start >= i[1] and Session\_Start < i[2] :

Session\_Start = input("This appointment is already booked, Please Enter an other time for start of session : ")

Session\_End = input ("Please enter the new end time : ")

Doctors\_DataBase[PairKey][AppointmentIndex]=[patient\_ID,Session\_Start,Session\_End]

print("/----------------------appointment edited successfully----------------------/")

except :

print("No Appointment for this patient")

except :

print("Doctor ID should be an integer number")

elif Admin\_choice == "3" : #Admin mode --> Appointment Management --> Cancel an appointment

try : #To avoid non integer input

patient\_ID = int(input("Enter patient ID : "))

while patient\_ID not in Patients\_DataBase :

patient\_ID = int(input("Invorrect ID, Enter patient ID : "))

try :

AppointmentIndex,PairKey = AppointmentIndexInDoctorsDataBase(patient\_ID)

Doctors\_DataBase[PairKey].pop(AppointmentIndex)

print("/----------------------appointment canceled successfully----------------------/")

except :

print("No Appointment for this patient")

except : #To avoid no return function

print("Patient ID should be an integer number")

elif Admin\_choice == "E" : #Back

break

else :

print("please enter a correct choice")

elif AdminOptions == "E" : #Back

break

else :

print("Please enter a correct option")

elif Password != "1234" :

if tries < 2 :

Password = input("Password incorrect, please try again : ")

tries += 1

else :

print("Incorrect password, no more tries")

tries\_flag = "Close the program"

break

Write\_Hospital\_Excel\_Sheet.Write\_Patients\_DataBase(Patients\_DataBase)

Write\_Hospital\_Excel\_Sheet.Write\_Doctors\_DataBase(Doctors\_DataBase)

elif Admin\_user\_mode == "2" : #User mode

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n| Welcome to user mode |\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

while True :

print("\n-----------------------------------------")

print("|To view hospital's departments Enter 1 |")

print("|To view hospital's doctors Enter 2 |")

print("|To view patients' residents Enter 3 |")

print("|To view patient's details Enter 4 |")

print("|To view doctor's appointments Enter 5 |")

print("|To be Back Enter E |")

print("-----------------------------------------")

UserOptions = input("Enter your choice : ")

UserOptions = UserOptions.upper()

if UserOptions == "1" : #User mode --> view hospital's departments

print("Hospital's departments :")

for i in Doctors\_DataBase :

print(" "+Doctors\_DataBase[i][0][0])

elif UserOptions == "2" : #User mode --> view hospital's Doctors

print("Hospital's doctors :")

for i in Doctors\_DataBase :

print(" "+Doctors\_DataBase[i][0][1]+" in "+Doctors\_DataBase[i][0][0]+" department, from "+Doctors\_DataBase[i][0][2])

elif UserOptions == "3" : #User mode --> view patients' residents

for i in Patients\_DataBase :

print(" Patient : "+Patients\_DataBase[i][2]+" in "+Patients\_DataBase[i][0]+" department and followed by "+Patients\_DataBase[i][1]+", age : "+Patients\_DataBase[i][3]+", from : "+Patients\_DataBase[i][5]+", RoomNumber : "+Patients\_DataBase[i][6])

elif UserOptions == "4" : #User mode --> view patient's details

try : #To avoid non integer input

patient\_ID = int(input("Enter patient's ID : "))

while patient\_ID not in Patients\_DataBase :

patient\_ID = int(input("Incorrect Id, Please enter patient ID : "))

print(" patient name : ",Patients\_DataBase[patient\_ID][2])

print(" patient age : ",Patients\_DataBase[patient\_ID][3])

print(" patient gender : ",Patients\_DataBase[patient\_ID][4])

print(" patient address : ",Patients\_DataBase[patient\_ID][5])

print(" patient room number : ",Patients\_DataBase[patient\_ID][6])

print(" patient is in "+Patients\_DataBase[patient\_ID][0]+" department")

print(" patient is followed by doctor : "+Patients\_DataBase[patient\_ID][1])

except :

print("Patient ID should be an integer number")

elif UserOptions == "5" : #User mode --> view doctor's appointments

try : #To avoid non integer input

Doctor\_ID = int(input("Enter doctor's ID : "))

while Doctor\_ID not in Doctors\_DataBase :

Doctor\_ID = int(input("Incorrect Id, Please enter doctor ID : "))

print(Doctors\_DataBase[Doctor\_ID][0][1]+" has appointments :")

for i in Doctors\_DataBase[Doctor\_ID] :

if type(i[0])==str :

continue

else :

print(" from : "+i[1]+" to : "+i[2])

except :

print("Doctor ID should be an integer number")

elif UserOptions == "E" : #Back

break

else :

print("Please Enter a correct choice")

else :

print("Please choice just 1 or 2")