**THE HINDU SENIOR SECONDARY SCHOOL**

**TRIPLICANE, CHENNAI – 600005**



**COMPUTER SCIENCE PROJECT**

**2022 – 2023**

**TOPIC: RAILWAY MANAGEMENT SYSTEM**

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**THE HINDU SENIOR SECONDARY SCHOOL,**

**CHENNAI – 600005**

**REGISTER NUMBER:**

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**BONAFIDE CERTIFICATE**

Certified to be the Bonafide for the project work done by Master/Miss\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of class XII in **THE HINDU SENIOR SECONDARY SCHOOL, CHENNAI** during the year 2021-2022.

Dated\_\_\_\_\_\_\_\_\_\_\_\_ Signature of the teacher

(P.G.T in Computer Science)

School Seal

Submitted for All India Senior Secondary Practical Examination held in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Chennai

Dated\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature of External Examiner

External Examiner number

**2**

**ACKNOWLEDGEMENT**

There are many people who have helped us in making this project a successful one. We would like to thank the school management and principal Smt. Alamelu Raghavan. We extend our gratitude to our beloved computer science teacher, Smt. S. Siva Prabha for her guidance.

We also thank our parents for their support. We cannot forget our sincere thanks to our classmates who have helped us to conduct this project work successfully and for their valuable advice and support which we received from time to time.

We wish to express our deep gratitude and sincere thanks to those helping hands without whom this project would have been completed.

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**INTRODUCTION**

**Title of the project:**

Railway Management System

**Prologue:**

Our website has various kinds of information that helps regarding booking of tickets via railways . Users will be able to search the train availability , the exact fare ,the arrival and departure time of the train and They can also book the ticket by using the debit ,credit or master card and after booking the ticket if the user want to cancel it then they can easily do it also.

**Team details:**

The project “Railway Management System” has been designed and developed solely by the fore mentioned individuals. The various components of the project were shared between the members i.e., the coding and project compiling was done by **M. Karthi Raman**, the documentation was done by **R.V. Bhagyashri** and were tested by **dhivyasri.**

**Objectives:**

The objective of the online railway ticket reservation system .

Project is to design software to fully automate the process of issuing a railway ticket.

1. To create a database of the trains

2. To search the trains it’s arrival and departure time, distance between source and destination.

3.To check the availability of the ticket.

4. To calculate fare.

5.To book the ticket.

6.To cancel the ticket if necessary

**SYSTEM REQUIREMENTS**

**Hardware involved:**

 A laptop/desktop with Windows 10 OS

 64 – bit architecture CPU

8gb RAM

**Software involved:**

 PyCharm Community Edition 2021.2.2

 Python 3.9.7(64 - bit)

MySQL 8.0 Server

**SOFTWARE DETAILS**

**Front End – Tkinter:**

Python has a lot of GUI frameworks, but Tkinter is the only framework that’s built into the Python standard library. Tkinter has several strengths. It’s cross-platform, so the same code works on Windows, macOS, and Linux. Visual elements are rendered using native operating system elements, so applications built with Tkinter look like they belong on the platform where they’re run.

Tkinter is lightweight and relatively painless to use compared to other frameworks. This makes it a compelling choice for building GUI applications in Python, especially for applications where a modern sheen is unnecessary, and the top priority is to build something that’s functional and cross-platform quickly.

**Back End – MySQL:**

It is open source, reliable, compatible with all major hosting providers, cost-effective, and easy to manage. Many organizations are leveraging the data security and strong transactional support offered by MySQL to secure online transactions and enhance customer interactions.

**SOURCE CODE**

fromtkinter import \*

import tkinter as tk

import mysql.connector as myc

from tkinter import messagebox

import random

from tkinter import ttk

import os

#creating main window and title,gemoetr,bg of the window and also the icon for the window

root =tk.Tk()

root.title("RAILWAY MANAGEMENT SYSTEM")

root.iconbitmap("D:\Computer Science project RAILWAY MANAGEMENT SYSTEM 2022-23\icon.ico")

root.config(bg="green")

root.geometry("1000x1000")

#background wallpaper for the window and frames

g=PhotoImage(file="D:\Computer Science project RAILWAY MANAGEMENT SYSTEM 2022-23\wallpaperflare.com\_wallpaper.png")

background\_label=Label(root,image=g)

background\_label.place(x=0,y=0,relwidth=1,relheight=1)

#title of the project as label

main\_lab=Label(root,text='RAILWAY RESERVATION SYSTEM',fg="Dark blue",bg="gray",font=("Italic",30))

main\_lab.pack()

#frame for the main buttons

mainframe=Frame(root,bg="gray")

mainframe.place(x=350,y=90,height=350,width=600)

def showtkt():

global trv

mainframe.destroy()

con=myc.connect(user="root",host="localhost",password="KR007@12345",database="irctc")

cur=con.cursor()

cur.execute("select \* from train")

e=cur.fetchall()

showframe=Frame(root,bg="Indigo")

showframe.place(x=250,y=90,height=400,width=1000)

s=ttk.Style()

s.configure('Treeview', rowheight=40,columnheight=40)

trv=ttk.Treeview(showframe,selectmode="browse")

trv.place(x=25,y=45,width=1000,height=400)

trv['columns']=("1","2","3","4","5","6","7","8","9")

trv["show"]='headings'

trv.column("1",width=100,anchor='c')

trv.column("2",width=100,anchor='c')

trv.column("3",width=100,anchor='c')

trv.column("4",width=100,anchor='c')

trv.column("6",width=60,anchor='c')

trv.column("7",width=100,anchor='c')

trv.column("8",width=100,anchor='c')

trv.column("9",width=100,anchor='c')

trv.heading("1",text="PNR\_No")

trv.heading("2",text="Train Name")

trv.heading("3",text="SOurce Station")

trv.heading("4",text="Destination")

trv.heading("5",text="Name of the passenger")

trv.heading("6",text="Gender")

trv.heading("7",text="Fare")

trv.heading("8",text="Time of travel")

trv.heading("9",text="Age")

for i in e:

#print(i)

trv.insert("",'end',iid=i[0],values=(i[0],i[1],i[2],i[3],i[4],i[5],i[6],i[7],i[8]))

def fare():

global fare\_lab\_N,fare1

#fare label

fare\_label=Label(booktkt\_frame,text="Fare of the tkt:",bg="lightgray",font=("Corbert Condensed Italic",18),fg="red")

fare\_label.place(x=275,y=415)

fare1=StringVar(root)

fare1.set("500")

# fare2=fare1.get()

# print(fare2)

fare\_lab\_N=Label(booktkt\_frame,text="250",textvariable=fare1,bg="lightgray",font=(18))

fare\_lab\_N.place(x=275,y=450)

if value\_inside.get()== "Shatabdi":

fare1.set("400")

elif value\_inside.get() == "Pallavan":

fare1.set("500")

elif value\_inside.get()=="CSF Express":

fare1.set("700")

elif value\_inside.get()=="Vaigai":

fare1.set("800")

elif value\_inside.get()=="Hazrat Nizamuddin":

fare1.set("900")

elif value\_inside.get()=="Kacheguda":

fare1.set("1400")

elif value\_inside.get()=="Tejas":

fare1.set("16000")

elif value\_inside.get()=="Vande Bharat":

fare1.set("4000")

def timeop():

global time\_inside

time\_list=["2:00PM","3:00PM","11:00PM","10:30PM","5:00PM"]

time\_inside=tk.StringVar(root)

time\_inside.set("Select your time:")

time\_menu=tk.OptionMenu(booktkt\_frame,time\_inside,\*time\_list)

time\_menu.config(fg="red",bg="yellow",font=("Helvetica",16))

time\_menu.place(x=375,y=350)

def genop():

global gen\_inside

gen\_list=["M","F"]

gen\_inside=tk.StringVar(root)

gen\_inside.set("Select your gender:")

gen\_menu=tk.OptionMenu(booktkt\_frame,gen\_inside,\*gen\_list)

gen\_menu.config(fg="red",bg="yellow",font=("Helvetica",16))

gen\_menu.place(x=25,y=350)

def desop():

global des\_inside

des\_list=["Trivandrum-PK","Munnar-M","Seconderabad-SEC","Telangana-Tel"]

des\_inside=tk.StringVar(root)

des\_inside.set("Select you Destination:")

des\_menu=tk.OptionMenu(booktkt\_frame,des\_inside,\*des\_list)

des\_menu.config(fg="red",bg="yellow",font=("Helvetica",16))

des\_menu.place(x=375,y=165)

def souop():

global sou\_inside

sou\_list=["Chennai Egmore-MS","Tiruchirappalli-TPJ","Mangalore-Mn","Madura-MDS","Rameswaram-RMS","Coimbatore-SL","guruvoyur-GV"]

sou\_inside=tk.StringVar(root)

sou\_inside.set("Select your source station:")

sou\_menu=tk.OptionMenu(booktkt\_frame,sou\_inside,\*sou\_list)

sou\_menu.config(fg="red",bg="yellow",font=("Helvetica",16))

sou\_menu.place(x=25,y=165)

#variables to store the data entered in textbox

def showop():

global value\_inside

options\_list = ["Shatabdi", "Pallavan", "CSF Express", "Vaigai","Hazrat Nizamuddin","Kacheguda","Tejas","Vande Bharat"]

# Variable to keep track of the option

# selected in OptionMenu

value\_inside = tk.StringVar(root)

# Set the default value of the variable

value\_inside.set("Select the train of your choice")

# Create the optionmenu widget and passing

# the options\_list and value\_inside to it.

question\_menu = tk.OptionMenu(booktkt\_frame, value\_inside, \*options\_list)

question\_menu.config(fg="red",bg="yellow",font=('Helvetica',16))

question\_menu.place(x=375,y=65)

# function of the button for deleting the ticket from the database

def deltkt():

tkt\_del=delete\_Entry.get()

con=myc.connect(user="root",host="localhost",password="KR007@12345",database="irctc")

cur=con.cursor()

cur.execute(f"delete from train where PNR\_No = '{tkt\_del}'")

print(cur.fetchall())

con.commit()

delete\_Entry.delete("0","end")

messagebox.showwarning("Deleted","Your ticket has been successfully deleted!!")

# function for the button to store it in the databse in MYSQL

def booktkt1():

if value\_inside.get()=="select train of your choice" or sou\_inside.get()=="Select your source station" or des\_inside.get()=="Select your destination" or namep\_entry.get()=="" or gen\_inside.get()=="Select your gender" or time\_inside.get()=="Select your time" or age\_entry.get()=="":

messagebox.showerror("Error","All fields are required")

else:

con=myc.connect(user="root",host="localhost",password="KR007@12345",database="irctc")

cur=con.cursor()

tkt\_1=str(r)

name=value\_inside.get()

source=sou\_inside.get()

destin=des\_inside.get()

namep=namep\_entry.get()

gen=gen\_inside.get()

fare=fare1.get()

time=time\_inside.get()

age=age\_entry.get()

cur.execute(f"INSERT INTO train values('{tkt\_1}','{name}','{source}','{destin}','{namep}','{gen}','{fare}','{time}','{age}')")

con.commit()

cur.execute("select PNR\_No from train")

T=cur.fetchall()

print(T)

buffer=[]

for i in T:

buffer.append(i[0])

print(buffer)

state = True

while state:

s=str(random.randint(19876542345600,29876542349000))

if s not in buffer:

buffer.append(s)

state=False

else:

state=True

print(s)

tkt\_PNR\_Lab.config(text=str(s))

namep\_entry.delete("0","end")

age\_entry.delete("0","end")

messagebox.showinfo("Done!!","Your ticket has been successfully saved to the database")

# tabulate function in python is used to tabulate the records and keep a track of the records

# The frame to book ticket and the labels and entries for the details

def booktkt():

global r,booktkt\_frame,con

con=myc.connect(user="root",host="localhost",password="KR007@12345",database="irctc")

cur=con.cursor()

cur.execute("create table if not exists train(PNR\_No varchar(30) primary key,Train\_name varchar(50),Source varchar(30),destination varchar(30),name\_of\_passenger varchar(30),gender char (1),fare varchar(30),time varchar(30),age varchar(30))")

con.commit()

global tkt\_entry,Name\_entry,Source\_entry,destin\_entry,namep\_entry,gender\_entry,tkt\_PNR\_Lab,age\_entry

mainframe.destroy()

booktkt\_frame=tk.Frame(root,bg="orange")

booktkt\_frame.place(x=450,y=90,width=700,height=700)

#PNR\_No

r=random.randint(19876542345600,29876542349000)

tkt\_label=Label(booktkt\_frame,text="PNR No:",bg="lightgray",font=("Corbert Condensed Italic",18),fg="red")

tkt\_label.place(x=25,y=25)

tkt\_PNR\_Lab=Label(booktkt\_frame,text=r,bg="lightgray",font=(18))

tkt\_PNR\_Lab.place(x=25,y=65)

#Train\_Name

Name\_label=Label(booktkt\_frame,text="Train Name:",bg="lightgray",font=("Corbert Condensed Italic",18),fg="red")

Name\_label.place(x=375,y=25)

showop()

# Name\_entry=Entry(root,font=("Corbert Condensed Italic",16),bg="lightgray")

# Name\_entry.place(x=800,y=240)

#Gender

Source\_label=Label(booktkt\_frame,text="Source:",bg="lightgray",font=("Corbert COndensed Italic",18),fg="red")

Source\_label.place(x=25,y=125)

souop()

#Destination

destin\_label=Label(booktkt\_frame,text="Destination:",bg="lightgray",font=("Corbert COndensed Italic",18),fg="red")

destin\_label.place(x=375,y=125)

desop()

#Name\_of\_passernger

namep\_label=Label(booktkt\_frame,text="Name of the passenger:",bg="lightgray",font=("Corbert Condensed Italic",18),fg="red")

namep\_label.place(x=25,y=225)

namep\_entry=Entry(booktkt\_frame,font=("Corbert Condensed Italic",16),bg="lightgray",width=25)

namep\_entry.place(x=25,y=265)

#Gender

gender\_label=Label(booktkt\_frame,text="Gender:",bg="lightgray",font=("Corbert Condensed Italic",18),fg="red")

gender\_label.place(x=25,y=310)

genop()

#signup button

input\_btn=Button(booktkt\_frame,text="Book your ticket",bg="Yellow",fg="Red",font=("Corbert Condensed Italic",18),padx=15,pady=15,command=booktkt1)

input\_btn.place(x=25,y=475)

#show fare btn

show\_fare=Button(booktkt\_frame,text="Show fare for the train",padx=5,pady=15,font=("Helvetica",18),fg="Skyblue",bg="Indigo",command=fare)

show\_fare.place(x=400,y=475)

#time button

time\_lab=Label(booktkt\_frame,text="Select your time of journey:",bg="lightgray",fg="red",font=("Helvetica",18))

time\_lab.place(x=375,y=310)

timeop()

#Age label

age\_lab=Label(booktkt\_frame,text="Enter your age:",bg="lightgray",fg="red",font=("Helvetica",18))

age\_lab.place(x=375,y=225)

age\_entry=Entry(booktkt\_frame,font=("Corbert Condensed Italic",16),bg="lightgray",width=25)

age\_entry.place(x=375,y=265)

# the main function for deleting ticket from the table and the frame for it

def cantkt():

global delete\_Entry

mainframe.destroy()

deltkt\_frame=tk.Frame(root,bg="pink")

deltkt\_frame.place(x=400,y=90,height=400,width=800)

delete\_btn=Label(root,text="Enter your PNR\_No to delete yout ticket:",bg="Yellow",fg="Red",font=("Corbert Condessed Italic",18))

delete\_btn.place(x=550,y=200)

delete\_Entry=Entry(root,font=("Corbert Condensed Italic",18),bg="lightgray",)

delete\_Entry.place(x=550,y=250)

del\_btn=Button(root,text="Delete your ticket",bg="red",fg="skyblue",padx=25,pady=25,font=('Helvetica',16),command=deltkt)

del\_btn.place(x=800,y=300)

# The main buttons for the main functions

book\_tkt\_btn=Button(mainframe,text="Book your ticket by clicking here !!",font=("Century Gothic",20),fg="Indigo",bg="light green",command=booktkt)

delete\_tkt\_btn=Button(mainframe,text="Cancel your ticket !!!",font=("Century Gothic",20),fg="Indigo",bg="light green",command=cantkt)

show\_tkt\_btn=Button(mainframe,text="View your ticket!!",font=("Century Gothic",20),fg="Indigo",bg="light green",command=showtkt)

# Placing of the buttons at their respective pixels

book\_tkt\_btn.place(x=45,y=25)

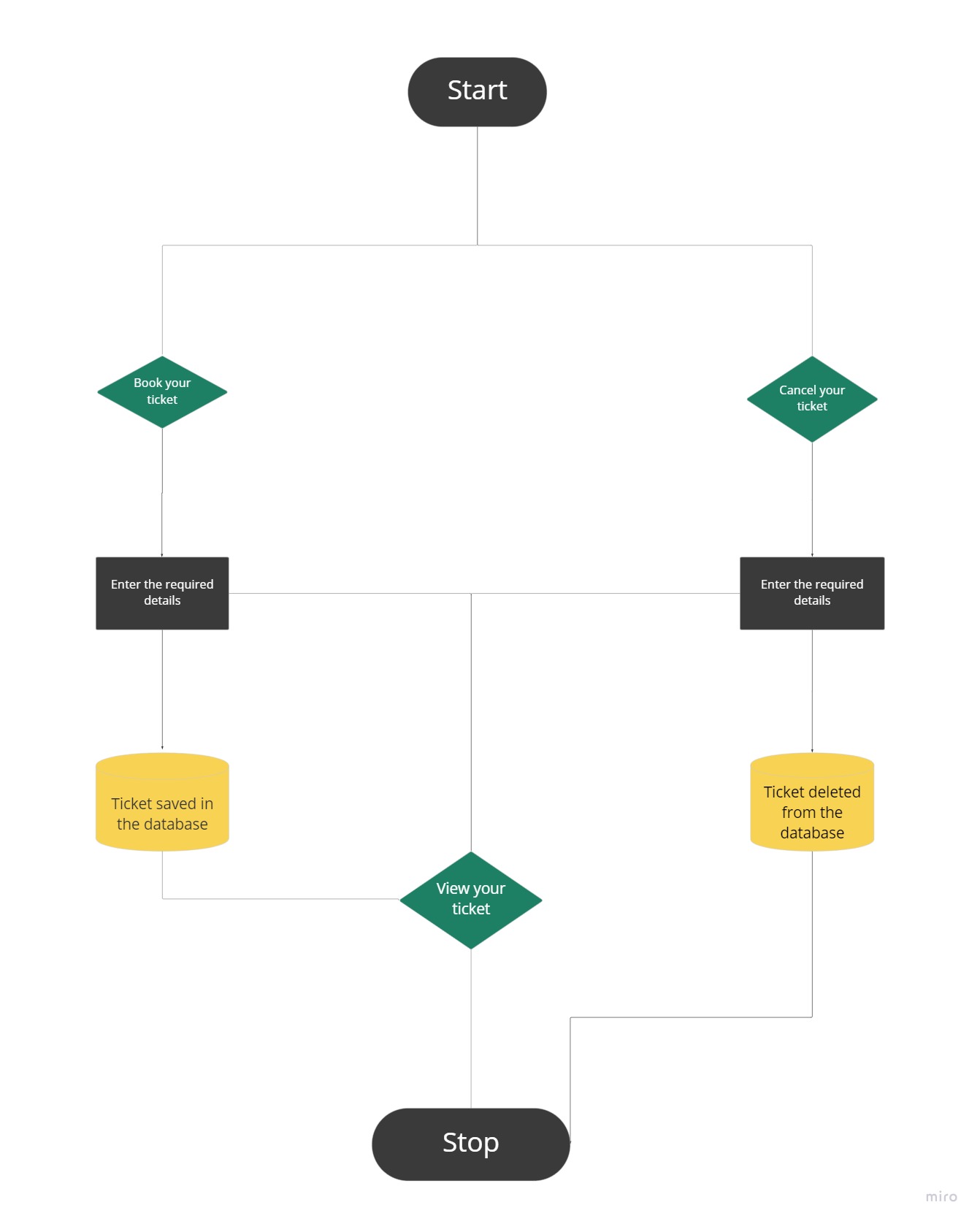
delete\_tkt\_btn.place(x=45,y=100)

show\_tkt\_btn.place(x=45,y=175)

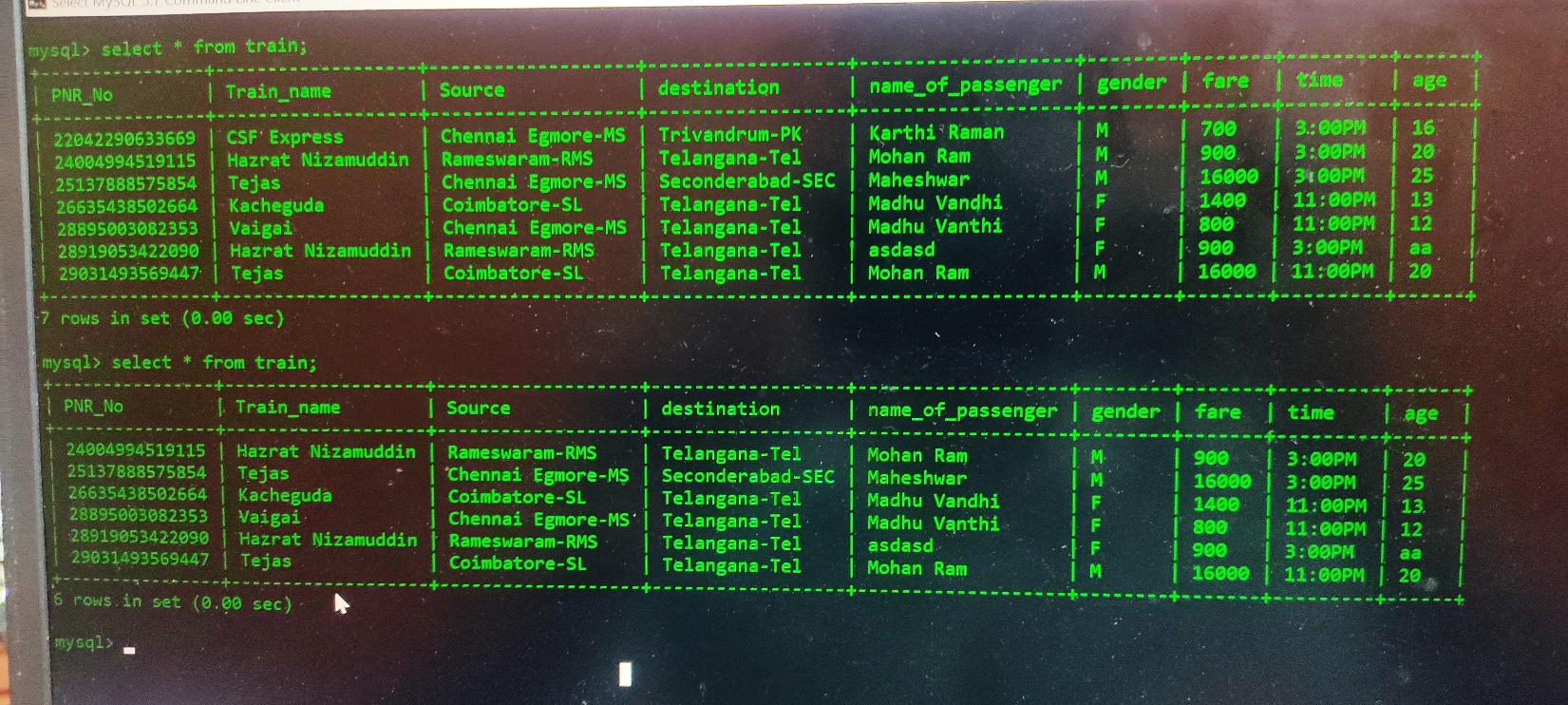
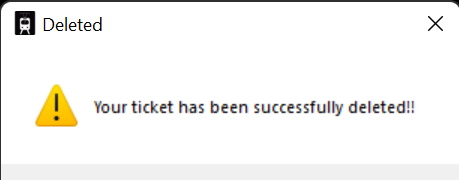
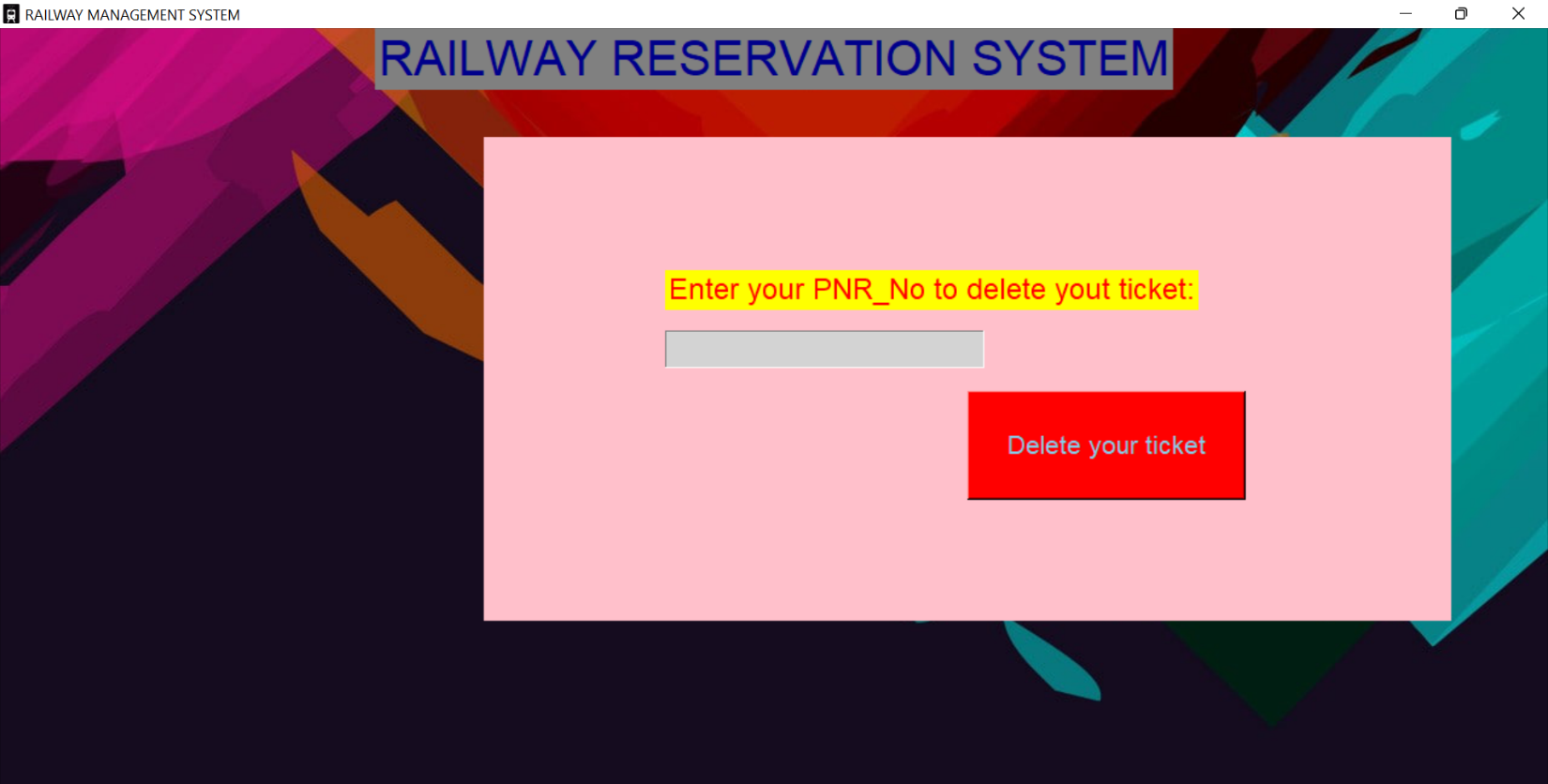
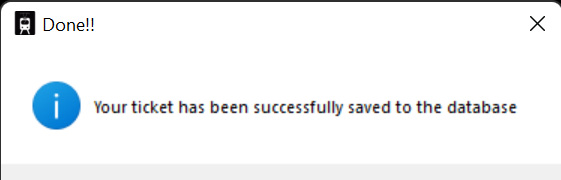
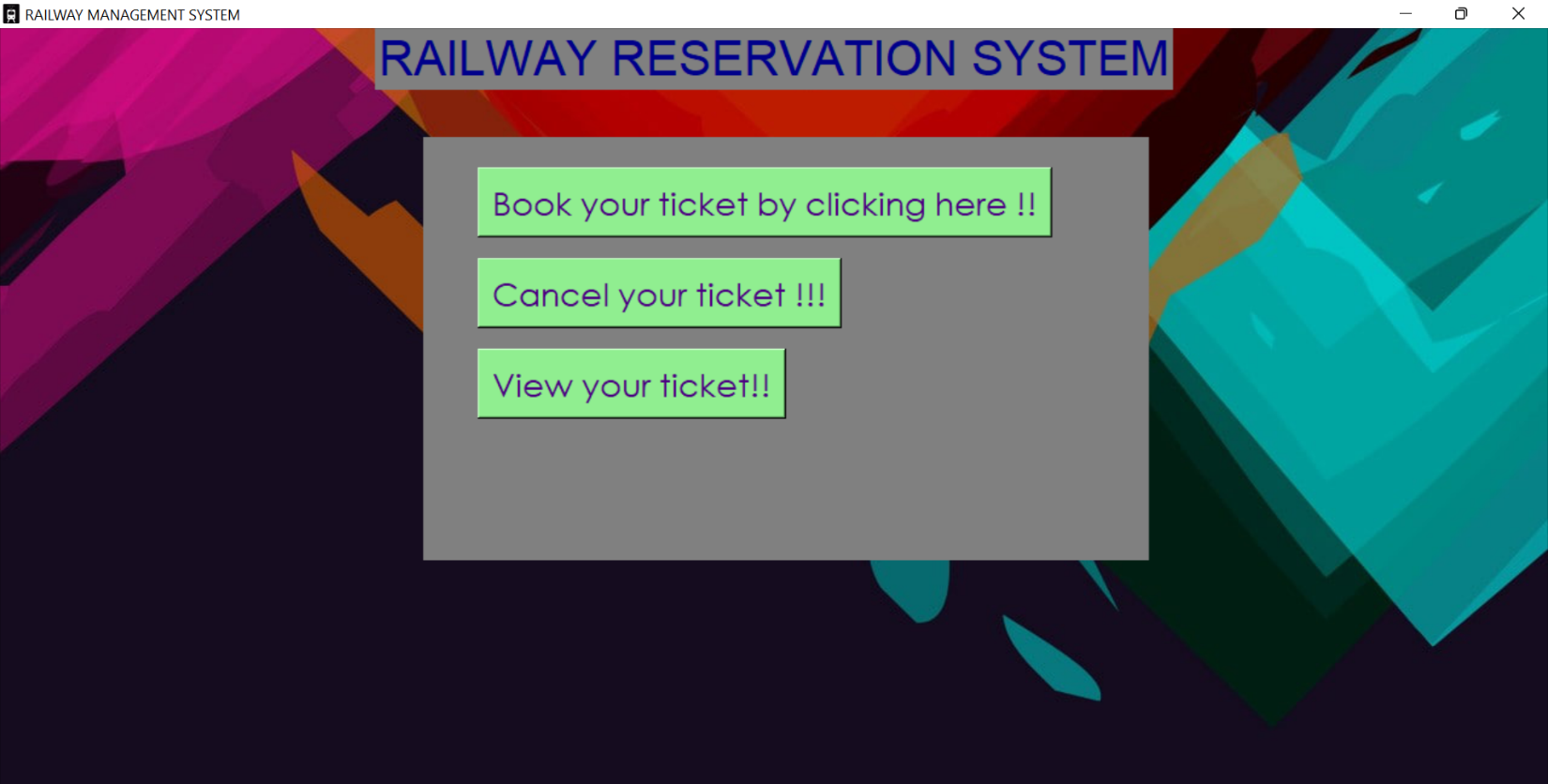
# The Main function that is required to loop the program till the program ends

root.mainloop()

**Flow Chart:**



**Screenshots:**

****

**BIBILIOGRAPHY:**

* Google.com
* NCERT TEXT BOOK
* Codeacademy
* W3Schools

**CONCLUSION:**

This Railway Management System is a model working of how an e-ticket is booked in real-life experiences. This enable us to book a train ticket via internet. We would like to thank our teachers for their teachings and guidance.We also learned the values that other members taught us in this making. Thank you.