# COMPUTER SCIENCE

# RAILWAY MANAGEMENT SYSTEM

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UNDER THE GUIDANCE OF—

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LANCER'S CONVENT

# ACKNOWLEDGEMENT

I would like to express a deep sense of thanks & gratitude to our project guide Ms.Meenu Chugh for guiding us immensely through the course of project. She always evinced keen interest in our work. Her constructive advice & constant motivation have been responsible for the successful completion of this project.

Our sincere thanks to Ms.Latesh Chaudhary, Our principal ma'am for this co-ordination in extending every possible support for the completion of this project.

We are also thankful of our parents for their respective motivation & support. We must thank to our classmates for their timely help & support for completion of this project.

Last but not the least, We would like to thank all those who had helped directly or indirectly towards the completion of this project.

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# CERTIFICATE

This is to certify that KANIK MAKHIJA, KRISH GARG & RACHIT GUPTA of class XII–B has prepared the report on the project entitled "Railway Management System". The report is the result of their efforts & endeavors. The report is found worthy of acceptance as final project report for the subject Computer Science of Class XII. They has prepared the report under my guidance.

Ms.Meenu Chugh
PGT (Computer Science)
Lancers Convent

# Synopsis of the Project

The "Railway Reservation System" has been developed to override the problems prevailing in the practicing manual system.
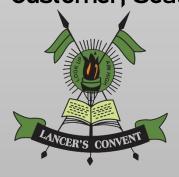
This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data.

No formal knowledge is needed for the user to use this system.

Thus by this all it proves it is user—friendly. Railway Reservation System , as described above, can lead to error free, secure, reliable and fast management system.

It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the informations of Ticket, Train, Customer, Seat, Payment.

# Scope of Project

It may help collecting perfect management in details. In a very short time, the collection will be obvious, simple and sensible. It will help a person to know the management  passed perfectly and vividly. It also helps in current all works relative to Railway Reservation System . It will be also reduced the cost of collecting the management & collection procedure will go on smoothly.

- ➢ It satisfy the User Requirement
- ➢ Be easy to understand by user and admin
- ➢ Be easy to operate
- ➢ Have a good user interference

# FLOW OF PROJECT

## ADMIN/USER LOGIN MODULE

```
select 1 for admin
select 2 for user
```

## ADMIN LOGIN

```
enter admin id admin@123
enter password 0000
```

## USER LOGIN

```
enter user id user@123
enter password 0000
```

## ADMIN MENU SET

```
                    INDIAN RAILWAYS
##################################################
#                                                #
#           1. TRAIN DETAILS                     #
#              1.1 ADDING TRAIN                   #
#              1.2 MODIFYING TRAIN DETAILS        #
#              1.3 DELETING TRAIN DETAILS         #
#              1.4 SEARCHING TRAIN                #
#                  1.41 SEARCH ALL               #
#                  1.42 SEARCH BY STARTING POINT #
#                  1.43 SEARCH BY DESTINATION    #
#                  1.44 SEARCH BY NAME           #
#                  1.45 SEARCH BY TRAIN NUMBER   #
#           2. USER DETAILS                       #
#              2.1 SEARCH ALL                     #
#              2.2 SEARCH BY TRAIN                 #
#              2.3 SEARCH BY NAME                  #
#           3. EXIT                               #
#                                                #
##################################################
```
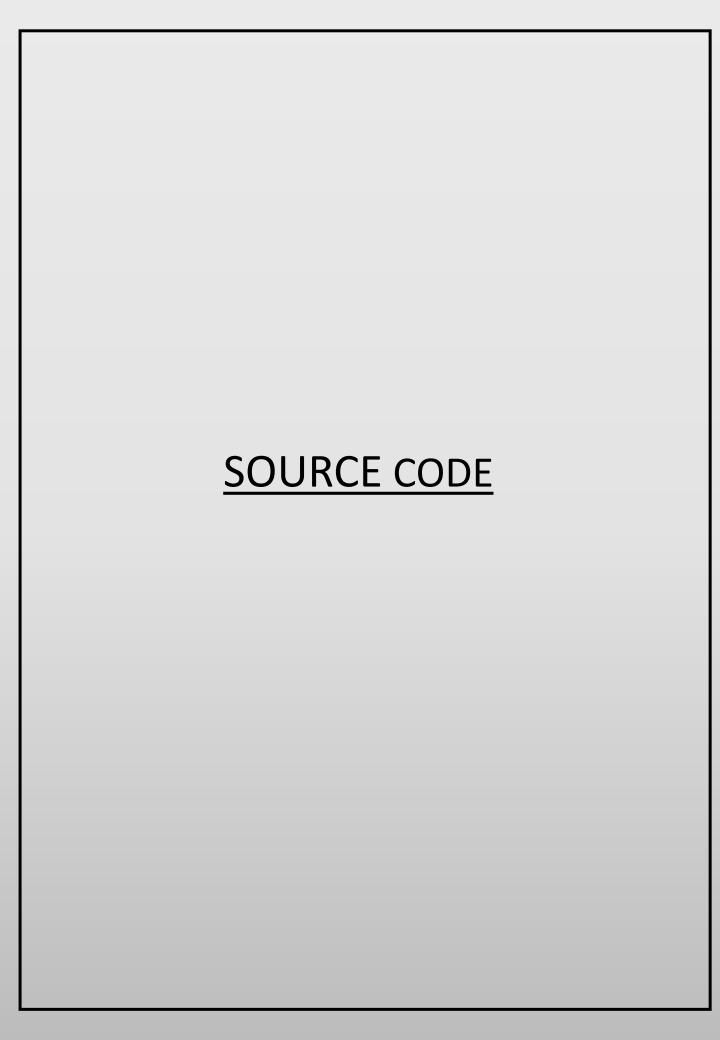
# USER MENU SET

```
                    INDIAN RAILWAYS
##################################################
#                                                #
#            1. BOOKING TICKET                    #
#            2. CANCELLING TICKET                 #
#            3. VIEW TICKET DETAILS               #
#            4. VIEWING TRAINS                    #
#               4.1 SEARCH BY STARTING POINT      #
#               4.2 SEARCH BY DESTINATION         #
#               4.3 SEARCH BY TRAIN NAME          #
#               4.4 SEARCH ALL                    #
#            5. EXIT                              #
#                                                #
##################################################
```

The program provides full accessibility and exposure to the admin as well as the user. All the desired needs are satisfied . All variety of Options like searching a train by it's starting point , destination , name or train number along with searching all the trains are provided  to the customer for saving time. Talking specifically the Admin can add trains in the database by selecting '1.1' , modify Train details by '1.2' and delete the details by '1.3'. For searching Train details the option and the parameter are displayed in the menu. The admin can also view user details by selecting the options from the menu. The user can book a ticket by selecting '1' , cancel it by '2 And view his ticket details  by selecting '3'. He can also view trains according to different parameters as seen in the menu. After Completion of the task the program can be run again by pressing 'y' or can be quit by pressing 'n'. Also an option for exiting program is given in the menu

# SOURCE CODE

```python
import random
import pymysql

mydb=pymysql.connect(user='root', password='krishgarg', host='localhost')
mycursor=mydb.cursor()

#Creation of Database
mycursor.execute("create database if not exists railwaysdb")
mycursor.execute("use railwaysdb")

#Creation of tables
mycursor.execute("create table if not exists tdetails(tno int,tname varchar(20),startpoint varchar
mycursor.execute("create table if not exists pdata(pnr int,custname varchar(20),mail varchar(20),jr
#Function to check if seats are available
def seats():
    global t
    mycursor.execute("Select * from tdetails where tname=%s and totalseats>reservedseats;",(t,))
    row=mycursor.fetchone()
    try:
        if len(row)==0:
            error
        else:
            L.append(t)
    except:
        print("Sorry for the inconvenience . All seats for this train are reserved")
        print("Please choose another train.")
        t=input("enter name of train:")
        seats()

#Function to generate seat number
def seatno():
    mycursor.execute("Select * from pdata where train=%s;",(t,))
    rows=mycursor.fetchall()
    global n
    n=1
    for x in rows:
        n=n+1
    return n

#Function for booking ticket
def registercust():
    global L
    L=[]
    pnr=random.randint(1000,9999)
    L.append(pnr)
    name=input("enter name:")
    L.append(name)
    mail=input("enter email id:")
    L.append(mail)
    jr_date=input("enter date of journey:")
    L.append(jr_date)
    global t
    t=input("enter name of train:")
    seats()
    seatno()
    food=input("enter your food preference (veg/non-veg):")
    L.append(food)
    L.append(n)
    cust=(L)
    sql="insert into pdata(pnr,custname,mail,jrdate,train,food,seatnumber)values(%s,%s,%s,%s,%s,%s,%s)"
    mycursor.execute(sql,cust)
    mydb.commit()
    mycursor.execute("update tdetails set reservedseats=reservedseats+1 where tname=%s;",(t,))
    print("Your ticket has been booked")
    print("===============================")
    print("         INDIAN RAILWAYS        ")
    print("            E-Ticket            ")
    print(" NAME:",name)
    print(" PNR NUMBER:",pnr)
    print(" TRAIN:",t)
    print(" DATE OF JOURNEY:",jr_date)
    print(" SEAT NUMBER:",n)
    print(" FOOD:",food)
    print(" PRICE(including meal):",4000)
    print("===============================")
```

```python
#Function to add train
def addtrain():
    L=[]
    tno=int(input("enter train number:"))
    L.append(tno)
    tname=input("enter train name:")
    L.append(tname)
    startpoint=input("enter start point:")
    L.append(startpoint)
    endpoint=input("enter enter endpoint:")
    L.append(endpoint)
    dtime=input("enter departure time:")
    L.append(dtime)
    atime=input("enter arrival time:")
    L.append(atime)
    totalseats=input("enter total seats :")
    L.append(totalseats)
    cust=(L)
    sql="insert into tdetails(tno,tname,startpoint,endpoint,dtime,atime,totalseats)values(%s,%s,%s,%s,%s,%s,%s);"
    mycursor.execute(sql,cust)
    mydb.commit()
    print("The train has been added")

#Function to view trains
def traindetails():
    sql4="select * from tdetails;"
    mycursor.execute(sql4)
    rows=mycursor.fetchall()
    for x in rows:
            print(x)
#Function to cancel ticket
def cancelticket():
    pnrno=input("enter your pnr number")
    train=input("enter train name")
    conf=int(input("are you sure , enter 1 to cancel ticket"))
    if conf==1 :
        mycursor.execute("delete from pdata where pnr=%s;",(pnrno,))
        mycursor.execute("update tdetails set reservedseats=reservedseats-1 where tname=%s;",(train,))
        print("The ticket has been cancelled")
    else:
        print("Your ticket is not cancelled")

#Function to modify train details
def modtrain():
    trno=int(input("Enter train number of the train "))
    choice=int(input("For modifying the train details you would have to enter all the details again \n if you want to continue enter 1 "))
    if choice==1:
        mycursor.execute("delete from tdetails where tno=%s;",(trno,))
        L=[]
        tno=int(input("enter train number:"))
        L.append(tno)
        tname=input("enter train name:")
        L.append(tname)
        startpoint=input("enter start point:")
        L.append(startpoint)
        endpoint=input("enter enter endpoint:")
        L.append(endpoint)
        dtime=input("enter departure time:")
        L.append(dtime)
        atime=input("enter arrival time:")
        L.append(atime)
        totalseats=input("enter total seats :")
        L.append(totalseats)
        cust=(L)
        sql="insert into tdetails(tno,tname,startpoint,endpoint,dtime,atime,totalseats)values(%s,%s,%s,%s,%s,%s,%s)"
        mycursor.execute(sql,cust)
        mydb.commit()
        print("The record has been updated")
    else:
        print("The process is cancelled")
```

```python
#Function to delete train
def deltrain():
    trno=int(input("Enter train number of the train "))
    choice=int(input("Are you sure to delete train details \n press 1 to confirm"))
    if choice==1:
        mycursor.execute("delete from tdetails where tno=%s;",(trno,))
        print("The train details have been deleted")
    else:
        print("The process is cancelled")

#Function to search train by starting point
def startptdet():
    startpt=input("Enter starting point of train")
    mycursor.execute("Select * from tdetails where startpoint=%s;",(startpt,))
    rows=mycursor.fetchall()
    for x in rows:
            print(x)

#Function to search train by destination
def desigdet():
    desig=input("Enter destination of train")
    mycursor.execute("Select * from tdetails where endpoint=%s;",(desig,))
    rows=mycursor.fetchall()
    for x in rows:
            print(x)

#Function to search train by name
def tnamedet():
    tname=input("Enter name of train")
    mycursor.execute("Select * from tdetails where tname=%s;",(tname,))
    rows=mycursor.fetchall()
    for x in rows:
            print(x)

#Function to search train by train number
def tnodet():
    tno=input("Enter train number of train")
    mycursor.execute("Select * from tdetails where tno=%s;",(tno,))
    rows=mycursor.fetchall()
    for x in rows:
            print(x)
#Function to view passengers of a train
def pastraindet():
    tname=input("Enter name of train")
    mycursor.execute("Select * from pdata where train=%s;",(tname,))
    rows=mycursor.fetchall()
    for x in rows:
            print(x)

#Function to search passenger by name
def pasnamedet():
    name=input("Enter name of passenger")
    mycursor.execute("Select * from pdata where custname=%s;",(name,))
    rows=mycursor.fetchall()
    for x in rows:
            print(x)

#Functions to view all passengers
def pdetails():
    mycursor.execute("select * from pdata ;")
    rows=mycursor.fetchall()
    for x in rows:
            print(x)
```

```python
#Menu for admin
def admnMenuset():
    print("                    INDIAN RAILWAYS                    ")
    print("#######################################################")
    print("#                                                     #")
    print("#               1. TRAIN DETAILS                      #")
    print("#                   1.1 ADDING TRAIN                  #")
    print("#                   1.2 MODIFYING TRAIN DETAILS       #")
    print("#                   1.3 DELETING TRAIN DETAILS        #")
    print("#                   1.4 SEARCHING TRAIN               #")
    print("#                       1.41 SEARCH ALL               #")
    print("#                       1.42 SEARCH BY STARTING POINT #")
    print("#                       1.43 SEARCH BY DESTINATION    #")
    print("#                       1.44 SEARCH BY NAME           #")
    print("#                       1.45 SEARCH BY TRAIN NUMBER   #")
    print("#               2. USER DETAILS                       #")
    print("#                   2.1 SEARCH ALL                    #")
    print("#                   2.2 SEARCH BY TRAIN               #")
    print("#                   2.3 SEARCH BY NAME                #")
    print("#               3. EXIT                               #")
    print("#                                                     #")
    print("#######################################################")
    inp=float(input("ENTER YOUR CHOICE :"))
    if inp==1.1:
        addtrain()
    elif inp==1.2:
        modtrain()
    elif inp==1.3:
        deltrain()
    elif inp==1.41:
        traindetails()
    elif inp==1.42:
        startptdet()
    elif inp==1.43:
        desigdet()
    elif inp==1.44:
        tnamedet()
    elif inp==1.45:
        tnodet()
    elif inp==2.1:
        pdetails()
    elif inp==2.2:
        pastraindet()
    elif inp==2.3:
        pasnamedet()
    elif inp==3:
        quit()
    else:
        print("Invalid choice entered")
        admnMenuset()
```
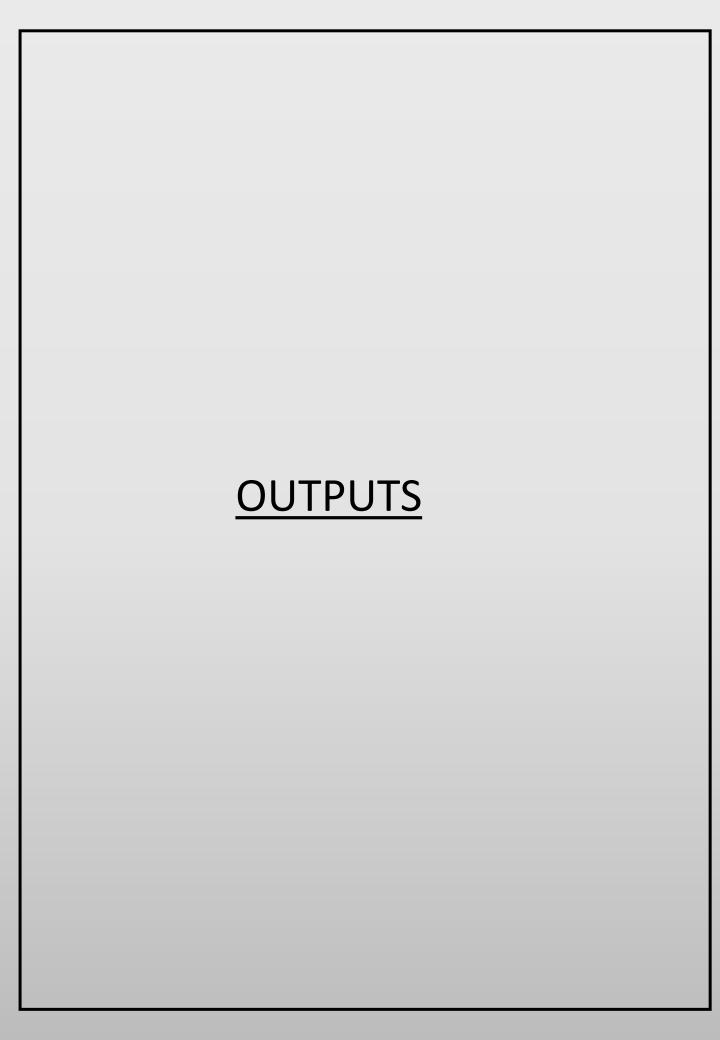
```python
def userMenuset():
    print("                    INDIAN RAILWAYS                        ")
    print("###########################################################")
    print("#                                                         #")
    print("#                  1. BOOKING TICKET                      #")
    print("#                  2. CANCELLING TICKET                   #")
    print("#                  3. VIEW TICKET DETAILS                 #")
    print("#                  4. VIEWING TRAINS                      #")
    print("#                     4.1 SEARCH BY STARTING POINT        #")
    print("#                     4.2 SEARCH BY DESTINATION           #")
    print("#                     4.3 SEARCH BY TRAIN NAME            #")
    print("#                     4.4 SEARCH ALL                      #")
    print("#                  5. EXIT                                #")
    print("#                                                         #")
    print("###########################################################")
    inp=float(input("enter your choice"))
    if inp==1:
        registercust()
    elif inp==2:
        cancelticket()
    elif inp==3:
        pasnamedet()
    if inp==4.1:
        startptdet()
    elif inp==4.2:
        desigdet()
    elif inp==4.3:
        tnamedet()
    elif inp==4.4:
        traindetails()
    elif inp==5:
        quit()
    else:
        print("Invalid chice entered")
        userMenuset()
#login
def login():
    admn=int(input("select 1 for admin \nselect 2 for user "))
    if admn==1 :
        adid=input("enter admin id ")
        pswd=int(input("enter password "))
        if adid=="admin@123" and pswd==0000:
            admnMenuset()
        else:
            print("Login failed")
    if admn==2 :
        usid=input("enter user id ")
        pswd=int(input("enter password "))
        if usid=="user@123" and pswd==0000:
            userMenuset()
        else:
            print("Login failed")

login()

def runagain():
    runagn=input("\n want to run again y/n:")
    while(runagn.lower()=='y'):
        login()
        runagn=input("\n want to run again y/n:")
    else:
        quit()
runagain()
```

# OUTPUTS

# ADMIN

```
select 1 for admin
select 2 for user 1
enter admin id admin@123
enter password 0000
              INDIAN RAILWAYS
###########################################################
#                                                         #
#            1. TRAIN DETAILS                             #
#               1.1 ADDING TRAIN                          #
#               1.2 MODIFYING TRAIN DETAILS               #
#               1.3 DELETING TRAIN DETAILS                #
#               1.4 SEARCHING TRAIN                       #
#                   1.41 SEARCH ALL                       #
#                   1.42 SEARCH BY STARTING POINT         #
#                   1.43 SEARCH BY DESTINATION            #
#                   1.44 SEARCH BY NAME                   #
#                   1.45 SEARCH BY TRAIN NUMBER           #
#            2. USER DETAILS                              #
#               2.1 SEARCH ALL                            #
#               2.2 SEARCH BY TRAIN                       #
#               2.3 SEARCH BY NAME                        #
#            3. EXIT                                      #
#                                                         #
###########################################################
ENTER YOUR CHOICE :1.1
enter train number:001
enter train name:express train
enter start point:delhi
enter enter endpoint:punjab
enter departure time:05:00
enter arrival time:10:00
enter total seats :5
The train has been added

 want to run again y/n:|
```

## Adding Train Details

## Modifying Train Details

```
ENTER YOUR CHOICE :1.2
Enter train number of the train 001
For modifying the train details you would have to enter all the details again
 if you want to continue enter 1 1
enter train number:001
enter train name:rajdhani
enter start point:delhi
enter enter endpoint:punjab
enter departure time:05:00
enter arrival time:11:00
enter total seats :4
The record has been updated
```

## Deleting Train Details

```
ENTER YOUR CHOICE :1.3
Enter train number of the train 001
Are you sure to delete train details
 press 1 to confirm1
The train details have been deleted
```

## Searching All Trains Together

```
ENTER YOUR CHOICE :1.41
(1, 'rajdhani', 'delhi', 'punjab', '05:00', '10:00', 5, 0)
(2, 'express train', 'mumbai', 'agra', '08:00', '17:00', 6, 0)
(3, 'royal car', 'jaipur', 'kolkata', '11:00', '21:00', 5, 0)
(4, 'shatabdi', 'delhi', 'agra', '09:00', '12:00', 5, 0)
(5, 'melvic train', 'chennai', 'gandhinagarg', '09:00', '16:00', 5, 0)
```

## Searching Trains By Starting Point

```
ENTER YOUR CHOICE :1.42
Enter starting point of traindelhi
(1, 'rajdhani', 'delhi', 'punjab', '05:00', '10:00', 5, 0)
(4, 'shatabdi', 'delhi', 'agra', '09:00', '12:00', 5, 0)
```

## Searching Trains By Destination

```
ENTER YOUR CHOICE :1.43
Enter destination of trainagra
(2, 'express train', 'mumbai', 'agra', '08:00', '17:00', 6, 0)
(4, 'shatabdi', 'delhi', 'agra', '09:00', '12:00', 5, 0)
```

## Searching Train by Name

```
ENTER YOUR CHOICE :1.44
Enter name of trainshatabdi
(4, 'shatabdi', 'delhi', 'agra', '09:00', '12:00', 5, 0)
```

## Searching Train By Train Number

```
ENTER YOUR CHOICE :1.45
Enter train number of train003
(3, 'royal car', 'jaipur', 'kolkata', '11:00', '21:00', 5, 0)
```

## Searching All User Details

```
ENTER YOUR CHOICE :2.1
(7635, 'krish', 'krish@gmail.com', '11/11/2020', 'rajdhani', 'veg', 1)
(1026, 'kanik', 'kanik@gmail.com', '11/11/2020', 'rajdhani', 'veg', 2)
(9952, 'rachit', 'rachit@gmail.com', '17/11/2020', 'royal car', 'veg', 1)
(4994, 'siddharth', 'sid@gmail.com', '10/11/2020', 'express train', 'veg', 1)
(9203, 'sarthak', 'sarthak@gmail.com', '23/11/2020', 'shatabdi', 'veg', 1)
```

## Searching User Details By Train

```
ENTER YOUR CHOICE :2.2
Enter name of trainrajdhani
(7635, 'krish', 'krish@gmail.com', '11/11/2020', 'rajdhani', 'veg', 1)
(1026, 'kanik', 'kanik@gmail.com', '11/11/2020', 'rajdhani', 'veg', 2)
```

## Searching User Details By Name

```
ENTER YOUR CHOICE :2.3
Enter name of passengerrachit
(9952, 'rachit', 'rachit@gmail.com', '17/11/2020', 'royal car', 'veg', 1)
```

## Exiting

```
ENTER YOUR CHOICE :3

>>>
```

```
                    INDIAN  RAILWAYS
################################################
#                                              #
#              1.  BOOKING  TICKET             #
#              2.  CANCELLING  TICKET          #
#              3.  VIEW  TICKET  DETAILS       #
#              4.  VIEWING  TRAINS             #
#                 4.1  SEARCH  BY  STARTING  POINT  #
#                 4.2  SEARCH  BY  DESTINATION      #
#                 4.3  SEARCH  BY  TRAIN  NAME      #
#                 4.4  SEARCH  ALL                  #
#              5.  EXIT                             #
```

## Booking Train Ticket

```
################################################
enter  your  choice1
enter  name:krish
enter  email  id:krish@gmail.com
enter  date  of  journey:11/11/2020
enter  name  of  train:rajdhani
enter  your  food  preference  (veg/non-veg):veg
Your  ticket  has  been  booked
===================================
          INDIAN  RAILWAYS
             E-Ticket
 NAME:  krish
 PNR  NUMBER:  7635
 TRAIN:  rajdhani
 DATE  OF  JOURNEY:  11/11/2020
 SEAT  NUMBER:  1
 FOOD:  veg
 PRICE(including  meal):  4000
===================================
```

## Cancelling a Ticket

```
enter  your  choice2
enter  your  pnr  number7635
enter  train  namerajdhani
are  you  sure  ,  enter  1  to  cancel  ticket1
The  ticket  has  been  cancelled
```

## Viewing Ticket Details

```
enter your choice3
Enter name of passengerkanik
(1026, 'kanik', 'kanik@gmail.com', '11/11/2020', 'rajdhani', 'veg', 2)
```

## Searching Train by Starting Point

```
enter your choice4.1
Enter starting point of traindelhi
(1, 'rajdhani', 'delhi', 'punjab', '05:00', '10:00', 5, 1)
(4, 'shatabdi', 'delhi', 'agra', '09:00', '12:00', 5, 0)
```

## Searching Train By Destination

```
enter your choice4.2
Enter destination of trainagra
(2, 'express train', 'mumbai', 'agra', '08:00', '17:00', 6, 2)
(4, 'shatabdi', 'delhi', 'agra', '09:00', '12:00', 5, 0)
```

## Searching Train by Train Name

```
enter your choice4.3
Enter name of trainshatabdi
(4, 'shatabdi', 'delhi', 'agra', '09:00', '12:00', 5, 0)
```

## Searching All Trains Together

```
enter your choice4.4
(1, 'rajdhani', 'delhi', 'punjab', '05:00', '10:00', 5, 2)
(2, 'express train', 'mumbai', 'agra', '08:00', '17:00', 6, 2)
(3, 'royal car', 'jaipur', 'kolkata', '11:00', '21:00', 5, 1)
(4, 'shatabdi', 'delhi', 'agra', '09:00', '12:00', 5, 0)
(5, 'melvic train', 'chennai', 'gandhinagarg', '09:00', '16:00', 5, 0)
```

## Exiting Program

```
enter your choice5
>>>
```

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