CS 368 Team Project

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The project we intend to work on is the ticket reservation system. ~~The exact practical usage has not been finally decided, but it is most likely to be used in areas like railroad, airplane, or theatre systems.~~ The practical usage I use is the train system. I am thinking of building at least two modes: the administrative mode in which controls everything (users, ticket information and availabilities etc); and the user mode can be accessed by users who can book and cancel the ticket. In addition, tickets can be divided into several categories. For instance, if we are building an railway ticket system, they can be divided into first class and second class. Outside sources we want to use are the ticket information in the real world (database or webpage). https://www.12306.cn/index/. (Graphic library section is cancelled since my partner dropped out of class).

In the zip file, there are total of three files: README.pdf, project.cpp (which is the main file), and data.cvs (the sample data collected by the 12306.cn website). I have tried to write a method readData that can extract all the information from cvs file into data I need, but I failed miserably all the time. (I've commented this method in the project.cpp so it won't crash).

In addition to these three files, there will be three extra text files generated during the program: id.txt (stores users' login information), t.txt (ticket/train information) and p.txt (passenger and reserved information).

Before Started:

The environment I used to test on is the school linux machines. More specifically I used Mobaxterm on Windows system to test code (I have been using this for the whole semester).

Step 1: Compile the codes:

g++ project.cpp

./a.out

You will see the main menu popping out:

[takashi@royal-16] (11)$ ./a.out

~~~~~~

.......WELCOME TO TRAIN TICKET RESERVATION SYSTEM..........

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^^^^^^^^^^^^^^^^^^^^^^^MAIN MENU^^^^^^^^^^^^^^^^^^^^^

1.Admin mode

2.User mode

3.Exit

Enter your choice:

Step 2: Sign in as administrator.

For now, you won't be able to get into the user code since you haven't created any of them. Type "1" and press Enter to the admin mode.

Enter your choice: 1

Enter the administrator password:

Now you will need administrator password in order to proceed. The password I choose at first is "ILOVECS368". You can change to any other simply by changing the value of variable pass in line 722 of the main file.

There are 5 attempts in total. If you get the password wrong, you will get:

Your password is incorrect!

You are not permitted to login this mode

4 chances remaining

Returning to the main menu...

After you sign in to the administrator mode, the admin menu is shown:

...........ADMINISTRATOR MENU...........

1.Create/Recreate a new detail data base (Warning: only do it once otherwise precious data will be lost!)

2.Add details

3.Display details

4.User management

5.Display passenger details

6.Return to main menu

Enter your choice:

Press "1" to generate a data base of train ticket information, and t.txt will be created.

Step 3: Create/add train information:

After you press "1" and hit Enter, you can create whatever train information you want (under the condition), and data.csv can be a good reference. (Make sure you only create it once, if you create the base again, it will cover and erase all the previous data).

Suppose we type 126, GC, Shanghai, Beijing, 100, 260, 300, 140, 5, 5, 2019 for a round, a message will show up to ask if you want to add another record. Since we can add record later, we just press "n" and this will create the data base.

Enter details as following:

Train No. (a number): 126

Train name (words): GC

Boarding location (words): Shanghai

Destination location (words): Beijing

Number of seats in first class: 100

Fare per first class ticket (a number in dollars): 260

Number of seats in second class:300

Fare per second class ticket (a number in dollars): 140

Date of travel (day):5

Date of travel (month):5

Date of travel (year):2019

Do you want to add more record?

y-for Yes

n-for No

n

This will send you back to the admin menu, you add additional train schedules by choose "2", and you can also check the train schedules you've made by pressing "3".

Enter your choice: 3

Train No.: 126

Train name: GC

Boarding Location: Shanghai

Destination: Beijing

First class seats: 100

First Class Fare: $260

Second class seats: 300

Second class fare: $140

Date (date-month-year): 5-5-2019

Step 4: Create Users

Press "4" and hit Enter to get into User management page.

.........WELCOME TO THE USER MANAGEMENT MENU........

1.Create id data base (Warning: only do it once otherwise precious data will be lost!)

2.Add another user

3.Return to the main menu

Same as creating ticket schedules, we first need to create a user data base. Press "1" and hit Enter (this will generate id.txt).

You can choose your own id and password, but here we use both id and password as "a" (without quotation marks).

Enter your id:a

Enter the password:

Do you want to add more record

y-Yes

n-No

n

Now we can go back to our user page and reserve a ticket!

Step 5: Reserve tickets

Go back to the main menu by choose "3" and then "6".

Then choose "2" for the user page.

Enter id and password you created for the user (Here it is a and a).

```
**************************************************
***********WELCOME TO THE USER MENU***********
**************************************************
Enter your id:
a
Enter your password:
1.Reserve
2.Cancell
3.Enquiry
4.Return to the main menu
Enter your choice:
```

Choose "1" to reserve a ticket. Then choose "1" again.

Then enter the train information we have just created before, and also passenger information:

```
Enter the details as follows
Train No. (a number): 126
Train name (words): GC
Boarding location (words): Shanghai
Destination location (words): Beijing
No of seats required:1
Passenger name:Takashi
Passenger age:20
Enter the class f-first class s-second class:f
```
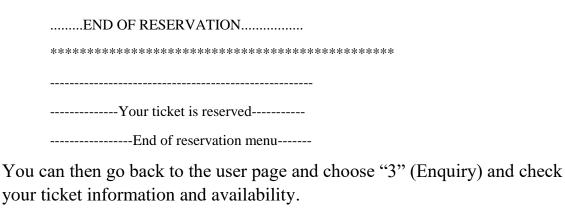
Date of travel (day):5

Date of travel (month):5

Date of travel (year):2019

Enter the concession category

1.Military

2.Senior citizen

3.Children below 5 yrs

4.None

4

...........END OF GETTING DETAILS............

You cannot get any concession

....

The program will generate a random pnr number (passenger name record), since it is random, we get different result each time. You will need pnr for cancellation. You need to memorize it for cancellation

....

Passenger Name Record No (PNR):64145391

Train no:126

Train name:GC

Boarding location:Shanghai

Destination:Beijing

No of seats reserved:1

Passenger name:Takashi

Passenger age:20

Your class:f

Date of reservation:5-5-2019

Your concession category:4

You must pay:260

****

.........END OF RESERVATION................

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--------------Your ticket is reserved-----------

-----------------End of reservation menu-------

You can then go back to the user page and choose "3" (Enquiry) and check your ticket information and availability.

Train No.: 126

Train name: GC

Boarding Location: Shanghai

Destination: Beijing

First class seats: 99

First Class Fare: $260

Second class seats: 300

Second class fare: $140

Date (date-month-year): 5-5-2019

Now when you go to admin page and choose "5", you will be able to see the passenger's information.

Passenger Name Record No (PNR):64145391

Train no:126

Train name:GC

Boarding location:Shanghai

Destination:Beijing

No of seats reserved:1Passenger name:Takashi

Passenger age:20

Your class:f

Date of reservation:5-5-2019

Your concession category:4

You must pay:260

Step 6: Go to the user page, and press "2" and then "1" for cancellation.

Then complete the information asked, you will be able to cancel your trip!

**********CANCELLATION MENU*********

Enter the details as follows

Passenger Name Record No:64145391

Date of cancellation(day):5

Date of cancellation(month):5

Date of cancellation(year):2019

...........END OF GETTING DETAILS...........

You are cancelling at the date of departure

That's all the features I've got, I will try to finish the readData() part once I have the chance. Thank you for the whole semester in CS368, I really learned a lot!

Takashi Matsuzawa

Bibliography:

https://www.12306.cn/index/, it just a Chinese website for me to get data and train information

http://www.cplusplus.com/forum/beginner/2957/, this helps clarifying on how to prevent crashing when user type random things. (For example, type a char when we need an int).

http://people.scs.carleton.ca/~dehne/projects/cpp-doc/tutorial/tut6-1.html A tutorial that teaches me how to open a file and search through it.