USER MANUAL

Group 84

21st May, 2016

Train Management System

USER'S MANUAL

Content

GENERAL INFORMATION

1.1 Background

Train management system is a useful system that can handle the current information and manage many things includes drivers, trains, stations, routes and journeys. In this situation, we developed a software that satisfied the requirements above.

The main purpose of this system is showed in the following steps:

First, assign a driver to a train, and assign a train to a route.

Second, the route is server with a timetable, so that the journey can be created.

Third, the journey can be handled in stop and start command.

What is more, the information of each journey can be showed in two ways including next stop information on a train and upcoming train of a station.

Finally, all the staff and facilities can be handled in add, remove and alter command to maintain the system.

1.2 System Overview

The management System mainly consists of five different management modules includes Driver Management, Train Management,

Route Management, Journey Management and Route Management. All the system are based on a simple GUI, which we will showed you in the following space.

The Main functionality of this train management system are:

➢ Maintain train and driver information.

➢ Manage routes and journeys.

➢ Assign train to journey: A train can only be assigned if it is available

➢ Assign driver to train: A driver can only be assigned if he/she is available.

➢ Check train live status:

➢ Manage timetable.

➢ Start/stop train remotely.

➢ Synchronize data with on-board train information display and train stops information display.

SYSTEM SUMMARY

2.1 System Running

To run this system, you must install a java running environment. We recommend you install Jdk1.8.

The first screen o our system is consisted of three components, they are main system control board, stop board and train board.
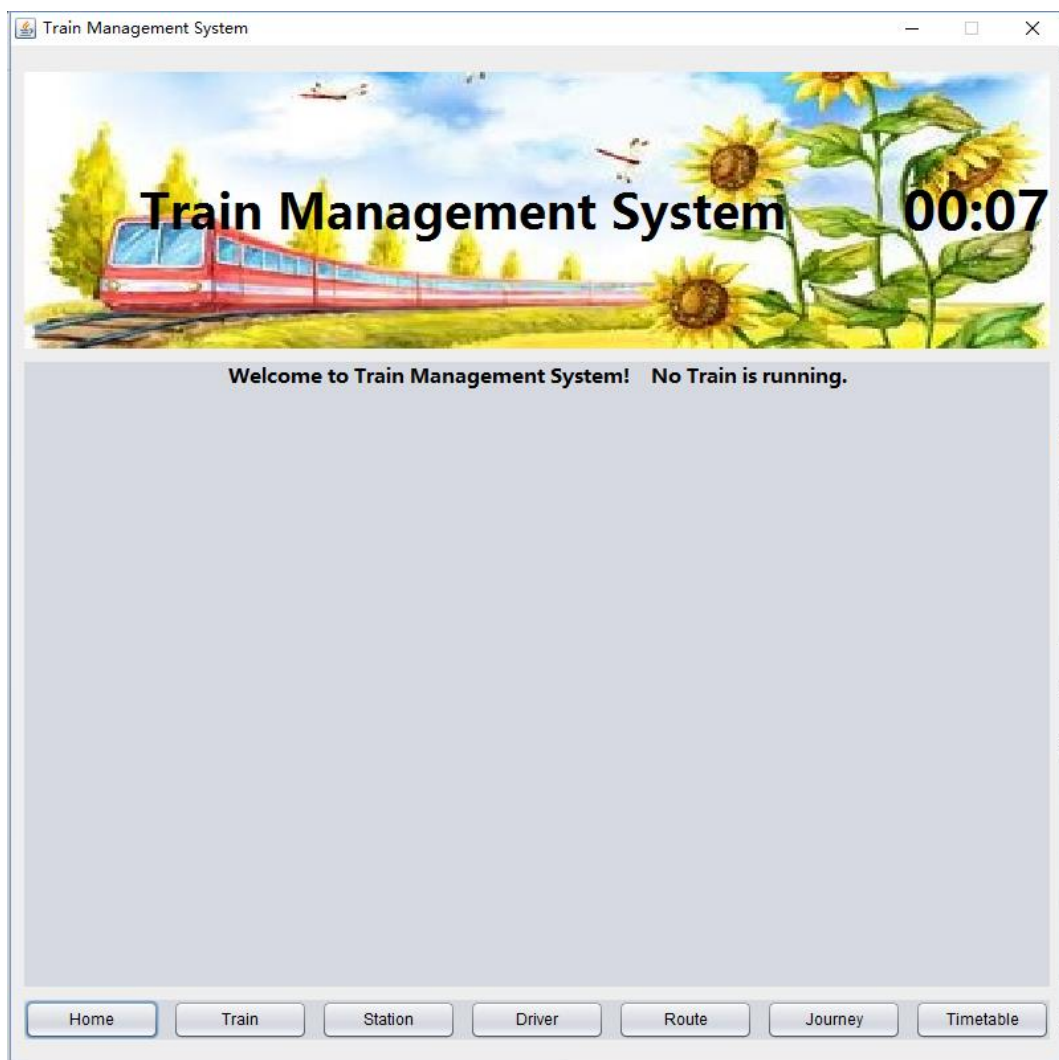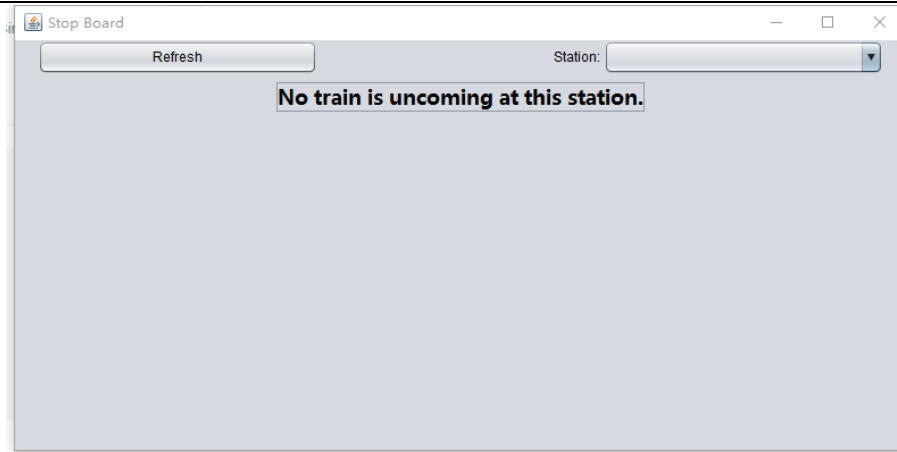

Figure 1 main system control board
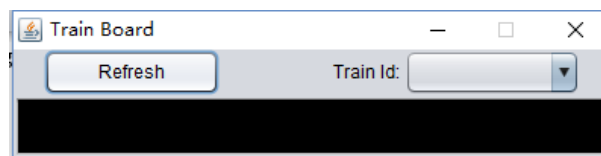
Figure 2 stop board

Figure 3 train board

2.2 System Plan Text

In the directory data, there are four files to store initial data.

They are separately Driver.txt, Route.txt, Station.txt, Train.txt.

Main contain of these plan text is showed as below:

```
1 3#available
2 2#available
3 1#available
4 4#available
5 5#available
```
Figure 4 Driver.txt

In this file, it shows that there are five drivers and all of them are in the state "available".

```
1 1#13,A,15,B,17,C
2 3#15,A,15,E,15,F
3 2#15,A,15,B,15,E,15,F
4 4#15,A,15,C,15,F
5 5#5,A,5,C
```

Figure 5 Route.txt

In this file, every line represents all the information of a route, the first integer indicates the id of the route, and # is separate sign of route id and real station and timespan between two stations, while the first number means the timespan between the central station and the station behind it.

```
1 1#A
2 3#B
3 6#C
4 4#D
5 10#E
6 2#F
```

Figure 6 Station.txt

In this file, the first integer is the id of each station, and the character behind the # is the station name,

```
1 1#available
2 6#available
3 3#available
4 4#available
5 5#available
```

Figure 7 Station.txt

The format of this file is a same as the driver file where the first integer indicates the id of each train and the following string describes the state of a train, which includes "available", "running" and "stopped" status.

GETTING STARTED

3.1 Train Management

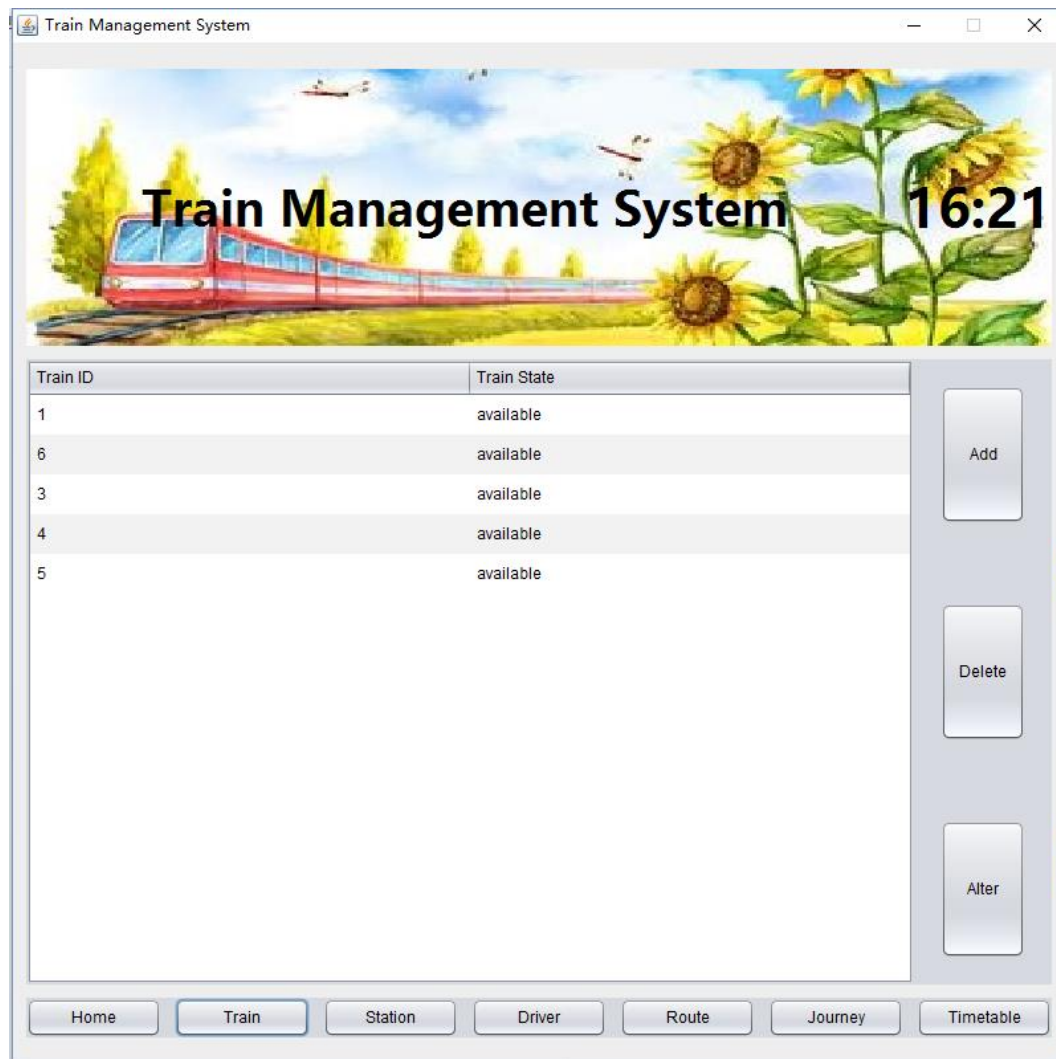Click the "Train" button to enter the interface in order to manage train:

Figure 8 Train UI

In this interface, you will see all trains and their states.

Click the "Add" button, you can system will add a train.

Select and a train, and Click the "Delete" button, you can remove a train.

"Alter" button is still in developing.

3.2 Station Management

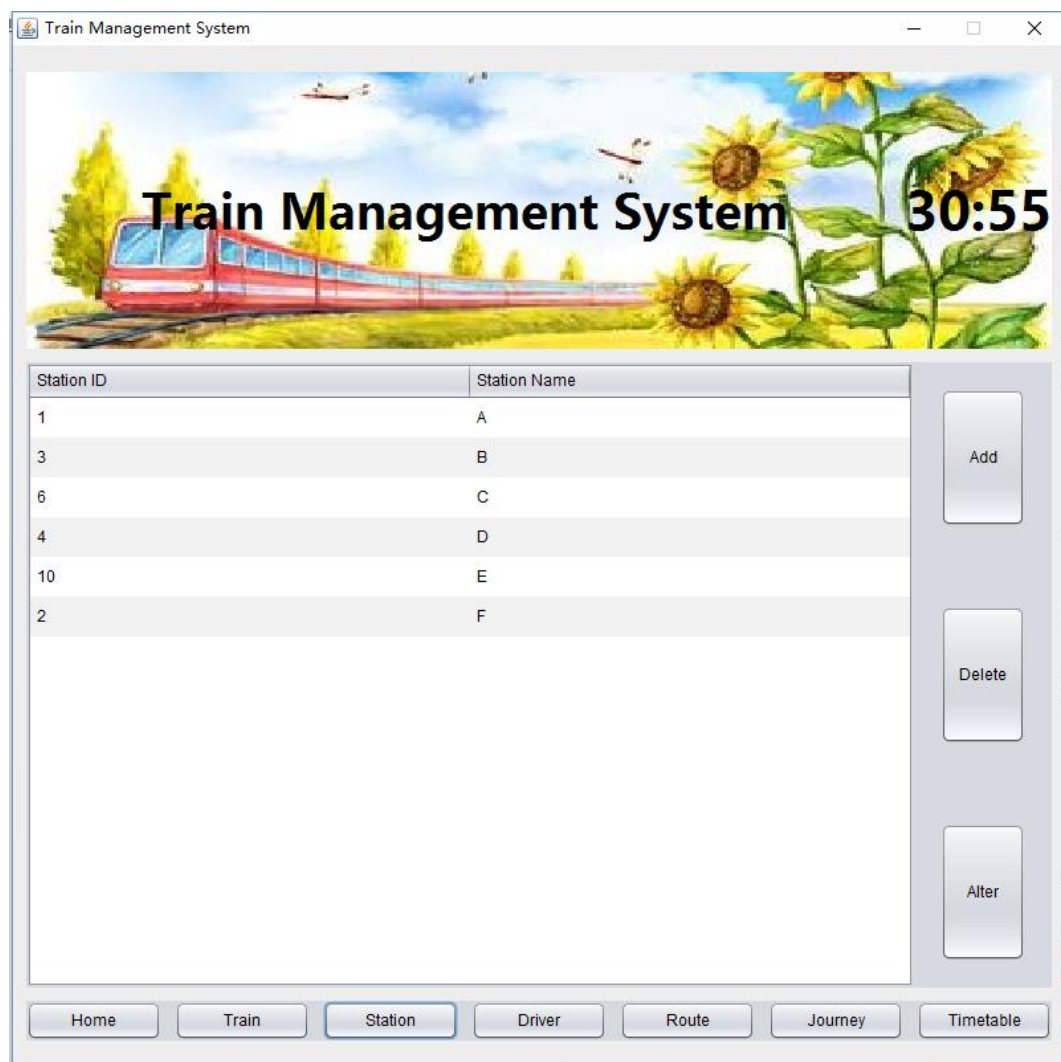Click the "Station" button to enter the interface in order to manage station.

Figure 9 Station UI

In this interface, you will see all stations and their names.

Click the "Add" button, you can add a station, the system will pop out a window to let you input the station name.
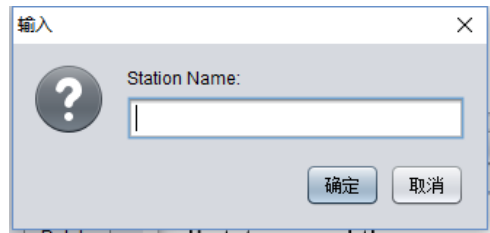
Figure 10 Add Station input

Select and a station, and Click the "Delete" button, you can remove a station.

"Alter" button is still in developing.

3.3 Driver Management

Click the "Driver" button to enter the interface to manage driver.
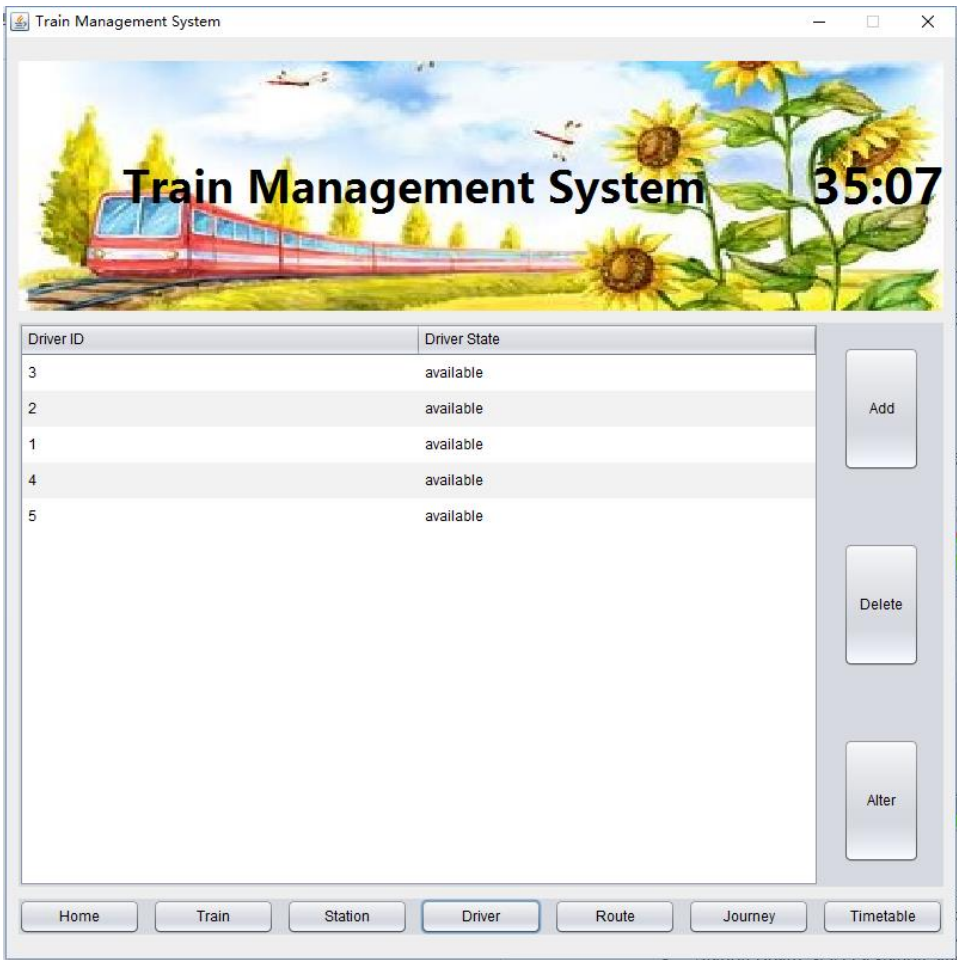

Figure 12 Driver UI

In this interface, you will see all drivers and their states.

Click the "Add" button, you can system will add a driver.

Select and a driver, and Click the "Delete" button, you can remove a driver.

"Alter" button is still in developing.

3.4 Route Management

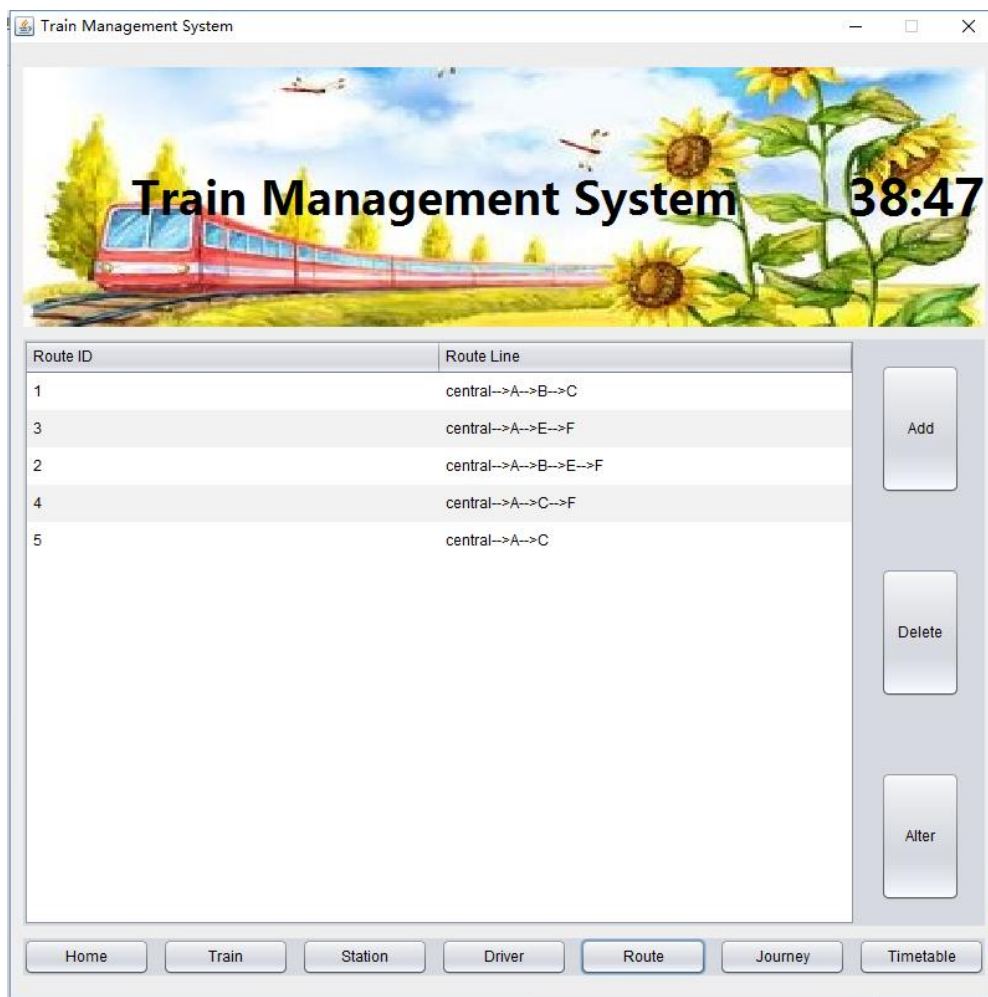Click the "Route" button to enter the interface in order to manage route.

Figure 13 Route UI

In this interface, you will see all routes and their passing stations and times..

Click the "Add" button, the system will pop out a window to let you choose the station name and input the timespan between this station and last station.
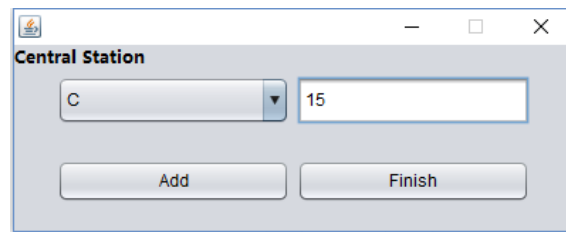

Figure 14 Add Route input

Click the "Add" button to add a new station and click "Finish" button to finish and successfully create a new route.

Select and a route, and Click the "Delete" button, you can remove a station.

"Alter" button is still in developing.

3.5 Journey Management

Click the "Journey" button to enter the interface in order to manage journey.

Figure 15 Journey UI

Choose the proper train, driver and route as well as input correct start time (in format: hh:mm), and click "add" button to create a new journey.

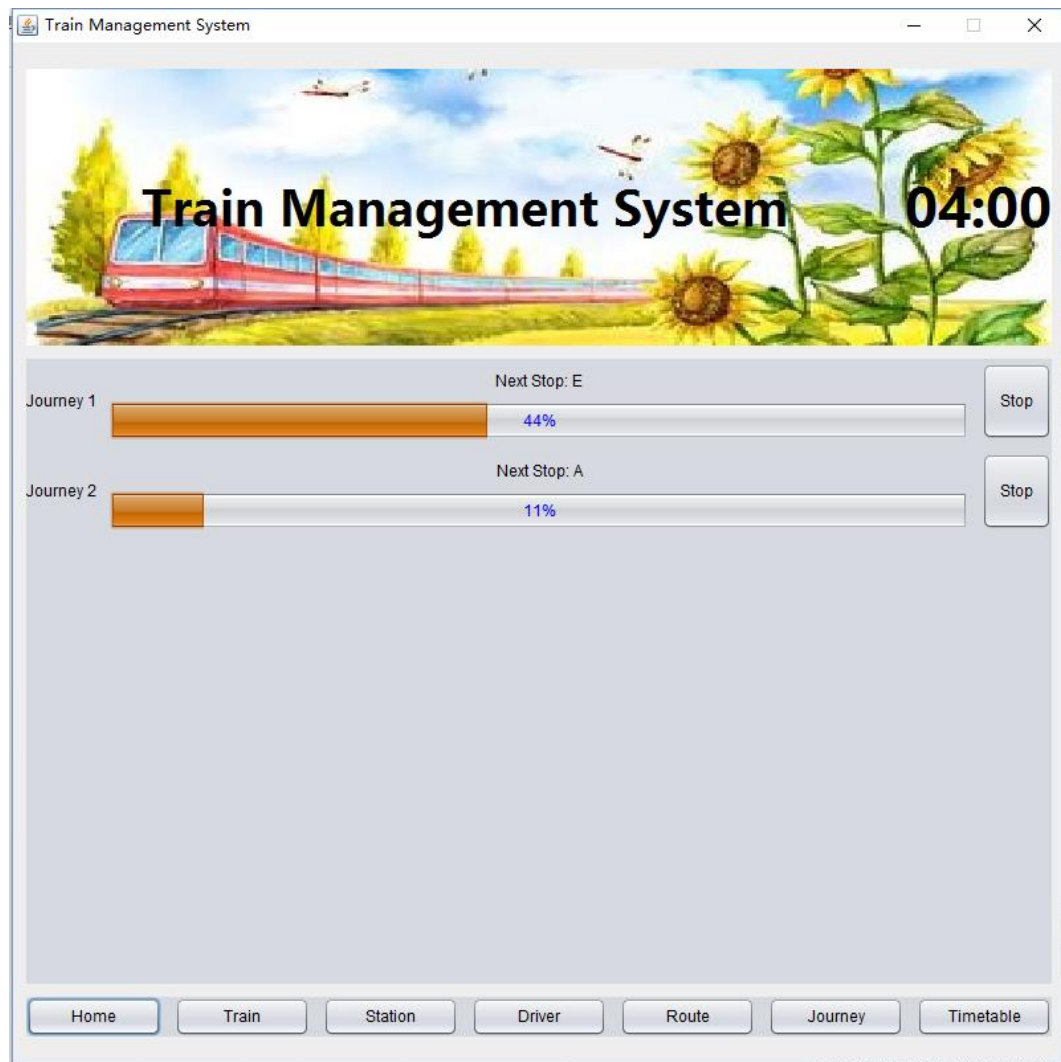Click "Home" button to view the train is running and next stop information is showed above the running bar.

Figure 16 Home UI

Click "Timetable" button to view the full schedule of all the journey on a fixed route, includes the outward direction and return direction.
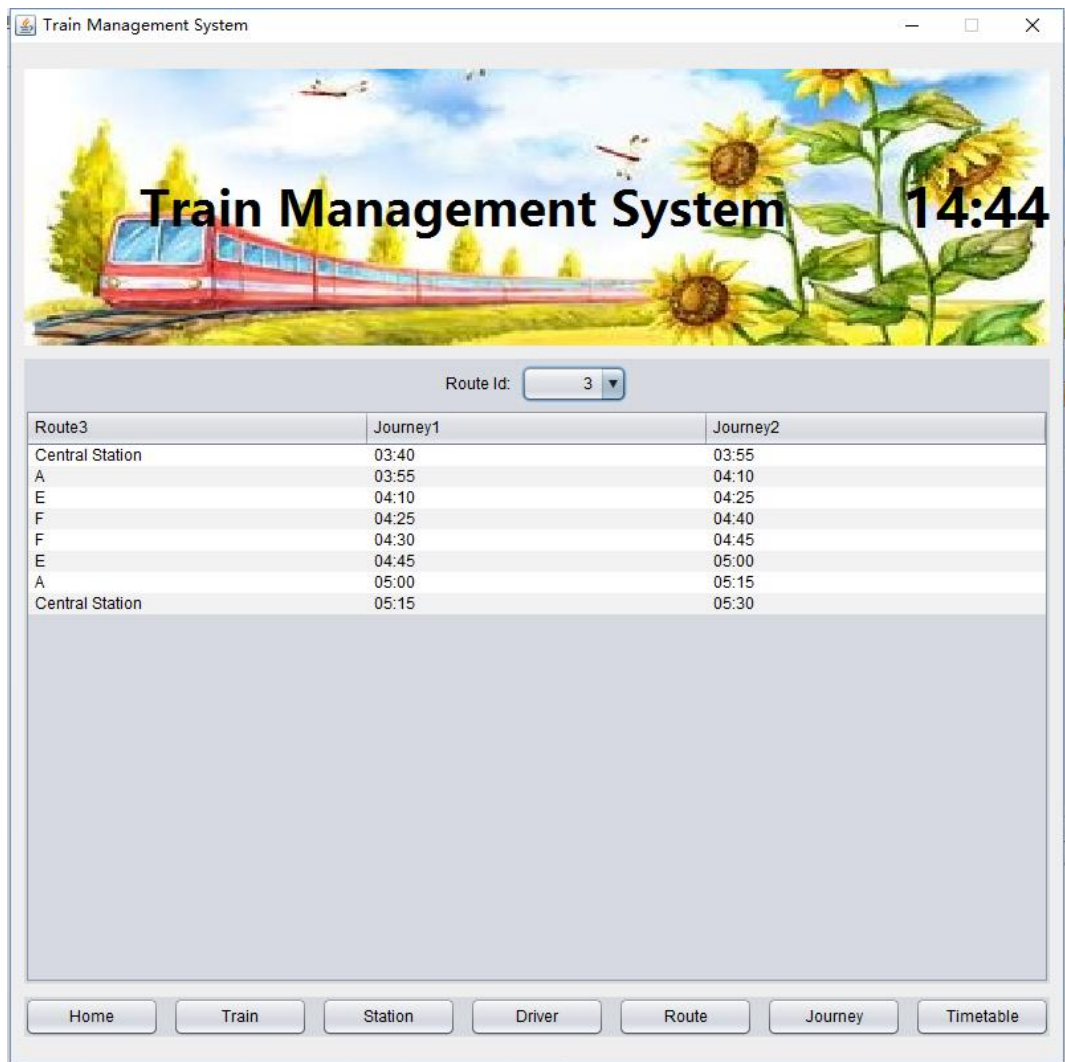
Figure 2 Timetable UI

3.6 Train Board Management

When any of the train is in "running" state, you can check the next stop information on train board by searching the id of a train.
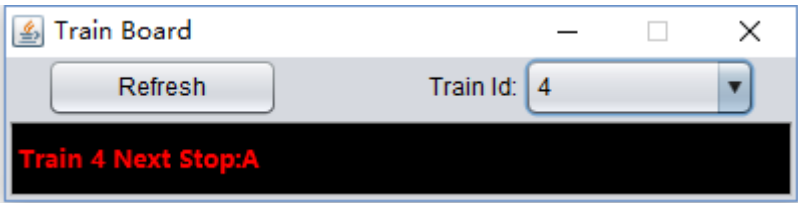

Figure 3 Train Board

3.6Stop Board Management

When any of the train is in "running" state, you can check the upcoming train information on stop board by searching the id of a station.
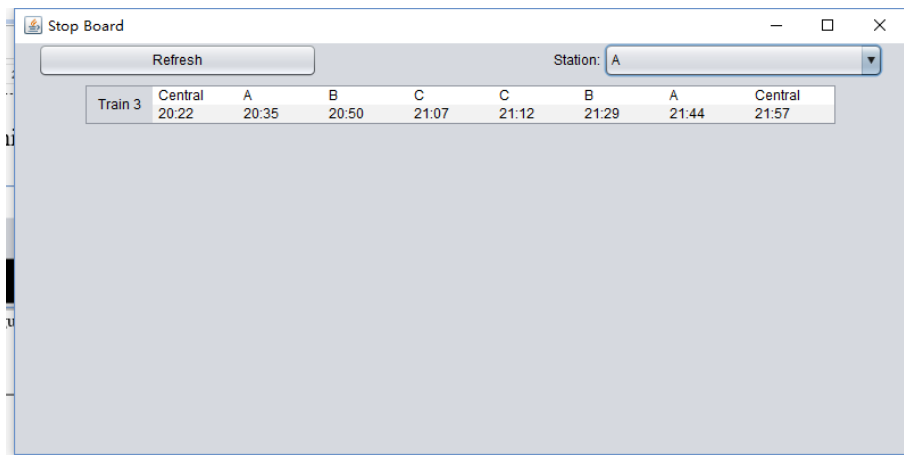

Figure 4 Stop Boar