



FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

**BITI 2113 LOGIC PROGRAMMING
TRAIN TICKETING SYSTEM PROJECT**

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INTRODUCTION

A train ticket is needed in order to get into the train ride. The ticket can be bought at the counter at the station but people usually prefer to buy it online since it is more easy and convenient. But for our project, we prepared a Train Ticketing System kiosk for the users to get the ticket in the easiest way without having to queue at the counter. The main objective of this project is to ease the users and to encourage people to use public transport by providing them an effective system to show the exact price for each destination, the train schedule and the route map of the train.

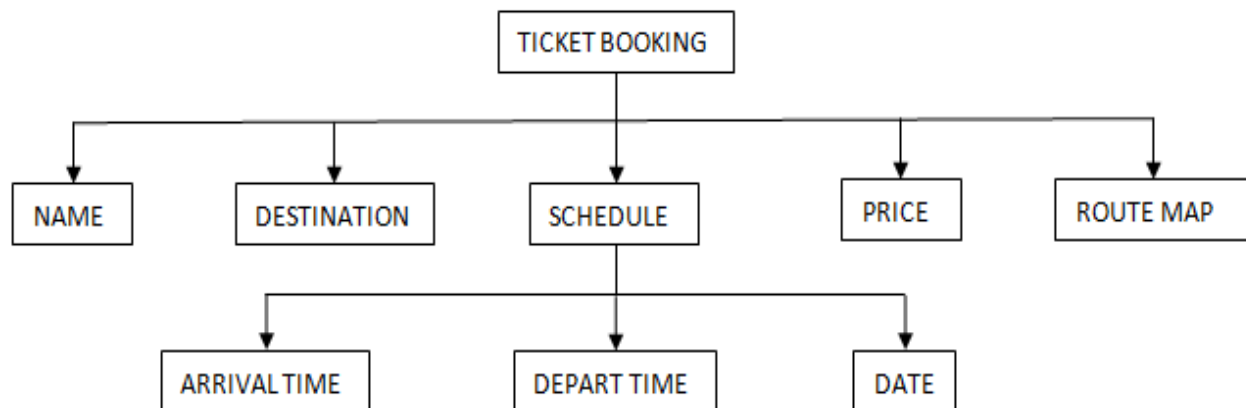
PROBLEM STATEMENT

- People have problem to travel because they do not know the stations for the train to stop.
- People who do not usually take train tend to waste their time on transportation because they do not know the best route to go to their destination.
- People do not know the exact price and the time schedule for the train

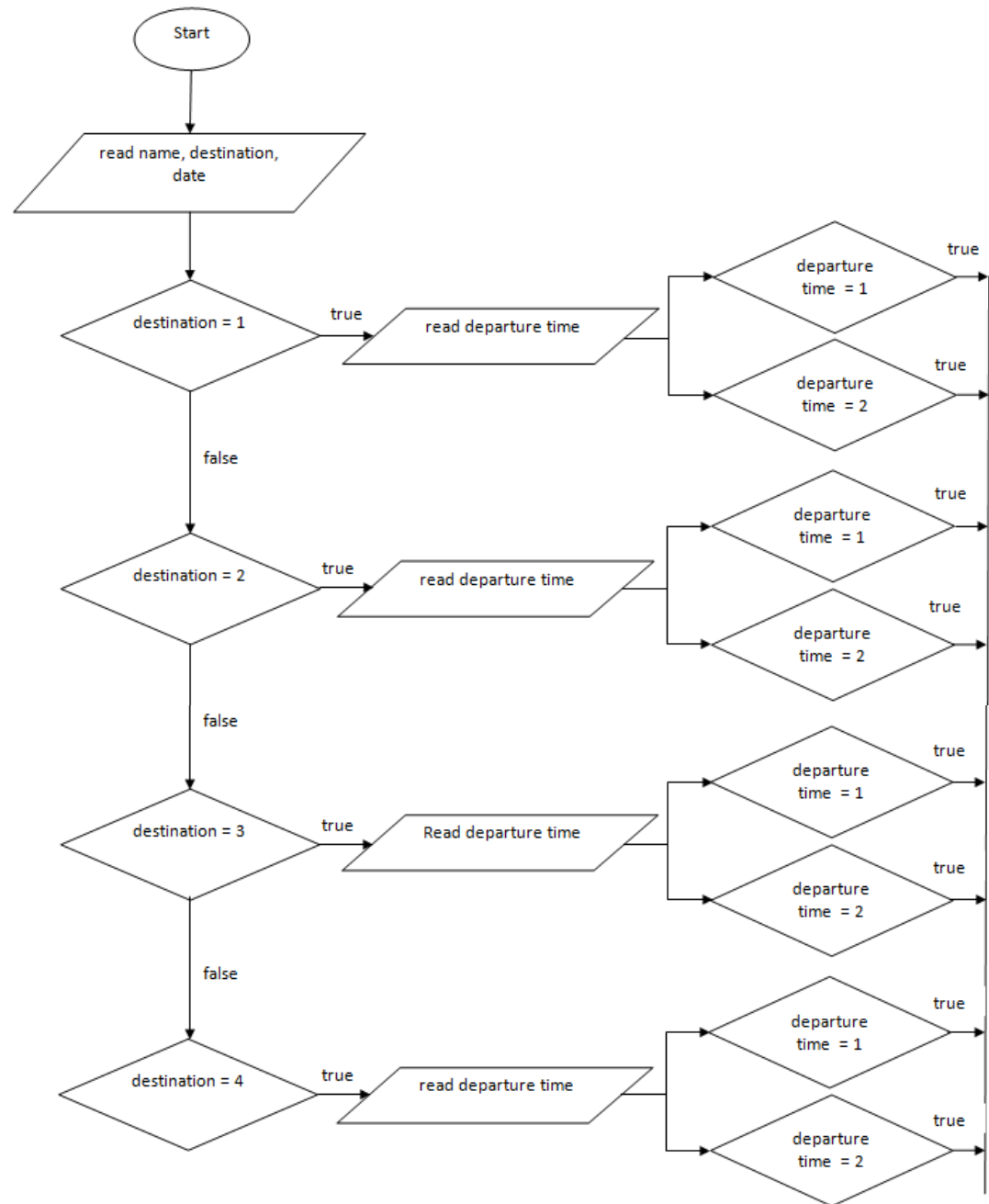
ANALYSIS AND DESIGN

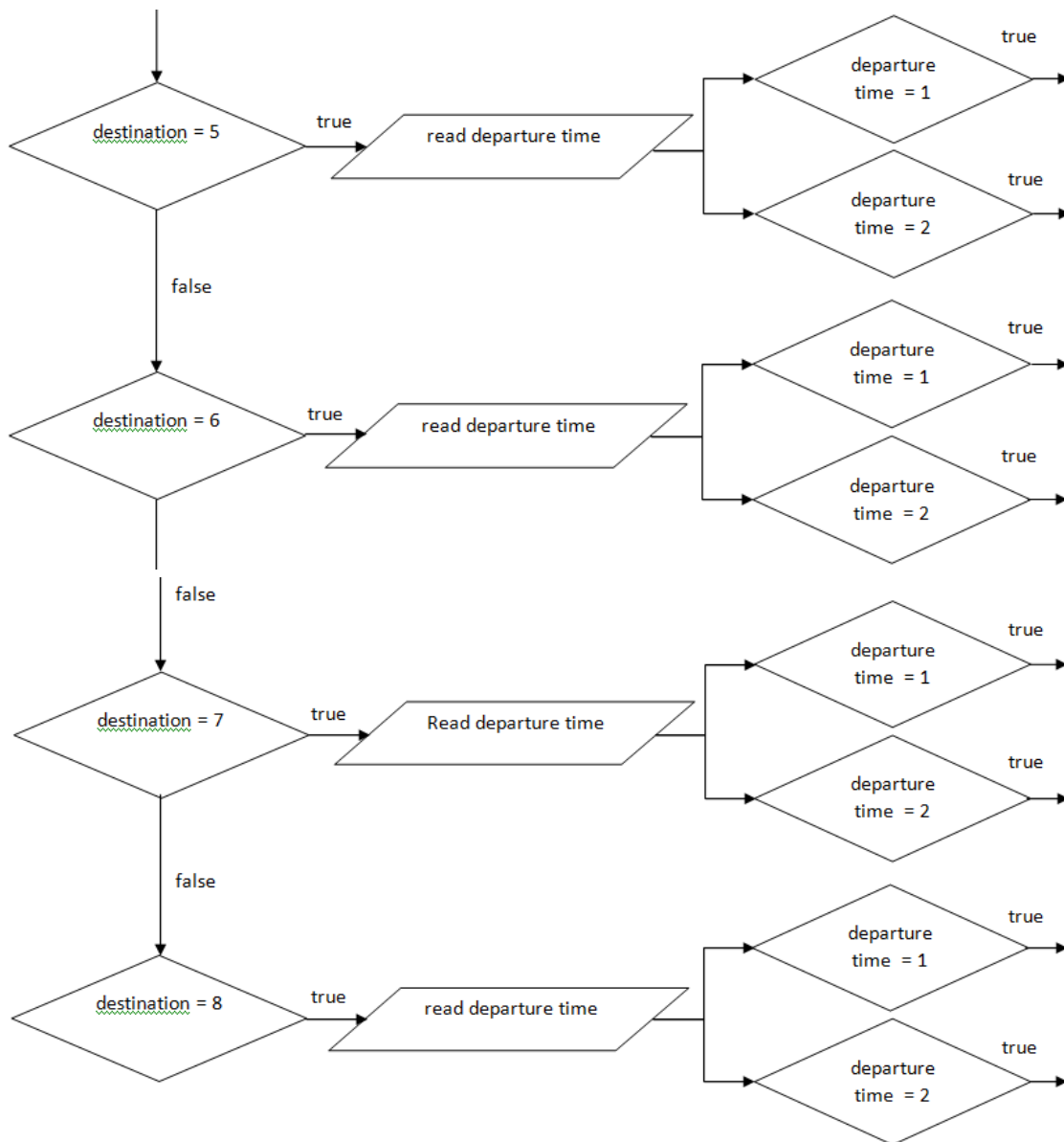
- Name
- Destination
- Price
- Schedule
- Route map

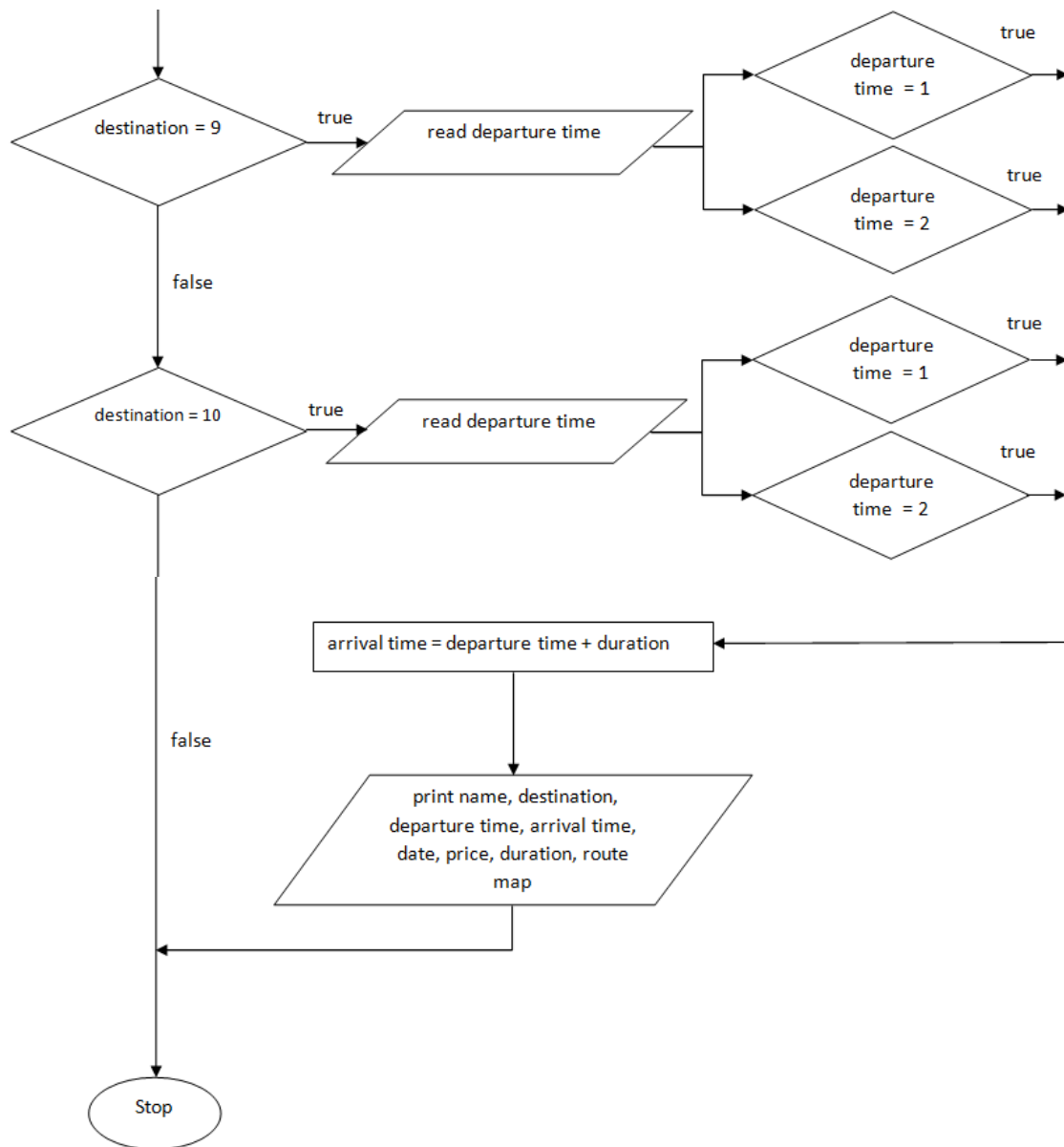
- **STRUCTURE CHART**



- FLOW CHART







IMPLEMENTATION

1. We use arithmetic in our prolog program to calculate arrival time and duration of the journey.

```
hello :- write('-----Welcome to KL Sentral-----'), nl, nl,

        write('Enter your name: '), nl,
        read(Name), nl,

        write('Where are you going? Choose your option number.'), nl, nl,
        write('    SOUTH TRAIN    |    NORTH TRAIN'), nl,
        write('    1) Kajang      |    5) Kuala Lumpur'), nl,
        write('    2) Seremban     |    6) Rawang'), nl,
        write('    3) Tampin       |    7) Ipoh'), nl,
        write('    4) Gemas        |    8) Taiping'), nl,
        write('                    |    9) Alor Setar'), nl,
        write('                    |   10) Padang Besar'), nl, nl,
        write('-----'), nl,

        read(Location), nl,
        write('Enter date(dd/mm/yyyy): '), nl,
        read(Date), nl,

        destination(Location, Desti),
        price(Location, Price),
        duration(Location, Duration),
        depart(Location, Depart),
        arrive(Location, Time_depart, Arrive, Depart),
        route_map(Location, Route), nl,

        write('Thank you for purchasing with us! ^_^'), nl,nl,
        write('-----Ticket Details-----'), nl,nl,

        write('Passenger Name: '),
        write(Name), nl,

        write('From: KL Sentral'), nl,

        write('Destination: '),
        write(Desti), nl,

        write('Price: RM '),
        write(Price), nl,

        write('Date: '),
        write(Date), nl,

        write('Departure Time: '),
        write(Depart), write(' hrs'), nl,

        write('Arrival Time: '),
        write(Arrive), write(' hrs'), nl,

        write('Duration: '),
        write(Duration), nl,

        write('Route: '),
        write(Route), nl,nl,

        write('-----').
```

```

destination(Location, Desti) :- Location = 1, Desti = 'Kajang'.
destination(Location, Desti) :- Location = 2, Desti = 'Seremban'.
destination(Location, Desti) :- Location = 3, Desti = 'Tampin'.
destination(Location, Desti) :- Location = 4, Desti = 'Gemas'.
destination(Location, Desti) :- Location = 5, Desti = 'Kuala Lumpur'.
destination(Location, Desti) :- Location = 6, Desti = 'Rawang'.
destination(Location, Desti) :- Location = 7, Desti = 'Ipoh'.
destination(Location, Desti) :- Location = 8, Desti = 'Taiping'.
destination(Location, Desti) :- Location = 9, Desti = 'Alor Setar'.
destination(Location, Desti) :- Location = 10, Desti = 'Padang Besar'.

price(Location, Price) :- Location = 1, Price = 12.
price(Location, Price) :- Location = 2, Price = 18.
price(Location, Price) :- Location = 3, Price = 25.
price(Location, Price) :- Location = 4, Price = 31.
price(Location, Price) :- Location = 5, Price = 9.
price(Location, Price) :- Location = 6, Price = 13.
price(Location, Price) :- Location = 7, Price = 36.
price(Location, Price) :- Location = 8, Price = 62.
price(Location, Price) :- Location = 9, Price = 70.
price(Location, Price) :- Location = 10, Price = 76.

duration(Location, Duration) :- Location = 1, Duration = '36 mins'.
duration(Location, Duration) :- Location = 2, Duration = '1h 24 mins '.
duration(Location, Duration) :- Location = 3, Duration = '1h 57 mins'.
duration(Location, Duration) :- Location = 4, Duration = '2h 34 mins'.
duration(Location, Duration) :- Location = 5, Duration = '5 mins'.
duration(Location, Duration) :- Location = 6, Duration = '51 mins'.
duration(Location, Duration) :- Location = 7, Duration = '2h 40 mins'.
duration(Location, Duration) :- Location = 8, Duration = '3h 19 mins'.
duration(Location, Duration) :- Location = 9, Duration = '5h 1 mins'.
duration(Location, Duration) :- Location = 10, Duration = '5h 45 mins'.

depart(Location, Depart) :- write('Choose your depart time: '), nl,
                             write('1) 9.00 am'), nl,
                             write('2) 3.00 pm'), nl,
                             read(Time_depart),
                             arrive(Location, Time_depart, Arrive, Depart),
                             Time_depart = 1, Depart = 0900;
                             Time_depart = 2, Depart = 1500.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 1,
                                                  Time_depart = 1, Depart = 0900,
                                                  Arrive is Depart+36.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 1,
                                                  Time_depart = 2, Depart = 1500,
                                                  Arrive is Depart+36.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 2,
                                                  Time_depart = 1, Depart = 0900,
                                                  Arrive is Depart+124.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 2,
                                                  Time_depart = 2, Depart = 1500,
                                                  Arrive is Depart+124.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 3,
                                                  Time_depart = 1, Depart = 0900,
                                                  Arrive is Depart+157.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 3,
                                                  Time_depart = 2, Depart = 1500,
                                                  Arrive is Depart+157.

```

```

arrive(Location, Time_depart, Arrive, Depart) :- Location = 4,
                                                Time_depart = 1, Depart = 0900,
                                                Arrive is Depart+234.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 4,
                                                Time_depart = 2, Depart = 1500,
                                                Arrive is Depart+234.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 5,
                                                Time_depart = 1, Depart = 0900,
                                                Arrive is Depart+5.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 5,
                                                Time_depart = 2, Depart = 1500,
                                                Arrive is Depart+5.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 6,
                                                Time_depart = 1, Depart = 0900,
                                                Arrive is Depart+51.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 6,
                                                Time_depart = 2, Depart = 1500,
                                                Arrive is Depart+51.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 7,
                                                Time_depart = 1, Depart = 0900,
                                                Arrive is Depart+240.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 7,
                                                Time_depart = 2, Depart = 1500,
                                                Arrive is Depart+240.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 8,
                                                Time_depart = 1, Depart = 0900,
                                                Arrive is Depart+319.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 8,
                                                Time_depart = 2, Depart = 1500,
                                                Arrive is Depart+319.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 9,
                                                Time_depart = 1, Depart = 0900,
                                                Arrive is Depart+501.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 9,
                                                Time_depart = 2, Depart = 1500,
                                                Arrive is Depart+501.

arrive(Location, Time_depart, Arrive, Depart) :- Location = 10,
                                                Time_depart = 1, Depart = 0900,
                                                Arrive is Depart+545.
arrive(Location, Time_depart, Arrive, Depart) :- Location = 10,
                                                Time_depart = 2, Depart = 1500,
                                                Arrive is Depart+545.

route_map(Location, Route) :- Location = 1,
                               Route = 'KL Sentral > Kajang'.
route_map(Location, Route) :- Location = 2,
                               Route = 'KL Sentral > Kajang > Seremban'.
route_map(Location, Route) :- Location = 3,
                               Route = 'KL Sentral > Kajang > Seremban > Tampin'.
route_map(Location, Route) :- Location = 4,
                               Route = 'KL Sentral > Kajang > Seremban > Tampin > Gemas'.
route_map(Location, Route) :- Location = 5,
                               Route = 'KL Sentral > Kuala Lumpur'.
route_map(Location, Route) :- Location = 6,
                               Route = 'KL Sentral > Kuala Lumpur > Rawang'.
route_map(Location, Route) :- Location = 7,
                               Route = 'KL Sentral > Kuala Lumpur > Rawang > Ipoh'.
route_map(Location, Route) :- Location = 8,
                               Route = 'KL Sentral > Kuala Lumpur > Rawang > Ipoh > Taiping'.
route_map(Location, Route) :- Location = 9,
                               Route = 'KL Sentral > Kuala Lumpur > Rawang > Ipoh > Taiping >
route_map(Location, Route) :- Location = 10,
                               Route = 'KL Sentral > Kuala Lumpur > Rawang > Ipoh > Taiping >

```


INDIVIDUAL CONTRIBUTION

Leadership

- Shazana leads the group by helping the group members to do their parts without having any problems.

Ideas or suggestions

- All the group members worked together in choosing suitable topic and the methods to use in the system so that an effective system can be created in this project.

Cooperation

- Each member gave full cooperation to finish this project and done their parts perfectly and also helped each other as well with the ideas that can be used to complete this project.

CONCLUSION

This Train Ticketing System helps the users to get an easier way to buy the ticket without having to buy it at the counter which is more convenient. This system also provides full information about the train schedule after the booking process is done. Users get to know the exact price for the destination that they chose. Besides, the duration for the journey and the predicted arrival time will also be displayed along with the route map which users can know the stops for the train before they can reach to their destination.

USER MANUAL

1. Write "Hello" to start the system.
2. User need to enter his or her name.

```
?- hello.  
-----Welcome to KL Sentral-----  
  
Enter your name:  
|: fatini.
```

3. User chooses his or her destination based on the choices that were stated.

```
Where are you going? Choose your option number.  
  
SOUTH TRAIN      |    NORTH TRAIN  
1) Kajang         |    5) Kuala Lumpur  
2) Seremban       |    6) Rawang  
3) Tampin         |    7) Ipoh  
4) Gemas          |    8) Taiping  
                  |    9) Alor Setar  
                  |   10) Padang Besar  
  
-----  
|: 9.
```

4. User enters the date to ride the train.

```
Enter date(dd/mm/yyyy):  
|: 07/12/2018.
```

5. User chooses departure time based on the choices that were stated.

```
Choose your depart time:  
1) 9.00 am  
2) 3.00 pm  
|: 2.
```

6. The ticket price and arrival time will be displayed along with the ticket information.

```
Thank you for purchasing with us! ^_^  
  
-----Ticket Details-----  
  
Passenger Name: fatini  
From: KL Sentral  
Destination: Alor Setar  
Price: RM 70  
Date: 7/12/2018  
Departure Time: 1500 hrs  
Arrival Time: 2001 hrs  
Duration: 5h 1 mins  
Route: KL Sentral > Kuala Lumpur > Rawang > Ipoh > Taiping > Alor Setar  
  
-----  
true .
```