Parking-Lot class

Contains code for Password input.

Instantiates Admin class and Admin.start() which contains the menu driven part of the program.

Customer Class

Class for a customer. It has no interface. It has various instance variables to show it in the parking ticket.

It has methods :

1. showTicket() : Prints a ticket for the customer

2. Various other methods to set and get the instance variables

Payment class

The class is instantiated when the customer is leaving and does so by saying so at a panel other than entry panel. Implements the pay interface.

It contains two methods -

1. calculateDuration() : to calculate the total time for which the vehicle was parked

2. calculateFee() : to calculate fee using duration and incorporate charge if charging is opted by an electric car owner

Admin class

This is the junction for all the other classes in our program. It contains the menu driven code of the program. It has no interface.

Its methods are :
1. The constructor initializes all the instance variables regarding the Parking Lot floors, spots and rates for each preference types and Maps for vehicles, rates, customers along with some other objects. It also uses getInput() for input.

2. start() : It contains the menu driven part of the program, containg entry, exit, floor and electric exclusive panel. It also utilises other functions to support it. Also adds and removes customer from the customer Map.

3. isPreferenceTypeFull() : whether a particular preference type is available or not

4. parkingDisplayBoard() : Shows the available vehicle types, rates and availibility.

5. displayAvailableFloors() : display available floor for a particular preference type.

6. preferancesDisplayBoard() : Displays preferences for chosen vehicle type if that vehicle type has more than one preference and also shows its rates and availability.

7. allotFloor() : Allots a floor that is chosen by the customer.

8. allSpotIndex() : Allots a spot that is chosen by the customer after the customer has chosen a floor.

9. askMultiPrefernces() : To ask the customer about their preference spot regarding their vehicle type.

10. customerIsPaying() : This method is called when the customer is leaving and instantiates Payment object to calculate the price.

Floor Interface

Interface for a floor in a parking lot.

It has the following methods :

1. isAvailable() : to check if a preference is available

2. assignSlot() : assign a slot based on index and preference chosen by the customer

3. releaseSlot() : release a slot when a customer leaves

4. checkIndex() : check if index for the preference is available or not

5. showSpots() : show spots for a preference

Truck Floor Class

Implements the floor interface with some instance variables such as a boolean array for truck preference types.
Sets the ground floor as truck floor.

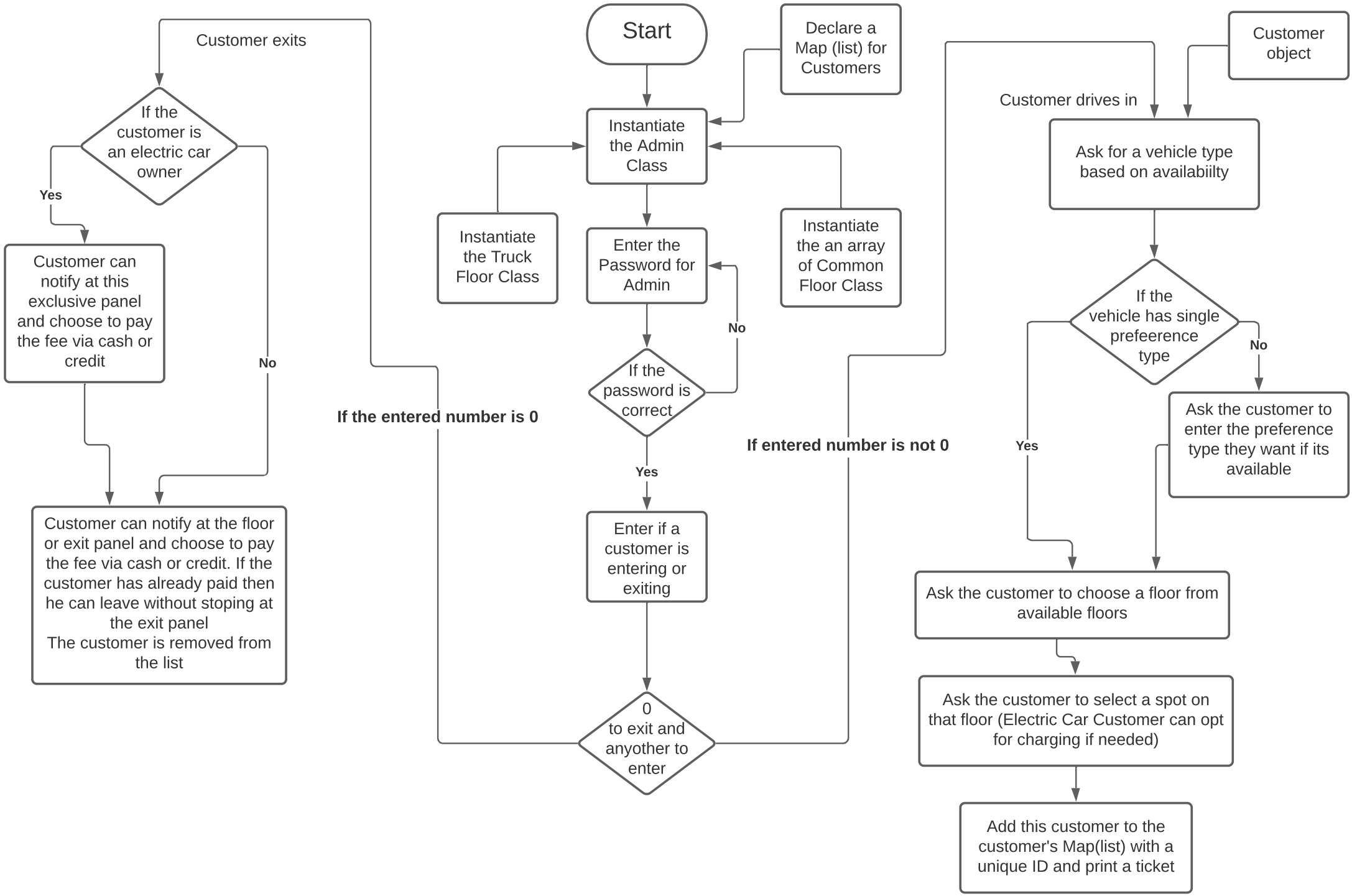
Extra method :
getTruckSpots() : returns the boolean array

Common Floor Class

Implements the floor interface with some instance variables such as a boolean arrays for different preference types.
Every floor other than ground floor is a common floor having similar floor layouts for a variety of preference types.

It has one extra method, setArrays(), for initializing the array when the constructor is called.

Note:
1. Our Program utilises vehicle types and prefereance types because the vehicles can share their preferences like van and car can share a large spot preference.


Start
Declare a Map (list) for Customers
Instantiate the Admin Class
Instantiate the Truck Floor Class
Instantiate the an array of Common Floor Class
Enter the Password for Admin
No
If the password is correct
Yes
Enter if a customer is entering or exiting
0 to exit and anyother to enter
If the entered number is 0
If entered number is not 0
Customer exits
If the customer is an electric car owner
Yes
No
Customer can notify at this exclusive panel and choose to pay the fee via cash or credit
Customer can notify at the floor or exit panel and choose to pay the fee via cash or credit. If the customer has already paid then he can leave without stoping at the exit panel
The customer is removed from the list
Customer drives in
Customer object
Ask for a vehicle type based on availabiilty
If the vehicle has single prefeerence type
No
Yes
Ask the customer to enter the preference type they want if its available
Ask the customer to choose a floor from available floors
Ask the customer to select a spot on that floor (Electric Car Customer can opt for charging if needed)
Add this customer to the customer's Map(list) with a unique ID and print a ticket