- **Project Version**
  - The project is about selling cars, and the process of selling a car.
- **Team Members:**
  - Peiyang Chang & Yanjie Ning
- **Website**
  - **https://francisning0203.wixsite.com/teampanda**
- **Git link**
  - **https://github.com/peiyang-chang/Iteration-1/tree/master**
- **Issue Tracking Link**
  - **https://github.com/peiyang-chang/Iteration-1/issues/1**
- **Requirements (functional and nonfunctional)**
  - *Functional*
    - Only the Managerial level employees have the right to change the price
    - The sales contract and any information that the customer needs to know should be allowed for all customers.
    - The salesman should be able to enter the database that contains all kinds of car type
    - The cashier has permission to log into the system to record all the payment information
    - Sales report should be generated after each deal
    - The salesman should have a record that contains all customers' information for later use
    - The search car system should be available for salesman all the time

        - The cashier should accept all kinds of payment, credit cards, checks, and cash.
        - The payment system should be validated by the credit card processing company
        - The customer must have a driver's license to buy a car
    - *Nonfunctional*
        - Employees never allowed to update sold car’s price in the sales report
        - The car dealers should be capable enough to handle tens of people
        - The search car system should give the result quickly and more details for customers
        - The search car system should be available for salesman all the time
        - The salesmen should speak English or Spanish
        - The search car system should give the result quicker.
        - Those cars should be washed before selling to customers
        - Those cars should have full fuel before selling to customers
- **Fully dressed use cases**

Use Case – Fully Dressed (Income car)

Primary Actor: Server

Stakeholders and interests:
Manager
- Person that can give to customer the final price and solve any unusual problem

Server
- Person that maintain all customer's car and record all the information of income car from parent company

Precondition: The car dealers is still open, and the car in stock is less than 10
Postcondition: The stock is full and customer could see more type of cars

Main success scenario:
1. All the income cars from parent company are arrived at the car dealers
2. The server briefly checks all the income cars
3. The server fills the form that all the income cars haven been received safely
4. The server brings all the cars into stock
5. The server logs in to the system
6. The server records all the income cars and put information into system (renew the CarList)
7. The system updates information in the website and information page for employees
8. The system gives feedback to the server
9. Manager checks and signs the paper
10. The server check if stock is full

Extensions:
1a. The deliverer is not here yet
    1. Call the deliver
1b. The deliverer has an accident
    1. The car dealers get compensation from the deliver company
3a. Some of the cars are damaged
    1. Deliver company give compensation
    2. Those damage is not cost during the delivering, so, car dealers call parent company
4a. The stock is full
    1. The server put them in the parking lot
    2. The server moves old cars outside
5a 7a 8a. The system is not working
    1. The server restarts the system
7b. The system has some duplicate information
    1. The server checks all the information again
10a. if the cars in the stock are less than 10
    1. The manager orders more cars until the stock is full

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Use Case – Fully Dressed (Make Payment)

Primary Actor: Cashier

Stakeholders and interests:
Customer
- Person wants to buy a dream car for himself/herself.

Cashier
- Person that make a payment and give the receipt, and one also act as front desk receptionist and answer telephones.

Precondition: Cashier is identified, and the payment system is working
Postcondition: Car sale is saved. Receipt is generated, and payment authorization approvals are recorded.
Main success scenario:
1. Customer arrives at the POS checkout front with the car information assigned by salesman
2. Cashier starts to fill forms and ask for signature
3. Cashier logs in to the systems and enters car identifier
4. Cashier prints all the information such as description, price, and others from the systems
5. Cashier hands over the paper that contains total price with tax and asks for payment
6. Customer pay and System handles the payment
7. System checks all the information and sends the payment information to the company system, which will be record to the SoldCarList
8. System print out receipt
9. Customer leaves with receipt and vehicle.

Extensions:
*a. The system fails at any scenario:

    1. Cashier restarts Systems, and logs in

    2. Customer will come next time

3a. Non-exist identifier:

    1. Cashier types in again

3b. There are multiple of same item in the system

    1. Cashier enters for information like type of car, the year of car

6a. Customers say that they have a discount card

    1. Cashier enters the code of the discount card for discount

7a. There is some wrong information in the paper

    1. Cashier asks Customer to rewrite the wrong part

Use Case – Fully Dressed (Get Information)

Primary Actor: Cashier

Stakeholders and interests:
Customer
- Person wants to buy a dream car for himself/herself.

Manager
- Person that can give to customer the final price and solve any unusual problem

Cashier
- Person that make a payment and give the receipt, and one also act as front desk receptionist and answer telephones.

Precondition: The phone in the car dealers is working, and customer wants to buy a car

Postcondition: Customer gets all the information she/he needs for car dealers

Main success scenario:
1. Customer calls the car dealers to get information (cars with reduction)
2. Cashier pick up the phone
3. Customer asks questions such as, what's the car dealers' open hours? Is this type of car available in the store? (From the store information)
4. Cashier answers all the question about car information, store information
5. Customer wants to make a reservation for several cars that she/he wants to buy.
6. Cashier hangs up and puts the reservation into the system

Extensions:
1a. None answer the phone

1. Customer will call them again later
2. Customer leave a message
3. Customer could go to the website which contains all the information

3a. Cashier is busy to help other people

1. Customer will wait until cashier has time
2. Cashier finds other employees that are free to help customer

4a. Cashier can not answer all the question

1. Cashier finds a manager that to help the customer
2. Customers will come to the store and get information

6a. The system is not working

1. Cashier writes on the paper
2. Cashier restart the system

Fully-Dressed use Case
Author: Yanjie Ning

Use case Name: Maintenances Reservation

Stakeholders and Interests:
1. Customer who wants to maintain vehicle in dealership.
2. Maintenances staff who responsible for Maintenances.
3. Manager who directing maintenances staff and solving unusual.

Precondition:
1. Maintenances staff is authenticated.
2. Cashier is authenticated.

Postcondition:
1. Transaction is saved.

Main Success Scenario:
1. Customer wants to maintain vehicle in dealer ship.
2. Customer makes the reservation.
3. Maintenances staff check the system for the maintenances date.
4. Maintenances staff ask customer for basic information.
5. Customer fill the basic information to the system.
6. Maintenances staff confirm reservation.
7. Customer confirms reservation.

Extensions:
3a System does not allow maintenances staff to login.
    1. maintenances staff call manager.
    2. manager call customer.
    3. manager make manual reservation.

Fully-Dressed use Case Author: Yanjie Ning

Use Case Name: Test Drive Reservation

Stakeholders And Interests:
1. Customer who wants to test drive in the dealership.
2. Salesman who responsible for test drive reservation.

3. Manager who directing salesman and solving unusual.

Precondition: Salesman is authenticated.

Postcondition: Transaction is saved.

Main Success Scenario:
1. Customer wants to test drive in the dealership.
2. Customer makes the reservation.
3. Salesman checks the system if the car is available for test drive.

4. Salesman ask customer to provide drive license.
5. Customer provide the drive license.
6. Salesman fill out received information to the system.

7. Salesman advise customer about basic information and rules.

8. Customer confirm reservation.

9. Salesman confirms reservation in system.

Extensions:
a* Anytime system does not respond

    1. Salesman will restart application.

3.a System does not allow salesman to login.

    1. salesman call manager.

    2. manager call customer.

    3. manager make manual reservation

5.a Customer can not provide drive license.

1. Salesman cancel reservation

Fully-Dressed Use Case
Author: Yanjie Ning

Use Case Name: Vehicle Maintenances
StakeHolders And Interests:
1. Customer who wants to maintains vehicle in the dealership.
2. Maintenance staff who maintains the vehicle.
3. Cashier who collects the money.

Precondition:
1. Maintenance staff is authenticated.
2. Cashier is authenticated.

PostCondition:
1. Transaction is saved.
2. Maintenances is finished.

Main Success Scenario:
1. Customer drives the vehicle to the dealership.
2. Maintenance staff schedules the date for customer to pick the vehicle.
3. Customer drops the vehicle.
4. Maintenances staff make the full vehicle inspection.
5. Maintenances staff report the issues to the customer.
6. Customer decides to maintains which issue.
7. Maintenances staff maintains the vehicle.
8. Customer picks up the vehicle when it is ready.
9. Customer pays the bill at the cashier.

Extensions:
4.a If maintenances staff finds the issues which can't be repair in the dealership.
   1. Maintenances staff will call the customer.
   2. Customer will cancel the maintenances.
6.a If customer does not want repair those issues in the dealership.
   1. Maintenances staff will cancel the maintenances.
   2. Customer will pick up the vehicle in the dealership.
7.a If maintenances staff cause accident during the maintenances.
   1. Maintenances staff will call the manger.
   2. Manger will call the customer.
   3. Manger will compensate to the customer.
8.a If maintenances takes more time than it is scheduled.
   1. Maintenances will call the customer.
   2. Customer will postpone the date for picking up the.
   b. If customer does not pick up the car at the schedule date.
   1. Customer will call the maintenances staff.
   2. Maintenances will postpone the date for picking up.

- **Traceability matrix**
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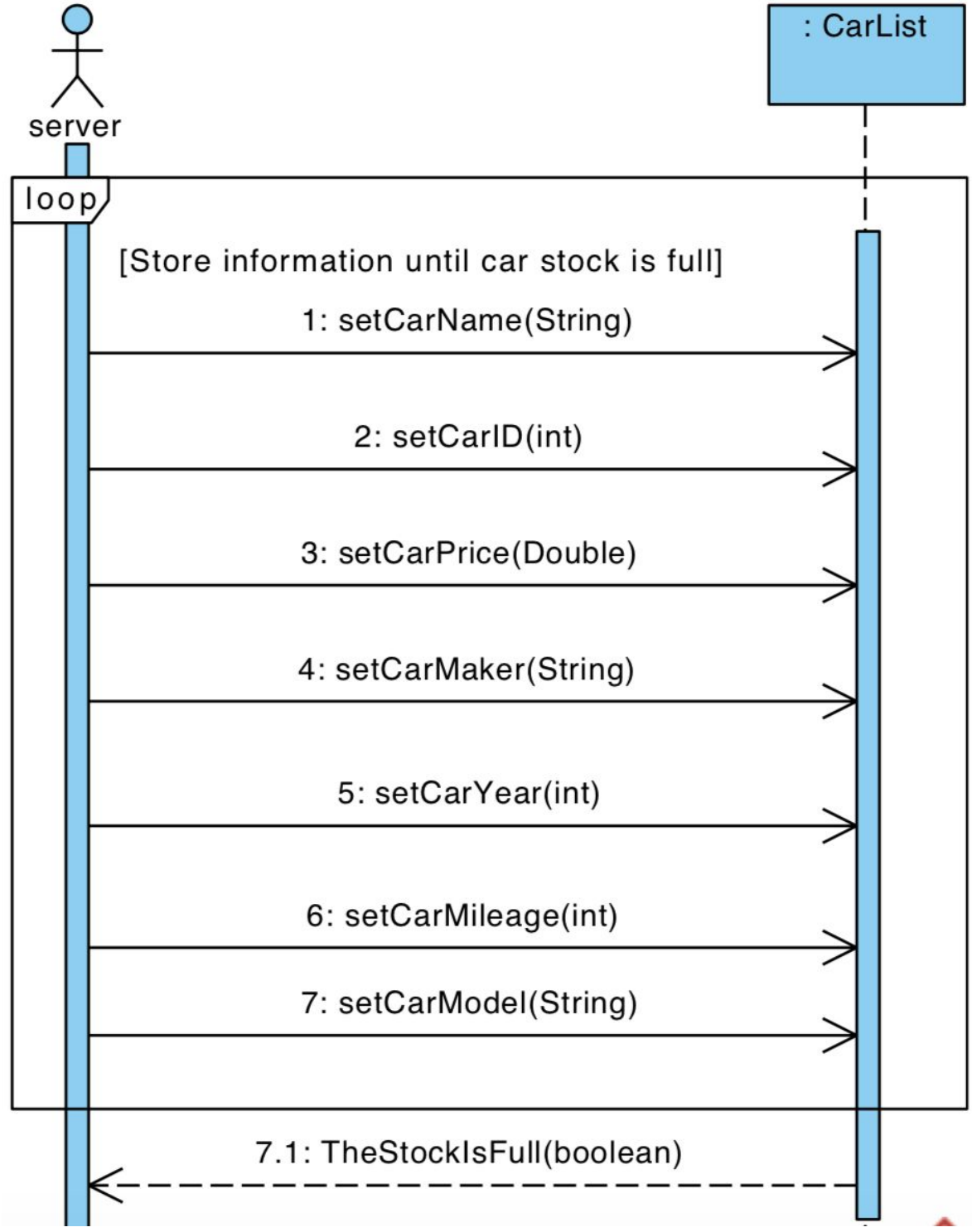
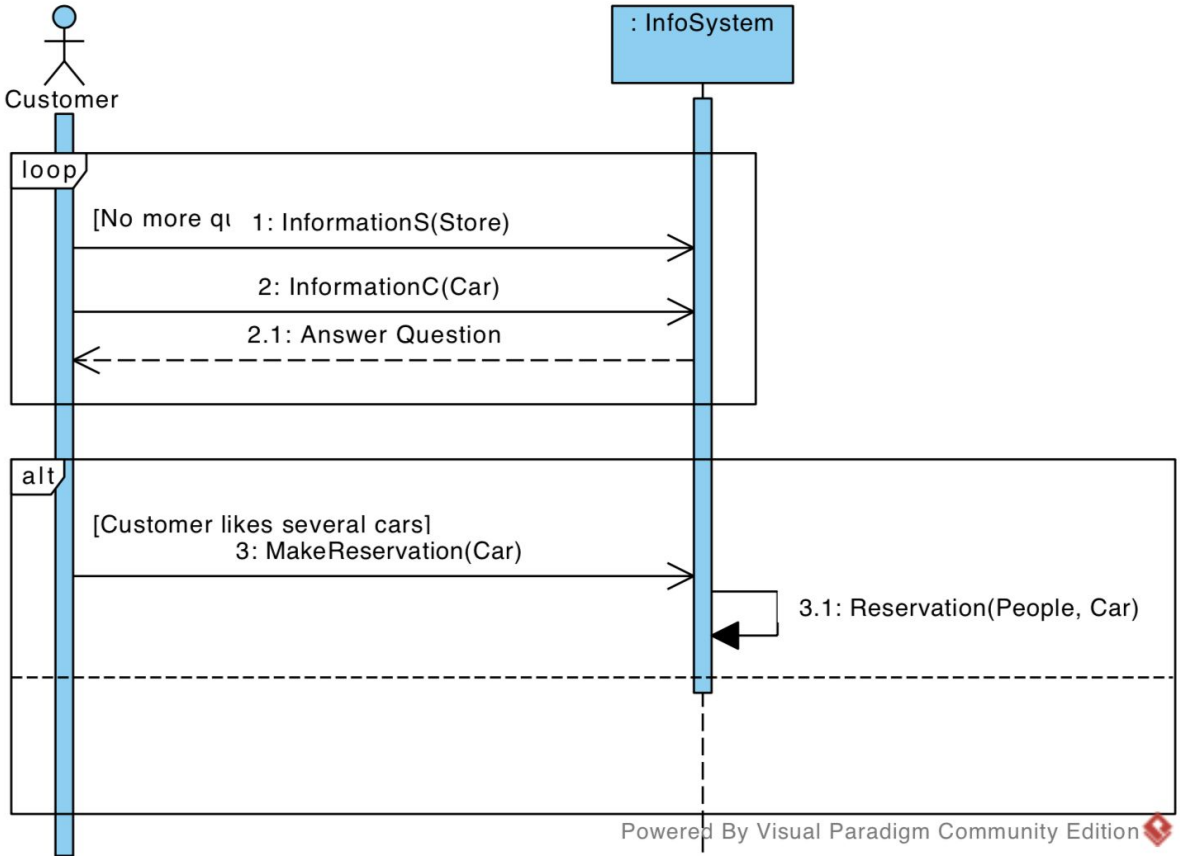
	Access to the Car Information system	Access to the private data system	sales report	Speak different language	Price of all different parts	Employees contact information	Open hours	license for car dealers	Access to car
Search cars	✔				✔	✔			
Introduce cars	✔			✔	✔				✔
Views journal account		✔	✔						
Maintain of Cars	✔								✔
Check stock		✔							
Availability of cars		✔					✔		✔
Check profits		✔	✔						
Information of car dealers	✔			✔		✔	✔		
Prerequires	✔							✔	

- **System sequence diagrams**

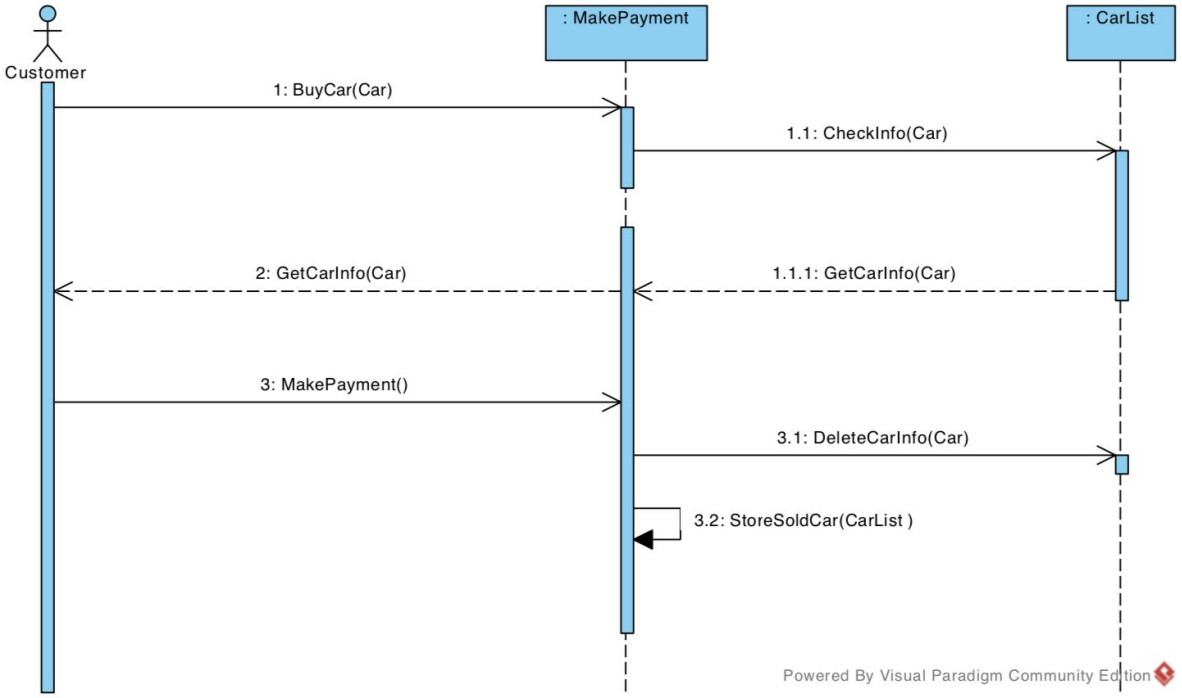
- Income Car


server
: CarList
loop
[Store information until car stock is full]
1: setCarName(String)
2: setCarID(int)
3: setCarPrice(Double)
4: setCarMaker(String)
5: setCarYear(int)
6: setCarMileage(int)
7: setCarModel(String)
7.1: TheStockIsFull(boolean)

- The customer gets information



- Make Payment


Customer
: MakePayment
: CarList
1: BuyCar(Car)
1.1: CheckInfo(Car)
2: GetCarInfo(Car)
1.1.1: GetCarInfo(Car)
3: MakePayment()
3.1: DeleteCarInfo(Car)
3.2: StoreSoldCar(CarList)
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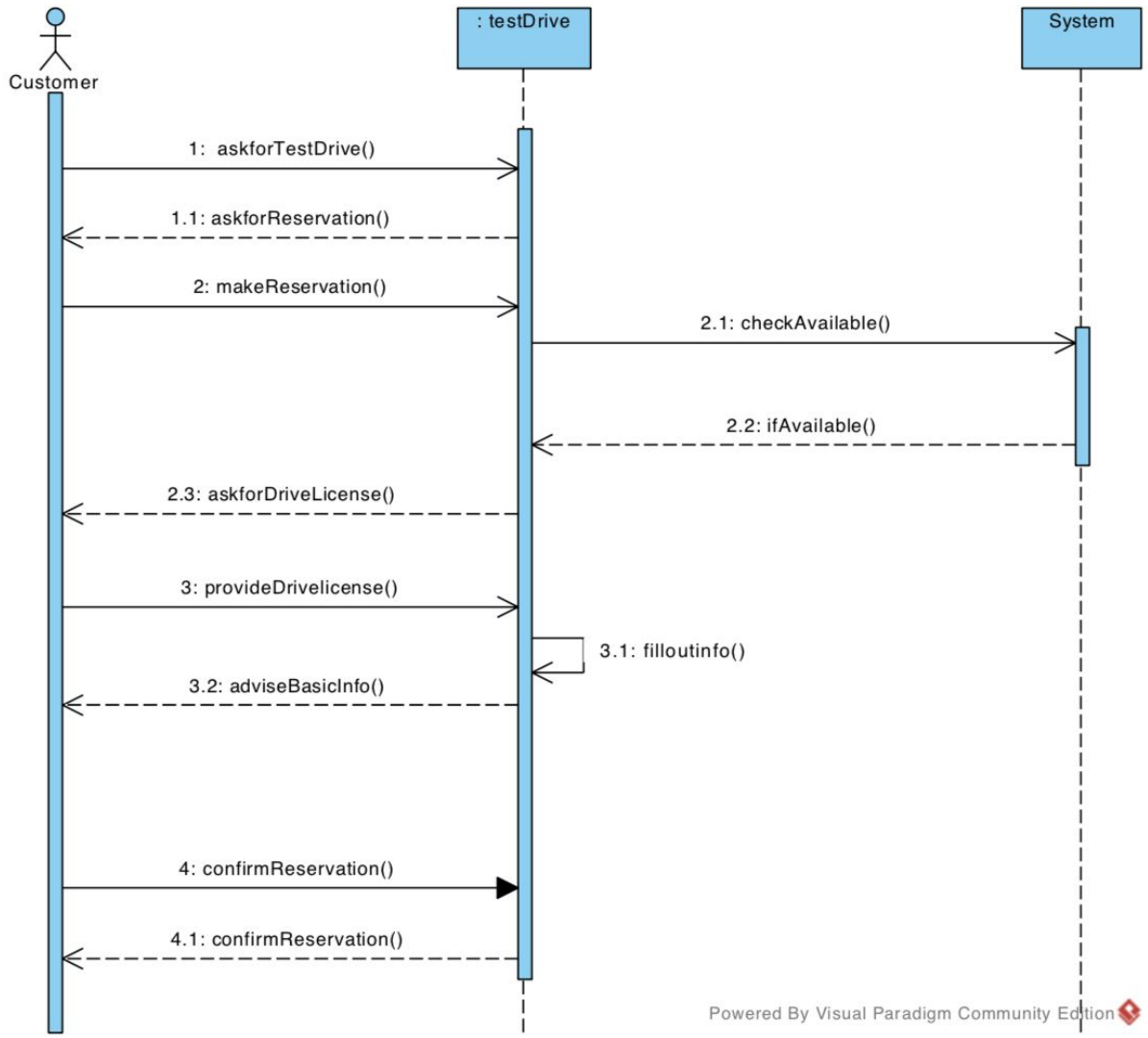
- Test Drive:


Customer
: testDrive
System
1: askforTestDrive()
1.1: askforReservation()
2: makeReservation()
2.1: checkAvailable()
2.2: ifAvailable()
2.3: askforDriveLicense()
3: provideDrivelicense()
3.1: filloutinfo()
3.2: adviseBasicInfo()
4: confirmReservation()
4.1: confirmReservation()
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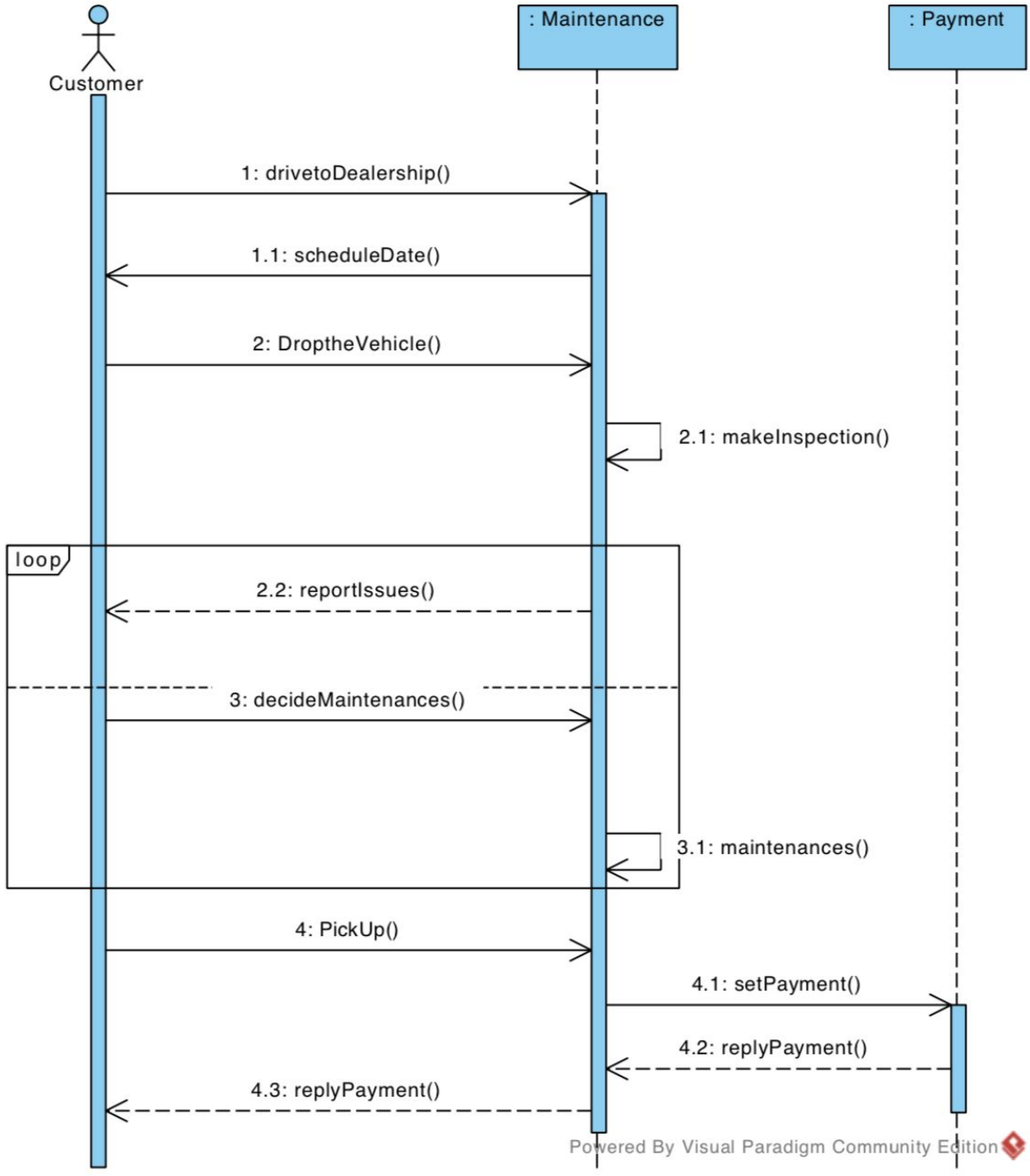
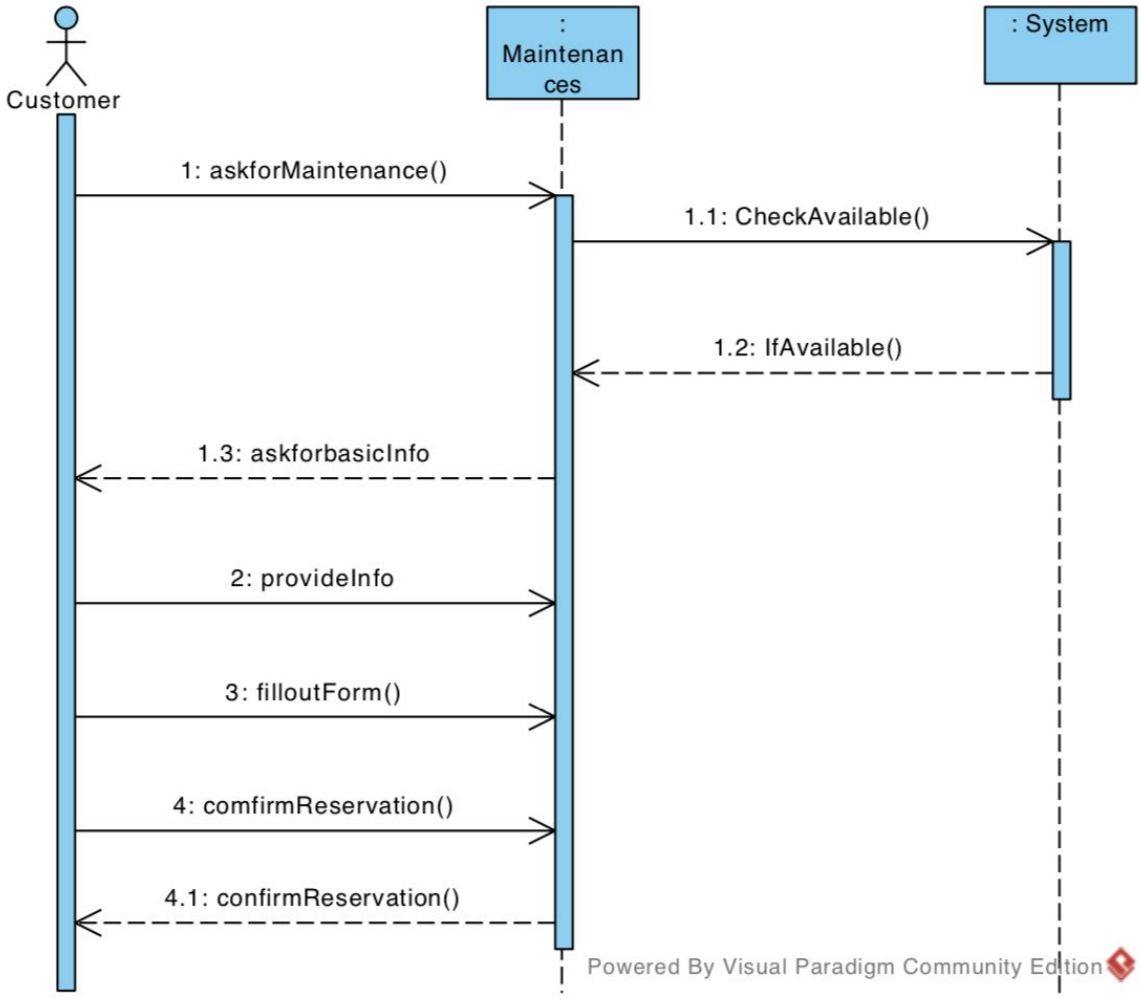
Maintenance:




Customer
: Maintenances
: System
1: askforMaintenance()
1.1: CheckAvailable()
1.2: IfAvailable()
1.3: askforbasicInfo
2: provideInfo
3: filloutForm()
4: comfirmReservation()
4.1: confirmReservation()
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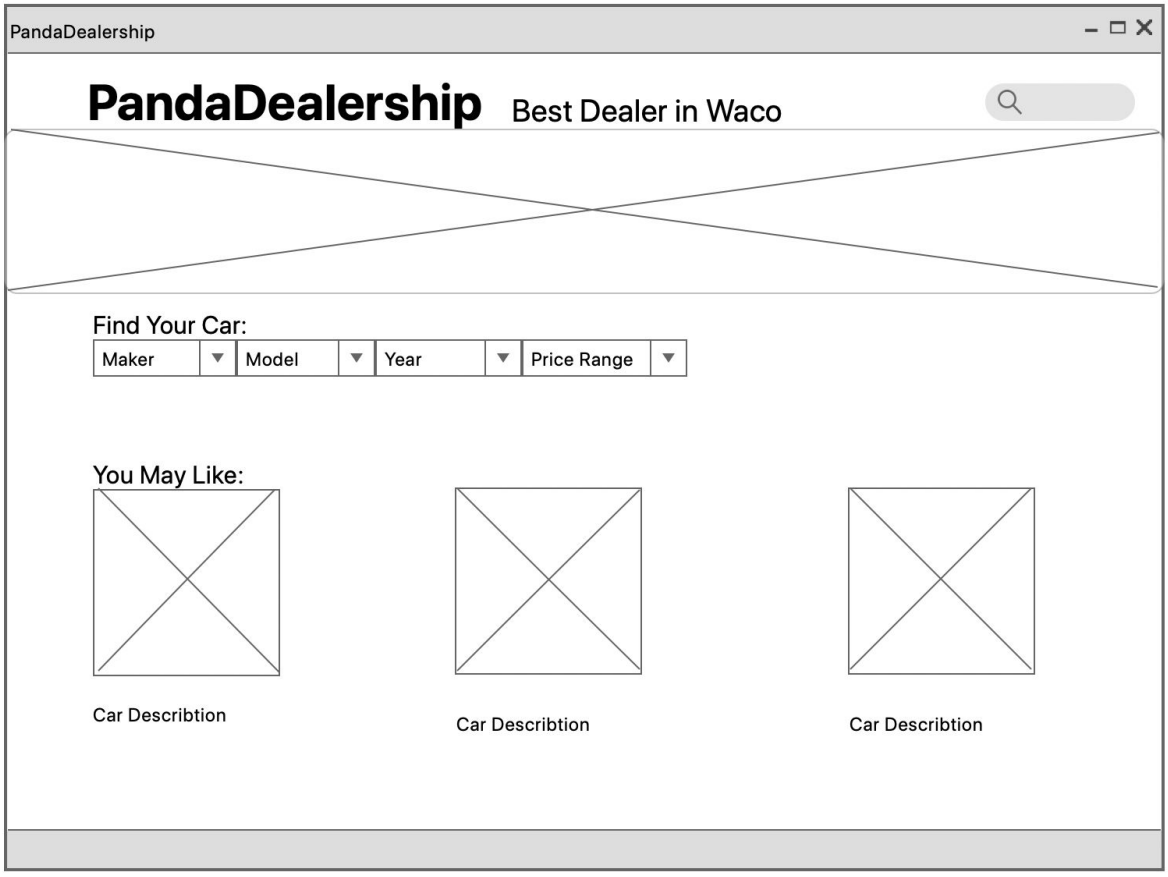
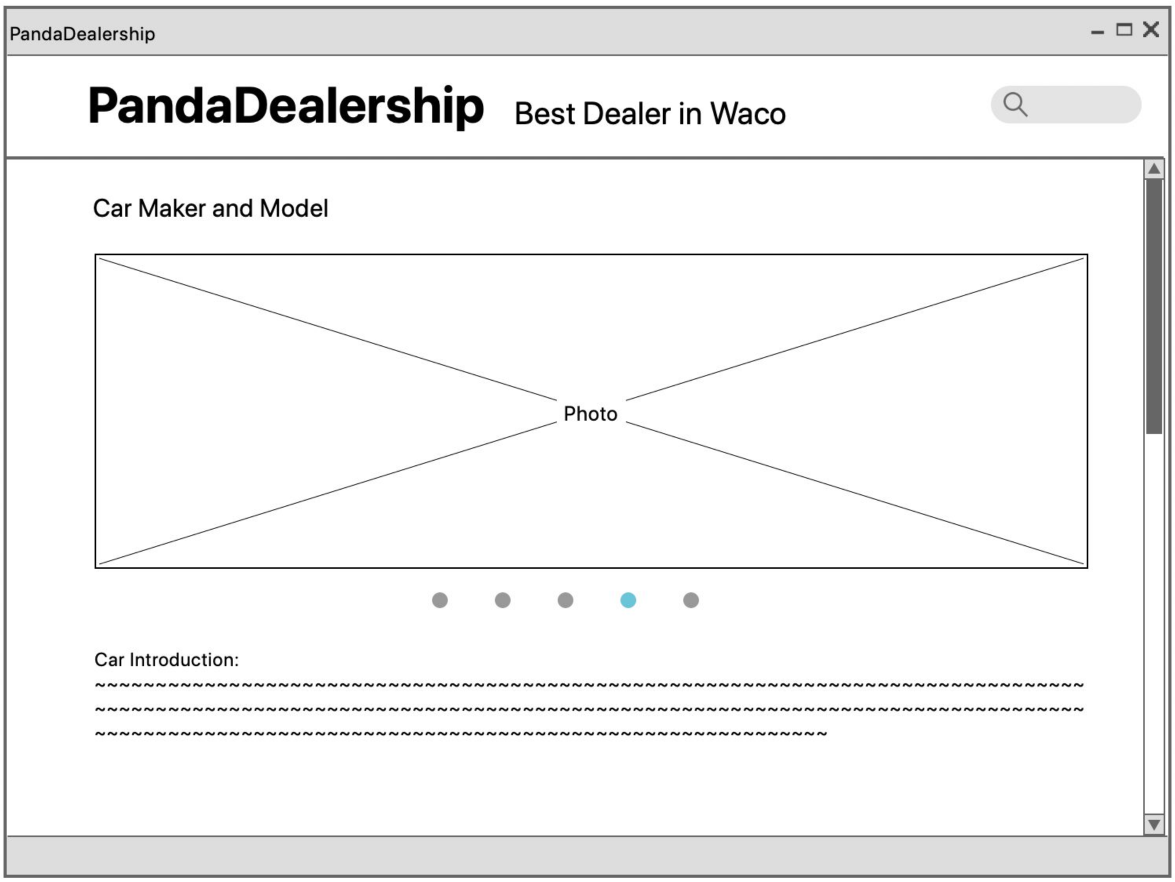
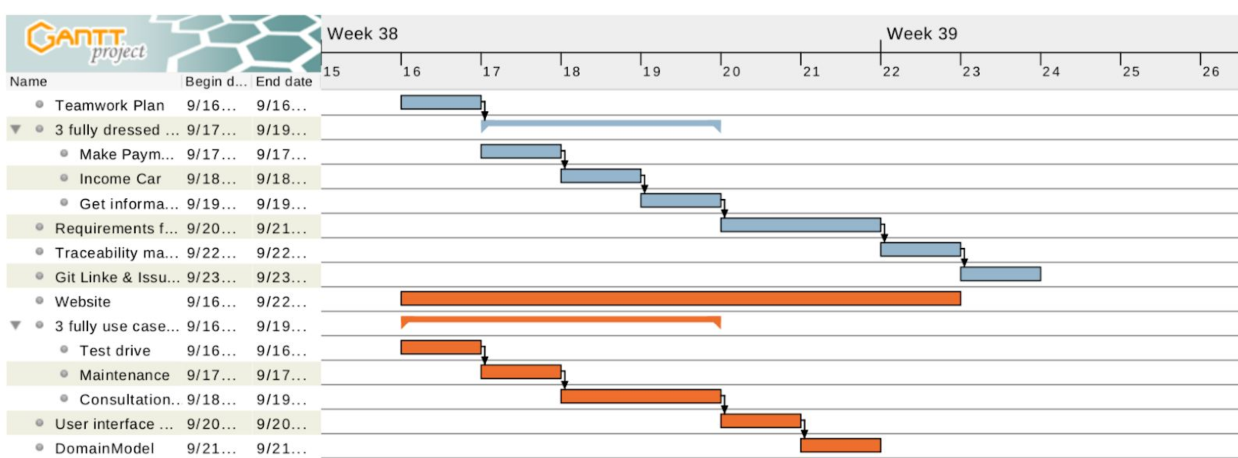
- **User interface wireframes**
  HomePage:



CarPage:



- **Teamwork plan**



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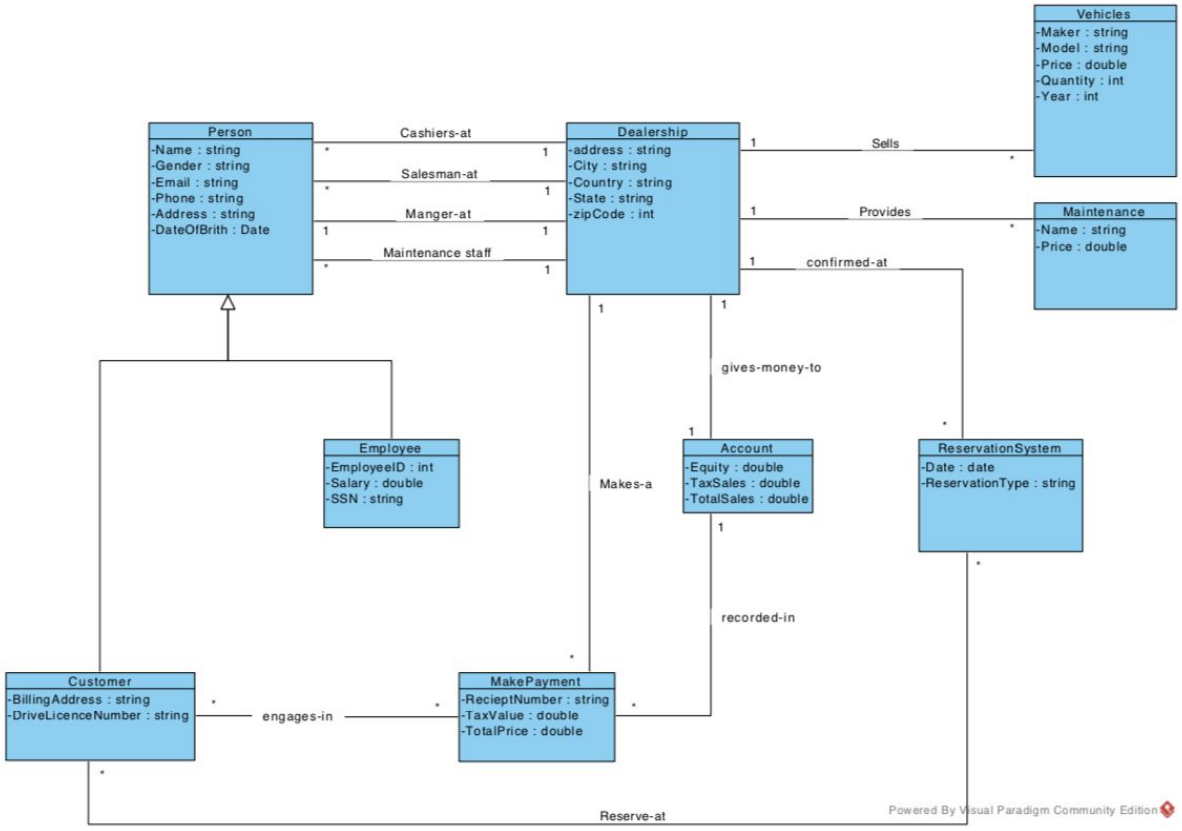
- **Domain model**



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- **Actors**
  - Customer
  - Salesman
  - Manager
  - Cashier
  - Server
- **TimeCards**
  - *Peiyang Chang*
    - *Teamwork Plan (09/16)*

        - *3 Fully Dressed use cases (MakePayment, GetInformation, IncomeCar) (09/17-09/19)*
        - *3 System Sequence Diagram MakePayment, GetInformation, IncomeCar) (09/17-09/19)*
        - *Requirements for functional and nonfunctional (09/20-09/21)*
        - *Traceability matrix (09/22)*
        - *Git Linke & Issue Tracking Link(09/23)*
    - *Yanjie Ning*
        - *Website (09/16 & 09/22)*
        - *DomainModel(09/22)*
        - *3 Fully Dressed Use Cases(TestDrive, Maintenance, Consultation Service) (09/16 - 09/19)*
        - *3 System Sequence Diagram(TestDrive, Maintenance, Consultation Service) (09/16 - 09/19)*
        - *User interface wireframes*