Problem domain: Information system for a vehicle rental company

Solution

The Use case for the information system for vehicle rental system is as below

Use Case: Process vehicle rent transaction

Primary Actor: Customer/Member

Preconditions:

1. *Customer* must be a member of the *vehicle rental company* and has a membership id to uniquely identify him
2. *Rental policy* is in place to calculate the per day cost and per day late cost for rented vehicles

Post Conditions:

1. The *member* has returned the vehicle.
2. Cost for the rental duration is calculated as per *Rental policy*
3. The *Invoice* is generated with the correct cost.

Main Success Scenario (Basic flow)

1. *Customer* initiates *rental transaction*
2. *Customers* selects the type of vehicle and enters date and time for start of rental period and return date and time
3. The System calculates the estimated cost based on the details entered determined by the *Rental Policy*
4. The system records booking of *Vehicle* in *Rental Agreement*
5. *Customer* returns the vehicle after trip.
6. Date and time when the vehicle was returned recorded.
7. Due date is calculated and total amount is calculated and updated in *rental agreement*
8. *Invoice* is generated and given to the *customer*
9. *Customer* makes the *payment*

Using noun phrase approach the following entities can be identified from the above use case (Blue italic words).

1. Customer
2. Vehicle Rental Company
3. Rental Policy
4. Rental Transaction
5. Vehicle Type
6. Vehicle
7. Rental Transaction
8. Invoice
9. Payment

Associations identified based on verb phase approach are (words in red)

1. Initiates
2. Selects
3. Determines
4. Records booking of
5. Generates
6. Paid

Using these identified entities and associations, the concept diagram can be created a below: