Lab Week 6

# Purpose :

To understand the relationship between Activity diagrams and System sequence diagram.

# Instructions

Use Visual Paradigm to create your diagrams

**Q1** Given the following narrative, develop an activity diagram and a fully developed description for a use case of ***Add a new vehicle to an existing policy*** in a car insurance system.

A customer calls an insurance clerk at the insurance company and gives his/her policy number. The clerk enters this information, and the system displays the basic insurance policy. The clerk then checks the information to make sure the premium is current and the policy is in force.

The customer gives the make, model, year, and vehicle identification number (VIN) of the car to be added. The clerk enters this information, and the system validates that the given data is valid. Next the customer selects the types of coverage desired and the amount of each. The clerk enters the information, and the system records each and validates the requested amount against the policy limits. Each policy has one owner. The owner is also a named driver of the vehicle.

Finally, the customer must identify all drivers and the percent of time they drive the car. If a new driver is to be added, then another use case, *Add new driver,* is invoked.

The name and date of birth is recoded for each driver.

At the end of the process, the system updates the policy, calculates a new premium amount, and prints the updated policy statement to be mailed out to the policy owner.

The following are examples of some coverages available .

**Bodily Injury Liability**  
Bodily injury liability covers you in the event that you cause an accident in which another person (or people) is injured.

**Property Damage Liability**  
Coverage in case your car damages someone else's property - usually this means someone else's car, but it could be a fence, light post or other piece of property.

**Medical Payments**  
Medical Payments covers certain medical expenses if any vehicle occupants are injured in an accident.

**Collision Coverage**  
Collision coverage is an optional coverage that covers damage to your car caused by impact with another car or object.

**Comprehensive Coverage**  
Comprehensive car insurance coverage is also an optional coverage that covers damages to your car caused by something other than a collision - like theft, fire, etc.

Q2

Given the following list of classes and relationships for the car insurance system in the previous exercise, list the preconditions (i.e., the objects that need to exist in the system before the use case begins) and the postconditions (i.e., the objects and relationships that must exist after the new case is completed). The use case you should consider is *Add a new vehicle to an existing policy*.

Over time a vehicle could have a number of policies but there is ever only one policy which is the current or operational policy.

## Classes in the system:

1. Policy
2. InsuredPerson
3. InsuredVehicle
4. Coverage
5. StandardCoverage (one for each category of coverage and rate amount )
6. StandardVehicle (one for each types of vehicles ever made and cost to insure)

## Relationships in the system:

1. Policy has InsuredPersons (one to many)
2. Policy has InsuredVehicles (one to many)
3. Vehicle has Coverages (one to many)
4. Coverage is for a type of StandardCoverage
5. Vehicle is a StandardVehicle

Q3 Develop a system sequence diagram based on the narrative and your activity diagram for Q1.

Q4 Draw a class diagram to illustrate the classes and relationships used in the realization of

***Add a new vehicle to an existing policy***