OOP Module Home Assignment 1

In this assignment our focus is on Road Accident Settlement scenario:

Vehicle Insurance Policies: Every policy is issued to a vehicle has expiry date and policy number.

We have two different types of Vehicle Insurance Policies.

Third Party Policy:

If policy owner vehicle (called self) collides with another vehicle (called third party), policy covers 80% of the damage to the third party vehicle.

Package Policy:

If policy owner vehicle (called self) collides with another vehicle (called third party), policy covers 80% of the damage to the third party and 50% of the damage of self.

Insured Vehicle:

- When requested, would produce an insurance policy
- Would do settlement with oncoming vehicle in case of a collision
- Would throw an exception if something goes wrong in settlement

Design a system with following features

1. All engine powered vehicles are required to be insured and should have a policy
2. Every four wheeler is advised to have a Package Policy.
3. Every vehicle has a property called number of wheels and owner name.
4. It should have 2 Engine-powered Two-wheelers (one has valid policy other has expired), Pick any model other than the given in session example
5. It should have 2 Four-wheelers (one has valid policy other has expired), Pick any model other than the given in session example.
6. 2 Cycles, Pick any model other than the given in session example
7. Every vehicle (referred as self) would collide with every other vehicle (referred as oncoming)

In case of collision

1. Assign a any damage amount to both self and oncoming vehicle.
2. If self is required to have a policy then

   Self would do a settlement with oncoming vehicle.

- If self has valid policy then it would decrease damages of oncoming vehicle as per the policy else throw exception with sorry message
- If self has valid package policy then it would decrease damages of oncoming and self as per the policy.

3. else throw exception with sorry message

Output of the Program.

1. Tabular details of the vehicle that are created in the system.
   Ex:
   Model, owner name, number of wheels, policy class, policy expiry
2. Collision loop start message
3. Collison details (for each collision)
   Ex:
   I am <model, owner name>, collided with <model, owner name>
   Damages self:
   Damages oncoming:
   Settlement details.
   oncoming vehicle damage status.
   self damage status.

   Ex: (in case of any issues with settlement exception)
   I am <model, owner name>, collided with <model, owner name>
   Damages self:
   Damages oncoming:
   Settlement details:
   Exception thrown

   Exception is caught: error message
   message what went wrong in settlement

Note: No need to read anything from any file, hardcode it.