

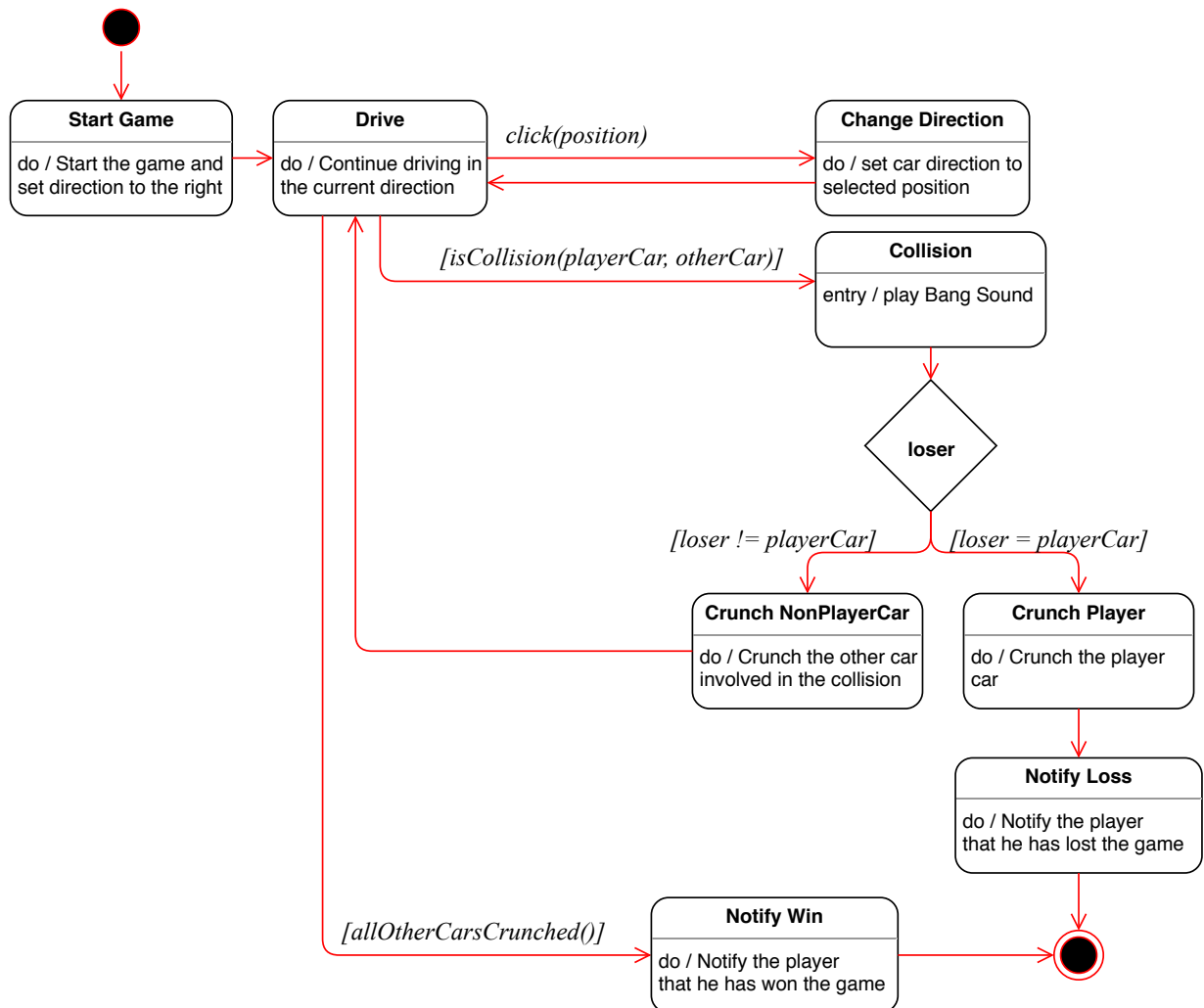
Einführung in die Softwaretechnik 2018

Sheet 04

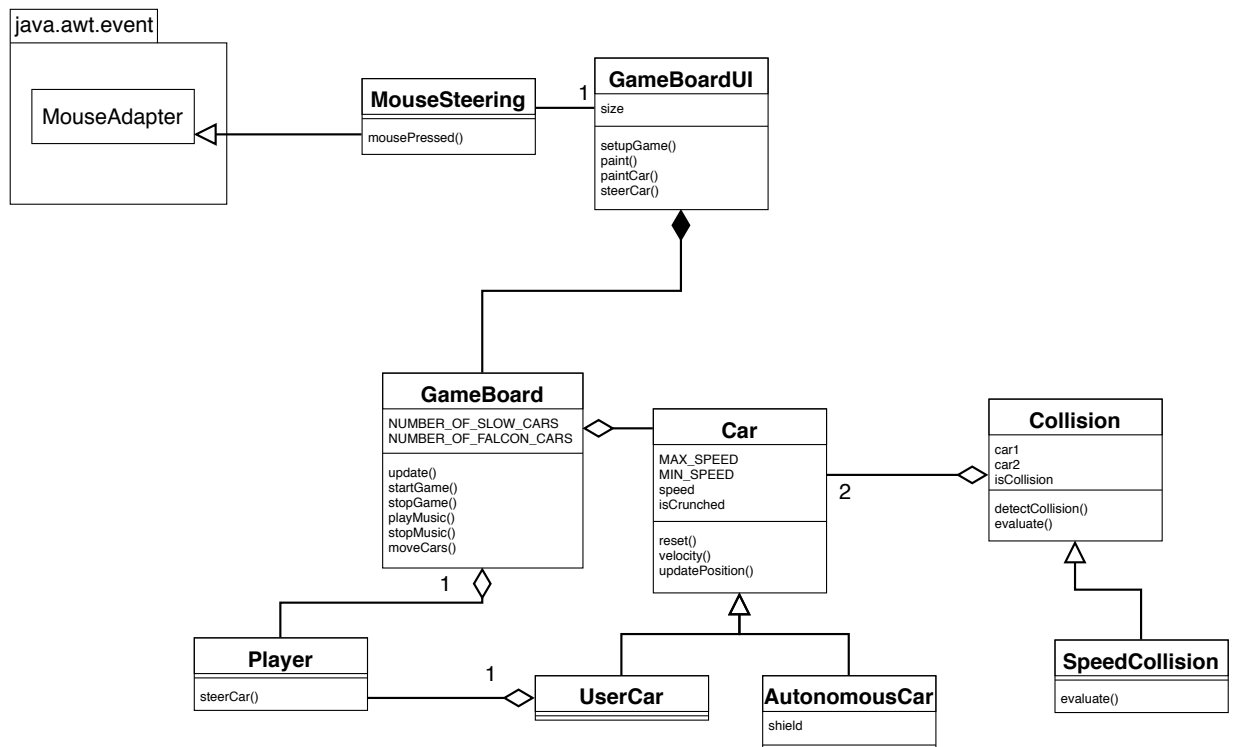
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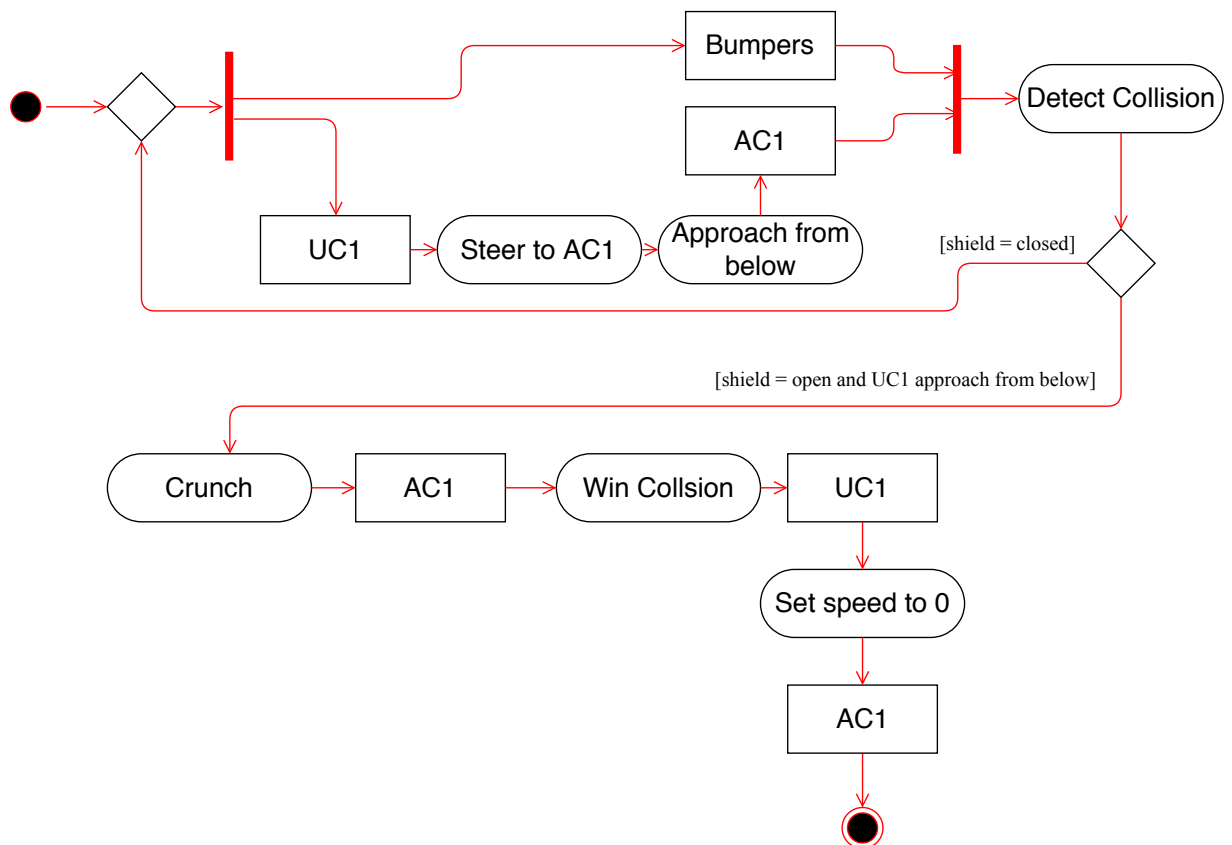
1. Dynamic behavior:



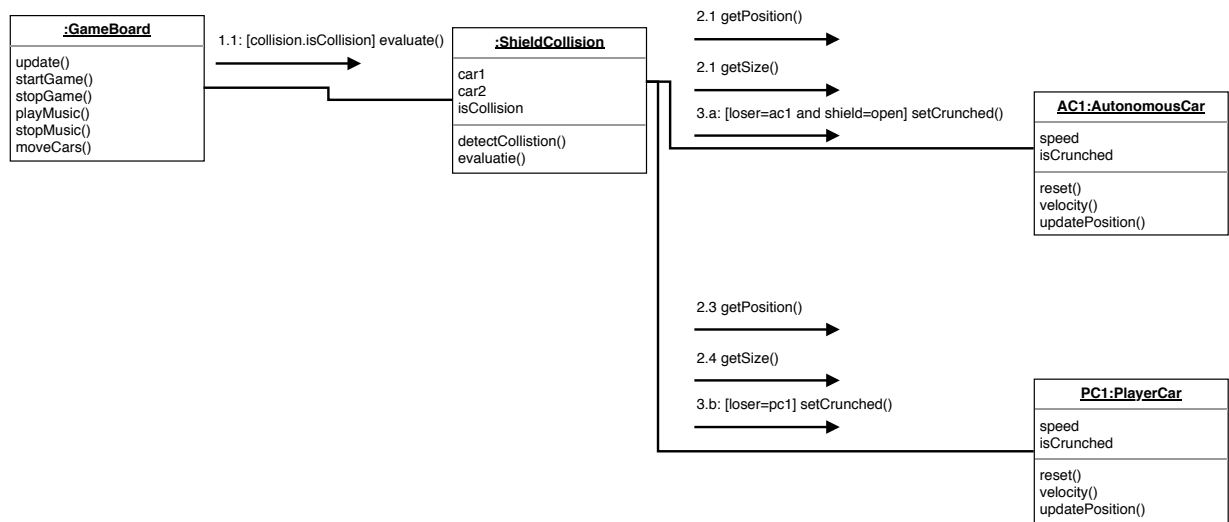
2. Taxonomy for the car shield use case:



3. Win Collision activity diagram:



4. Collision detection algorithm communication diagram:



5. Coupling measures the dependency between different subsystems inside a project. High coupling therefore implies that changes to one subsystem will have a large impact on another subsystem. Low coupling on the other hand means that, a change in one subsystem does not affect others.

Cohesion describes the dependency among two classes. Therefore high cohesion describes a subsystem where the classes perform similar tasks and are related to each other in many associations. Low cohesion is the inverse of the above. A subsystem with many classes that handle very different tasks and have few to no associations with each other.

These terms can be used to describe a good system design, as a good system should have high cohesion and low coupling between the different submodules.

An Example of this would be the *car* package in the Bumpers game. Here Cohesion is used between the different car types in the form of inheritance. This provides a close relationship between the different objects and ensures that the participating classes are concerned with only a single purpose, the details of modeling a car.

A low coupling is then used to connects this *car* package to the other subsystems of the game.