

OPMS 2018 - Exercise 4

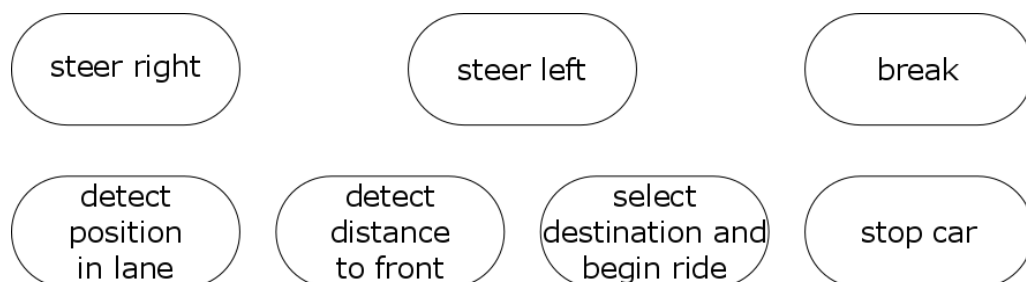
Task 1 (Activity Diagram) - Solutions

Create an activity diagram for an autonomous car using the following process description and specified activities. Use each specified activity exactly once!

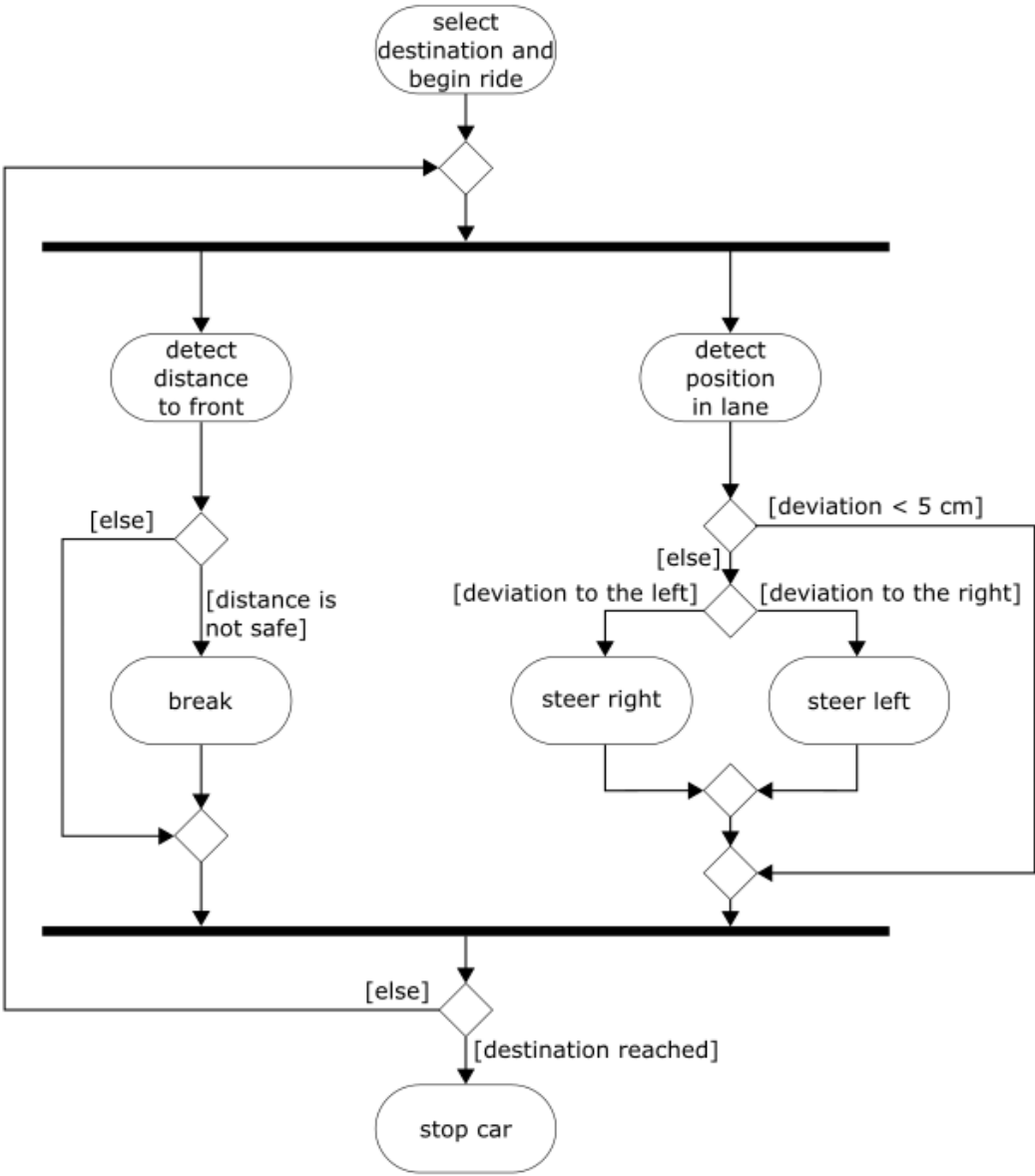
- First of all a destination has to be selected and the ride begins.
- Next, the car detects the distance to other cars in the front as well as its position in lane. If necessary corrections are made:
 - If the distance is smaller than the safety distance, the car has to break.
 - If the relative position in the lane is larger than 5 cm, the car has to steer left or right, depending on the direction of the deviation.

Both processes, the distance to other cars as well as the position in the lane run in parallel.

- If the destination has not been reached, the previous step is repeated.
- Eventually, after the destination has been reached, the car is stopped.



Solution



Task 2 (UML)

Draw the Class Diagram for the following code

```
public abstract class Construction {  
    protected int yearOfConstruction;  
    protected double length;  
    protected double width;  
    protected double height;  
  
    public int getYearOfConstruction() {  
        return yearOfConstruction;  
    }  
}  
  
public class Building extends Construction {  
    protected int numberOfRooms;  
    protected int numberOfFloors;  
  
    public int getNumberOfRooms() {  
        return numberOfRooms;  
    }  
  
    public double getFloorArea() {  
        return length*width*numberOfFloors;  
    }  
}
```

Solution

