

Traffic Lights Management System



Prepared for
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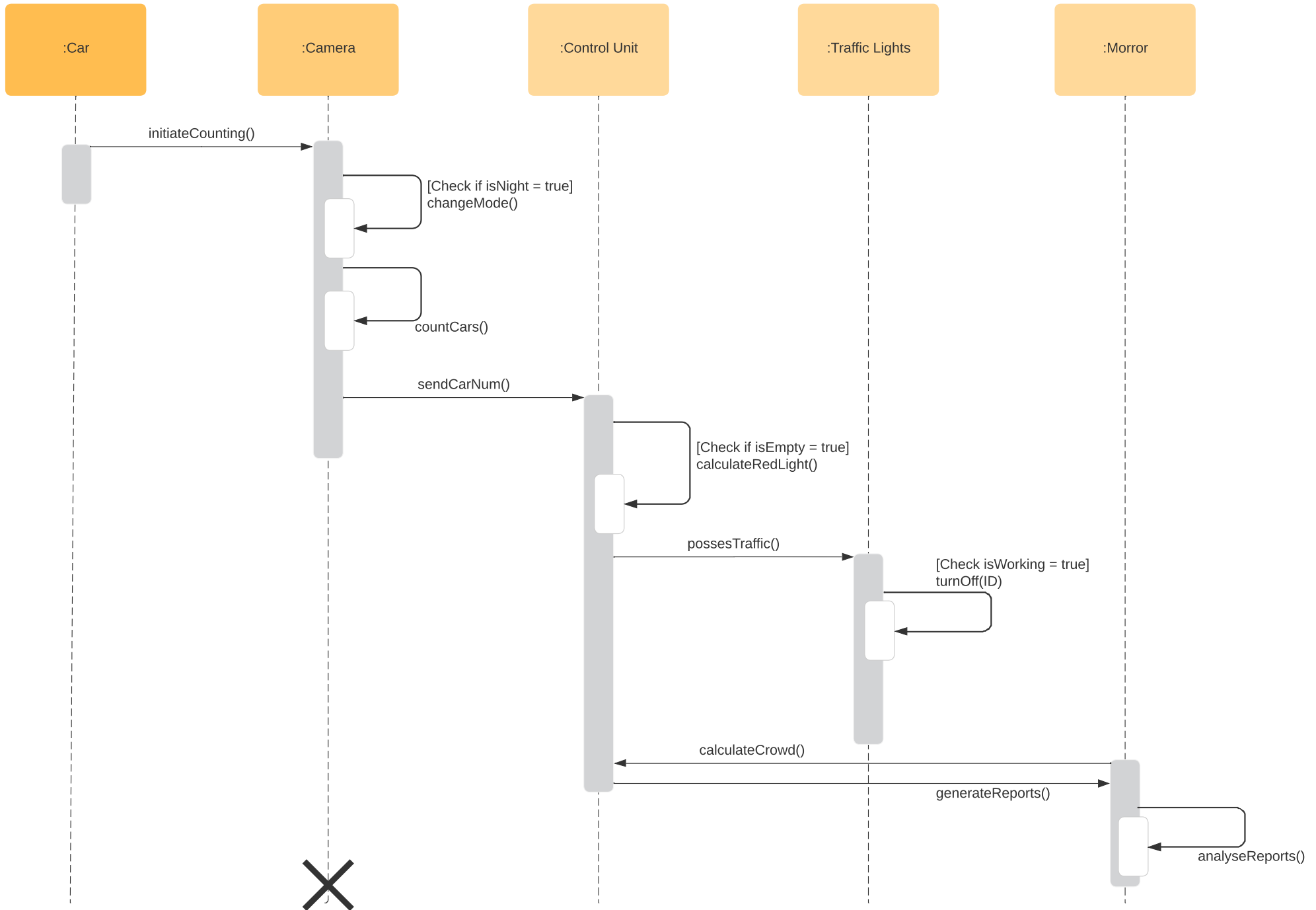
Scenario 1 / Red Lights

Sequence of Interactions (Simplified):

- 1- "Car" stopping by the traffic light will begin the process by calling the **initiateCounting()** method to the "Camera".
- 2- "Camera" will check the lighting in the environment and if it is dark/night the camera will call the **changeMode()** method .
- 3- "Camera" will count the cars stopping by using the **countCars()** method.
- 4- "Camera" sends the total number of cars shown to the "Control Unit" with the help of **the sendCarNum()** method.
- 5- "Control Unit" checks if the number of cars=0 / empty it will start the **calculateRedLight()** method.
- 6- "Control Unit" will process the traffic by calling the method of **processTraffic()** to the traffic lights.
- 7- "Traffic Light" check if the traffic lights are working then the specific ID traffic light will turn off because no cars are available using the **turnOff(ID)** method.
- 8- "Morrer" will calculate the amount of crowd in different traffic lights using the **calculateCrowd()** method.
- 9- "Control Unit" will work on generating reports that will benefit the "Morrer" by the **generateReports()** method.
- 10- "Morrer" at last, will collect the reports and start analysing them using the **analyseReports()** method.

Sequence Diagram

Scenario 1 Project | November 5 2023



Scenario 2 / Emergency

Sequence of Interactions (Simplified):

- 1- "Car" stopping by the traffic light will begin the process by calling the **initiateCounting()** method to the "Camera".
- 2- "Camera" will check the lighting in the environment and if it is dark/night the camera will call the **changeMode()** method.
- 3- "Camera" will count the cars stopping by using the **countCars()** method.
- 4- "Camera" sends the total number of cars shown to the "Control Unit" with the help of the **sendCarNum()** method.
- 5- "Control Unit" checks if there is an emergency such as an ambulance then it will start the **calculateLanePriority()** method.
- 6- "Control Unit" will process the traffic by calling the method of **processTraffic()** to the traffic lights.
- 7- "Traffic Light" check if the traffic lights are not working then the specific ID traffic light will turn on because emergency events make this specific traffic light top priority using the **turnOn(ID)** method.
- 8- "Morrer" will calculate the amount of crowd in different traffic lights using the **calculateCrowd()** method.
- 9- "Control Unit" will work on generating reports that will benefit the "Morrer" by the **generateReports()** method.
- 10- "Morrer" at last, will collect the reports and start analysing them using the **analyseReports()** method.

Sequence Diagram

Scenario 2 Project | November 5 2023

