

Actors

Lecture Question

Task: Add detours to the traffic example and test this functionality

- Start with all the code in the week10.traffic package
- Implement detours for Intersections
- When an intersection receives a Detour message
 - All cars approaching this intersection are told to take the detour
 - Cars should prepend all directions in the detour to the beginning of their list in the same order as they appear in the detour list
 - Note: The detour will be the same regardless of which direction the car is approaching from
- Write a test suite named tests.TestTraffic to test this functionality

Traffic Example

- Intersections
 - North/South road intersects with an East/West road
 - Initially Green light East/West
 - Alternate green light at a fixed interval
- Cars
 - Have a List of directions to follow
 - Each direction has:
 - A destination Intersection
 - The time it takes to reach that Intersection
 - Whether the intersection will be approached from the East/West or North/South

Traffic Example

- When a car approaches an intersection:
 - Inform the Intersection
 - Intersection gives the GreenLight for the car to go
 - If the light is red, the Intersection will wait until it's green before sending the GreenLight message
- When a car receives a GreenLight message
 - Proceed to next Intersection in the directions list

Delayed Messages

- There are two cases where we'll have messages that need to be sent with a delay
 - Intersections changing lights at fixed intervals
 - Cars waiting the appropriate amount of time before checking an intersection for a green light
- Similar syntax as repeatedly sending a message (Supervisor example)
- Use `scheduleOnce`

```
import context.dispatcher
// ...
context.system.scheduler.scheduleOnce(
  TimeInterval.milliseconds,
  self,
  ChangeLight
)
```

Delayed Messages

- Must import the dispatcher from inside the Actor's class
- Specify:
 - The time delay
 - The recipient
 - self contains an ActorRef to this actor
 - The message to be sent

```
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// ...
context.system.scheduler.scheduleOnce(
  timeInterval.milliseconds,
  self,
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To the Code

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