

KSRA Learning Academy

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KSRA Learning System

What Is Object-Orientation?



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Object Interaction – Interaction Overview Diagrams Timing Diagrams

Interaction Overview Diagrams

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- ▶ Variants of activity diagrams (see Ch 5)
- ▶ Focuses on the flow of control in an interaction
- ▶ Nodes in the diagram may be interactions or interaction occurrences
- ▶ Interaction needs to be broken down into its key elements.

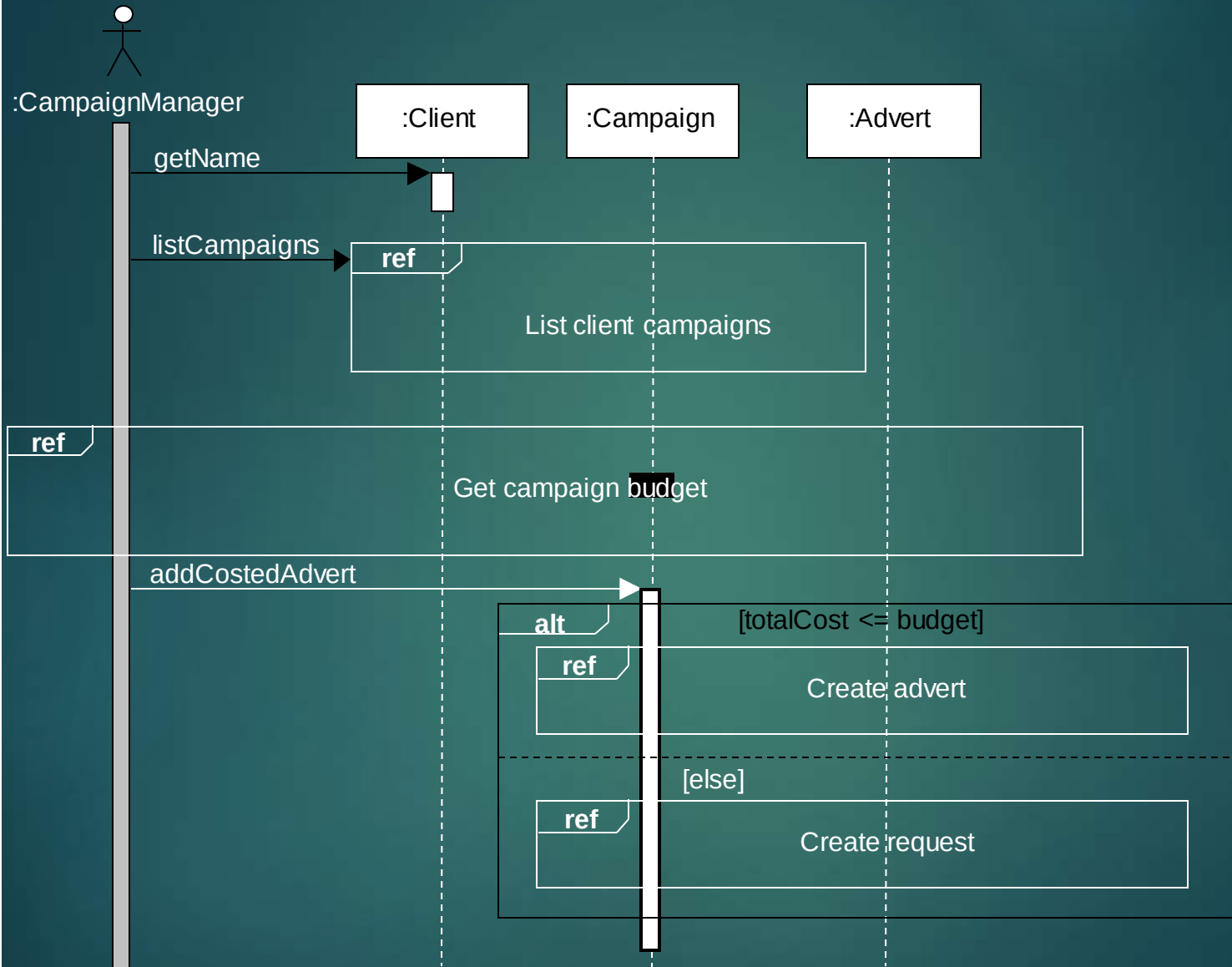
Interaction Overview Diagrams

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- ▶ An alternative version of the sequence diagram Add a new advert to a campaign if within budget is shown on the next slide and is used to develop an interaction overview diagram



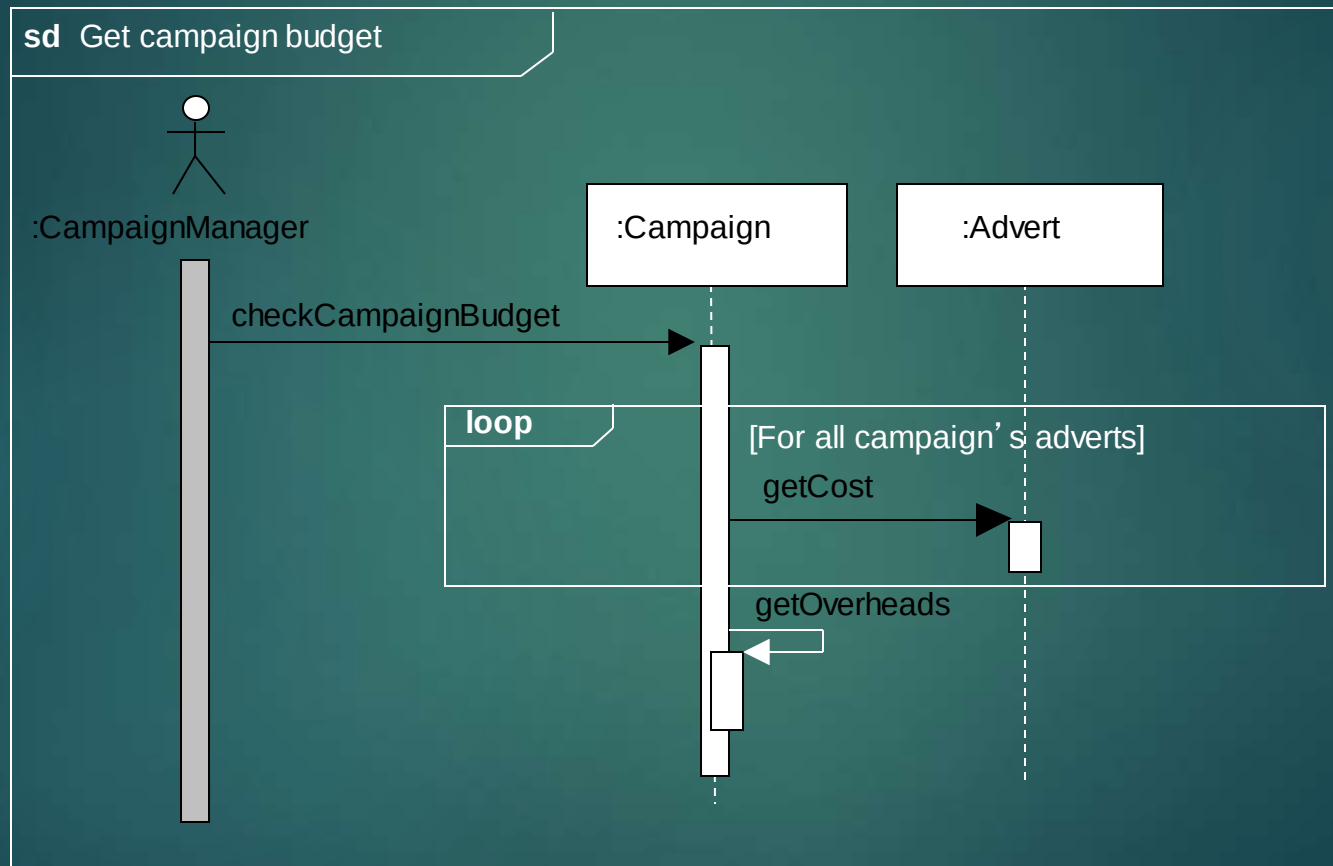
sd Add a new advert to a campaign if within budget



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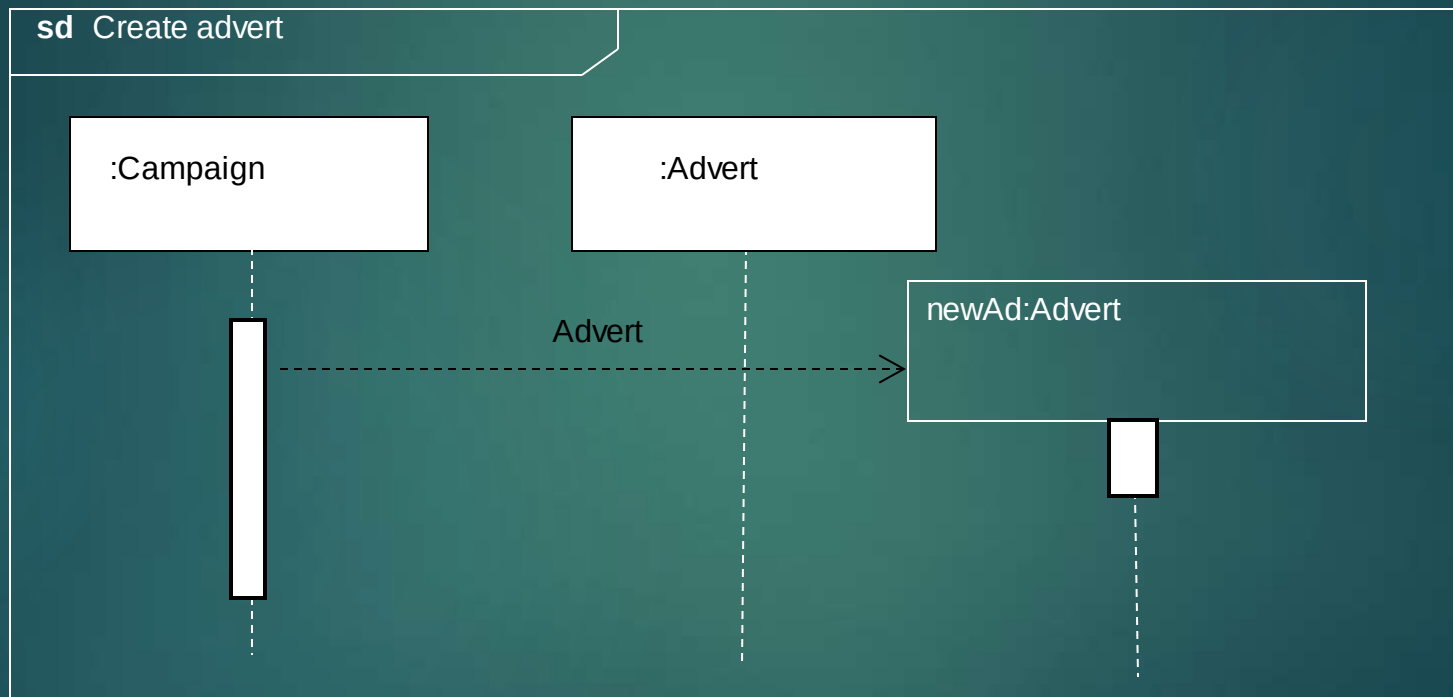
Interaction Fragment Used

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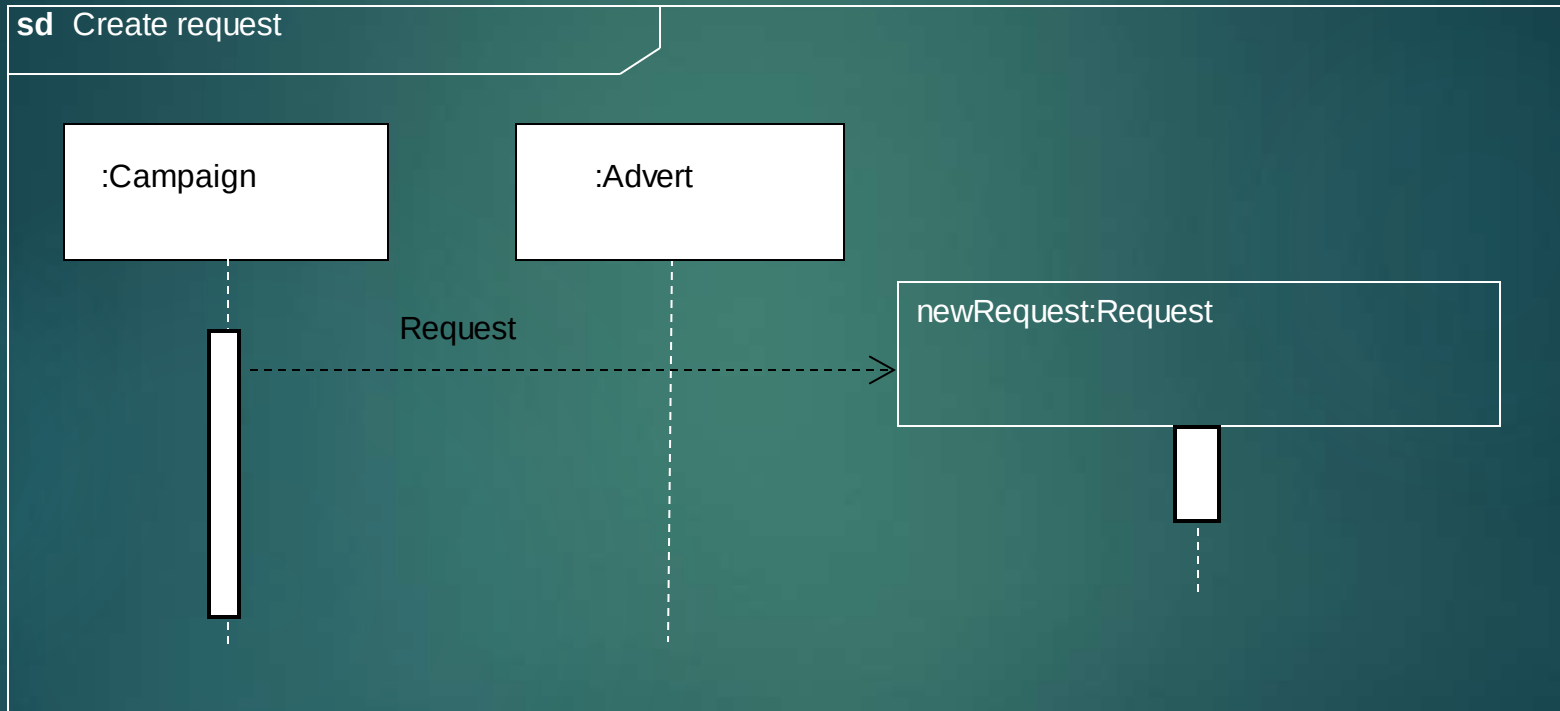
Interaction Fragment Used

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Interaction Fragment Used

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sd Add a new advert to a campaign if within budget

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Initial node

Interaction occurrence

In-line sequence diagram

Decision

Final node

sd List Campaigns for Client

:CampaignManager

:Client

:Campaign

getName

listCampaigns

loop

[For all client's campaigns]

getCampaignDetails

sd Add costed advert

:CampaignManager

:Campaign

addCostedAdvert

[totalCost <= budget]

[totalCost > budget]

ref

Create advert

ref

Create request



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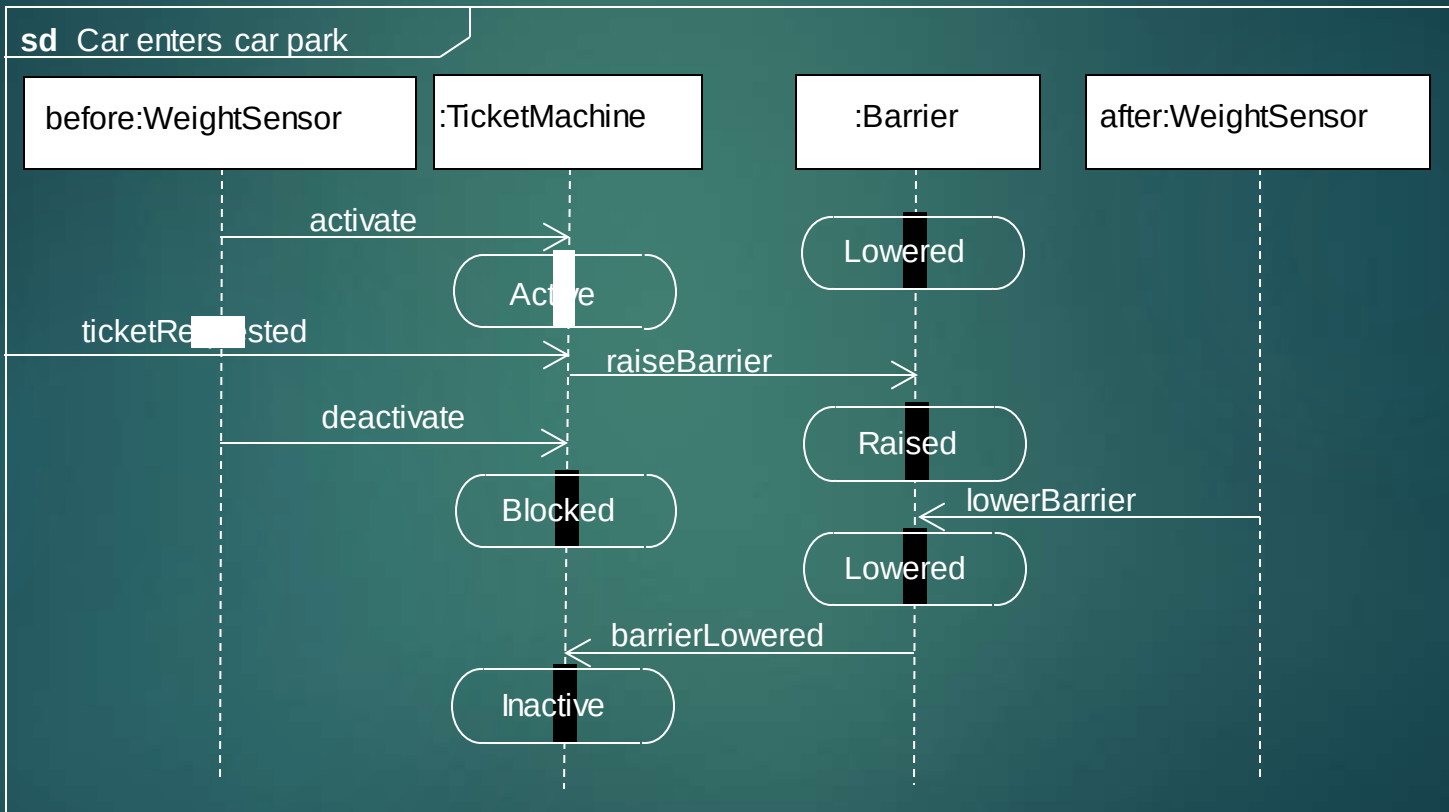
Timing Diagrams

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- ▶ A new feature in UML 2.0
- ▶ Show how time constraints affect interactions between lifelines
- ▶ The sequence diagram Car enters car park is the basis for the subsequent timing diagram

Timing Diagrams

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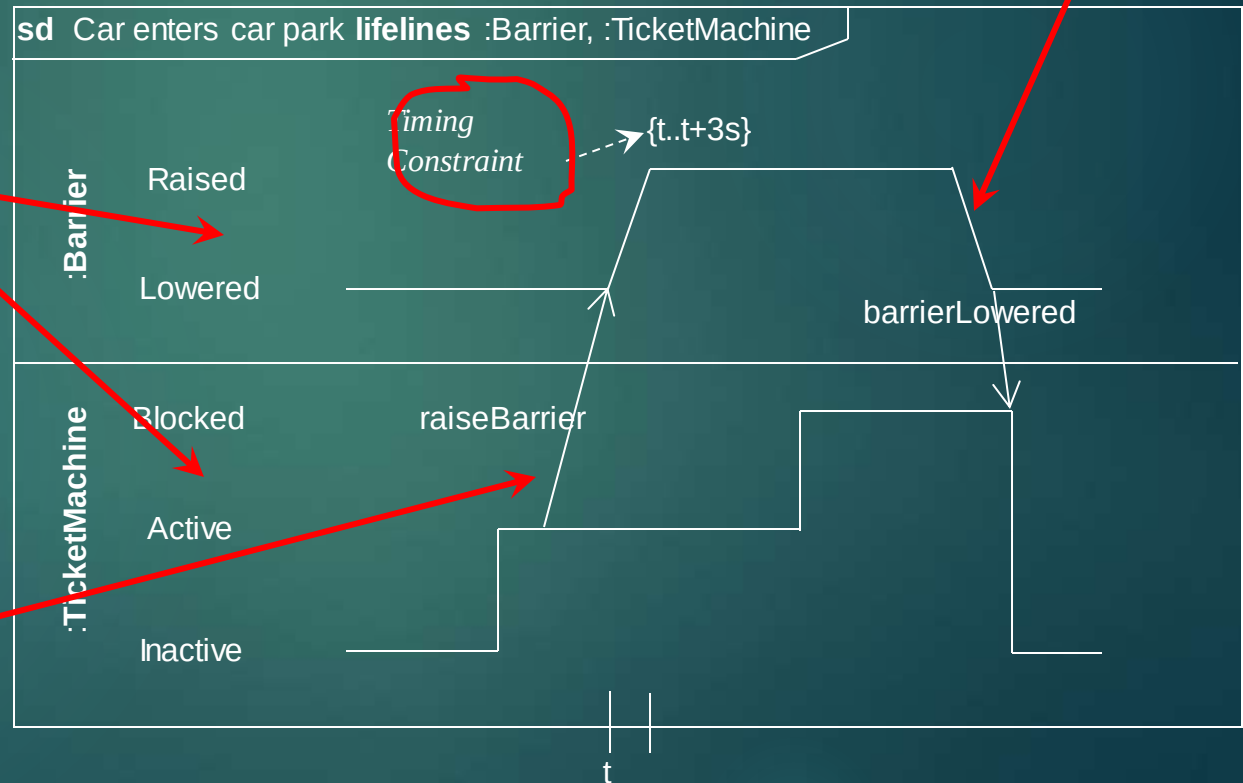
Timing Diagrams

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Diagram has two instances, one for each lifeline

Message from one lifeline to another

Sloped line represents duration of state change



Model Consistency

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- ▶ Timing diagrams must be consistent with the relevant sequence diagrams and state machines.



References

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- ▶ UML Reference Manual (OMG, 2004)
- ▶ Bennett, Skelton and Lunn (2005)

(For full bibliographic details, see Bennett, McRobb and Farmer)

Object-Oriented Technology - From Diagram to Code with Visual Paradigm for UML, Curtis H.K. Tsang, Clarence S.W. Lau and Y.K. Leung, McGraw-Hill Education (Asia), 2005



WE FOCUS ON KNOWLEDGE-BASED ON EDUCATION

KSRA of Empowerment is a global non-profit organization committed to bringing empowerment through education by utilizing innovative mobile technology and educational research from experts and scientists. **KSRA** emerged in 2012 as a catalytic force to reach the hard to reach populations worldwide through Learning management system & E-learning & mobile learning.

The **KSRA** team partners with local under-served communities around the world to improve the access to and quality of knowledge based on education, amplify and augment learning programs where they exist, and create new opportunities for e-learning where traditional education systems are lacking or non-existent.

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