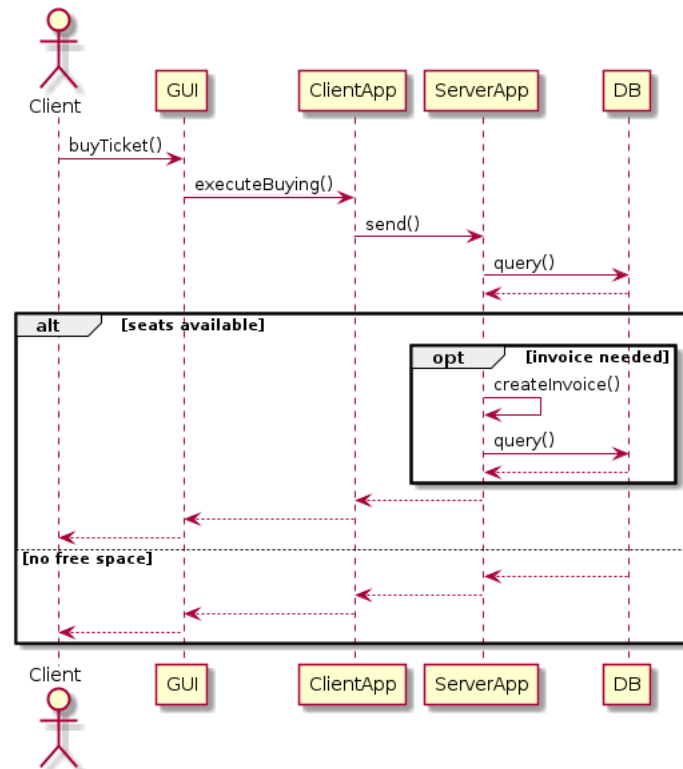


Software Engineering – Sequence diagrams

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1 Sequence diagrams

Sequence diagrams allows to visualize interactions between objects in time.



Upper part of diagrams should consist of objects that take parts in executions. Objects should be placed one to another. Along with objects diagram can contain actors that initialize the task. Actors should be placed first, from the left hand side. On this diagram time is visualized as it flow from top to bottom. It means that elements placed below are later in time.

Each object have its lifeline (dotted line). It indicates the time when object lives.

Between objects on diagram we can visualize interactions (messages sent between objects). There are several types of messages:

- Invocation (synchronous message) – can represents method invocation. In this case caller object is waiting for called object to complete the task. It is represented by solid line with triangular, filled arrow.
- Sending (asynchronous message) – represents sending some information between objects. In this case caller object do not need to wait for second object. It is represented by solid line with normal arrow.
- Return – represents result returning. It is used to visualize that some method return value. It is represented by dashed line with normal arrow.
- Creating – represents creating new object. It is represented by a solid line with «create» stereotype.
- Destroying – represents object destroying. It is represented by a solid line with «destroy» stereotype.

In order to visualize more complicated interactions (conditions, loops) blocks are used. Block is represented by a rectangle that group part of the diagram. There are following types of blocks:

- ref – reference to other diagram
- alt – alternative. Consists of two blocks separated by dashed line that represents the situation when the condition is met and when it is not met respectively.
- opt – Option. It represents situation when some part is executed optionally.
- loop – Loop.
- par – represents part that can be executed parallelly.
- seq – represents part that is executed sequentially. Default behaviour.

2 Tasks to complete

1. Create sequence diagrams for modelled system

Results should be placed in element <article id="sequence-diagrams">. One diagram per each section.