UML – part 4

Implementation view

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Implementation models

- ## Component diagram
  - Describes the logical architecture of software, components, subsystems, packages, interfaces
  - Component: modular, deployable, and replaceable part of a system that encapsulates implementation and exposes a set of interfaces (Maciaszek)

- ## Deployment diagram
  - Deals with the physical architecture of the system, nodes etc.
  - Describes where the logical components are located
  - Node: physical object that represents a processing resource, generally, having at least a memory and often processing capability - includes computing devices, but also human resources or mechanical processing resources (Maciaszek)

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Subsystem and package

- **Subsystem**

    - encapsulates some part of system behavior
    - its services are the result of the services provided by its classes
    - its services are defined using interfaces

- **Package**

    - grouping of modeling elements
    - like subsystem, its services are the result of the services provided by its classes
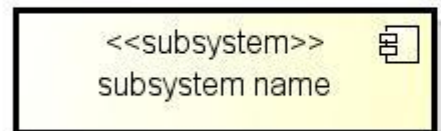   - unlike subsystem, its services are not exposed using interface

Subsystem and package

- "The difference between a subsystem and a package is that, for a package, a client asks *some element inside the package* to fulfill a behavior; for a subsystem, a client asks *the subsystem itself* to fulfill the behavior." from Ferm (2003, p.2)
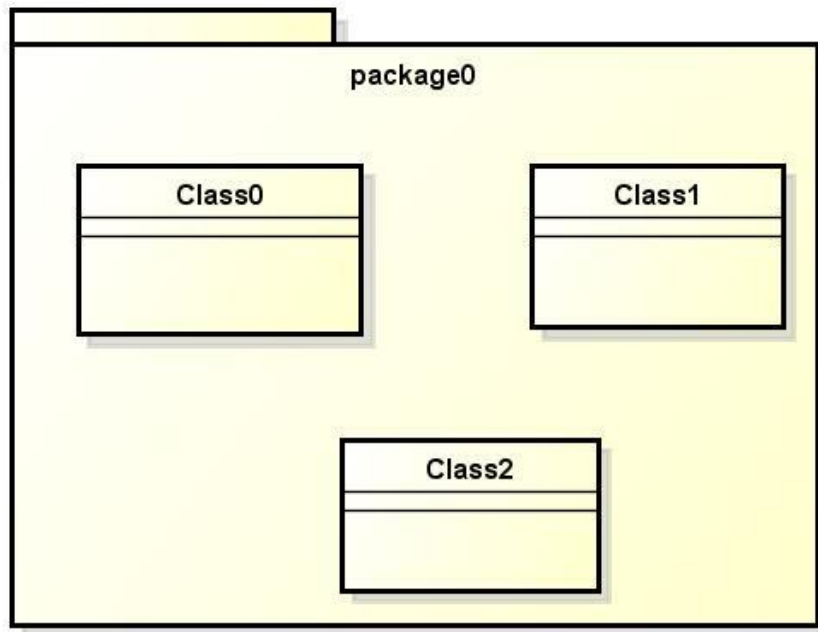
Subsystem and component

Component name

Component is amodular, deployable, and replaceable part of a system that encapsulates implementation and exposes a set of interfaces
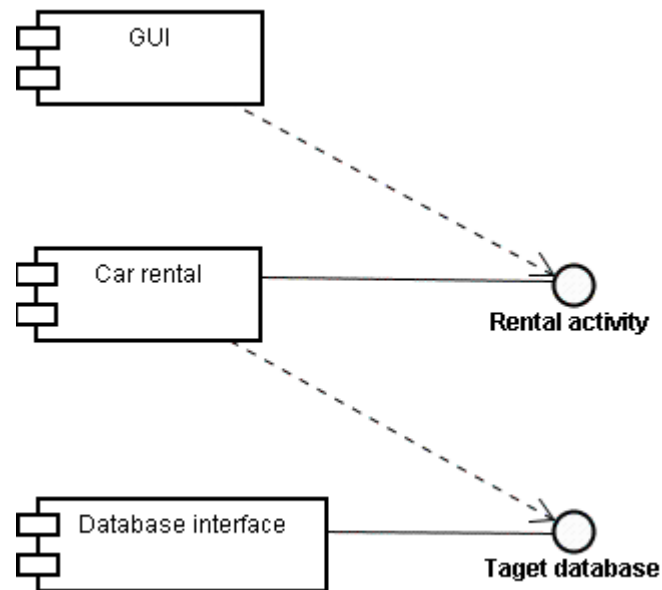
<<subsystem>>
subsystem name

Subsystem encapsulates some part of system behavior its services are the result of the services provided by its classes its services are defined using interfaces
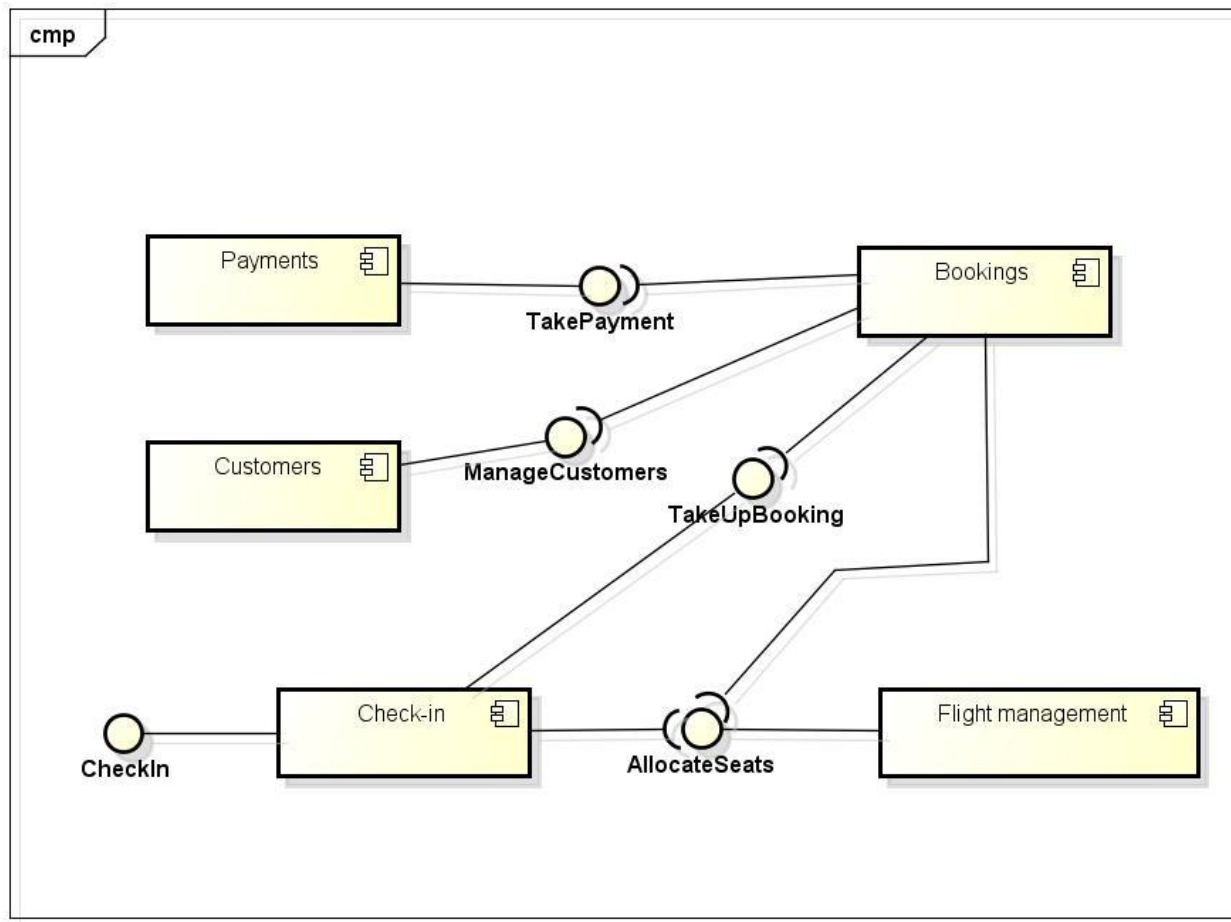
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Package

Package is a grouping of modeling elements
like subsystem, its services are the result of the services
provided by its classes
unlike subsystem, its services are not exposed using
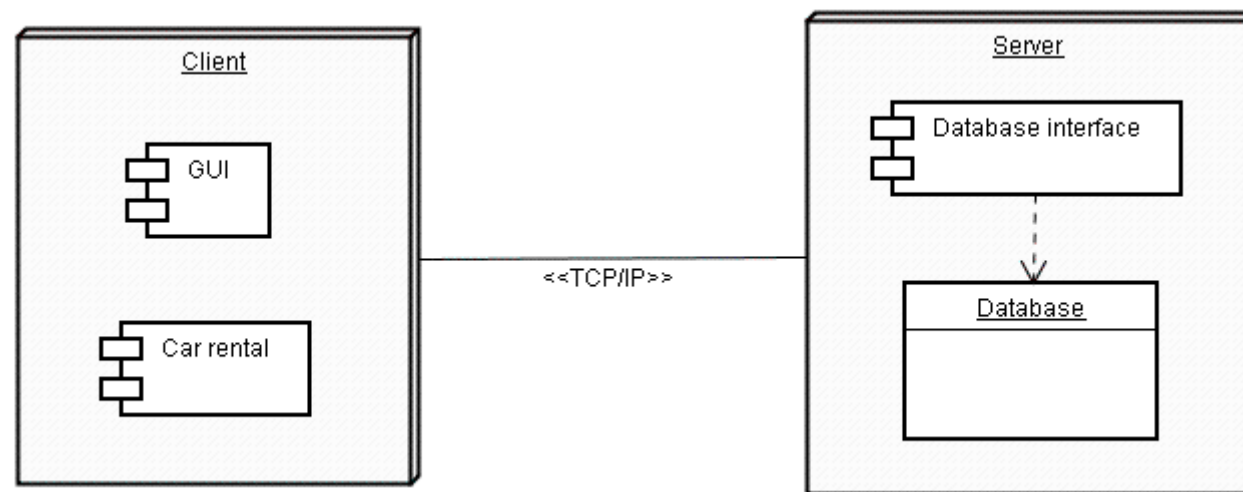interfaces

Component diagram, example 1
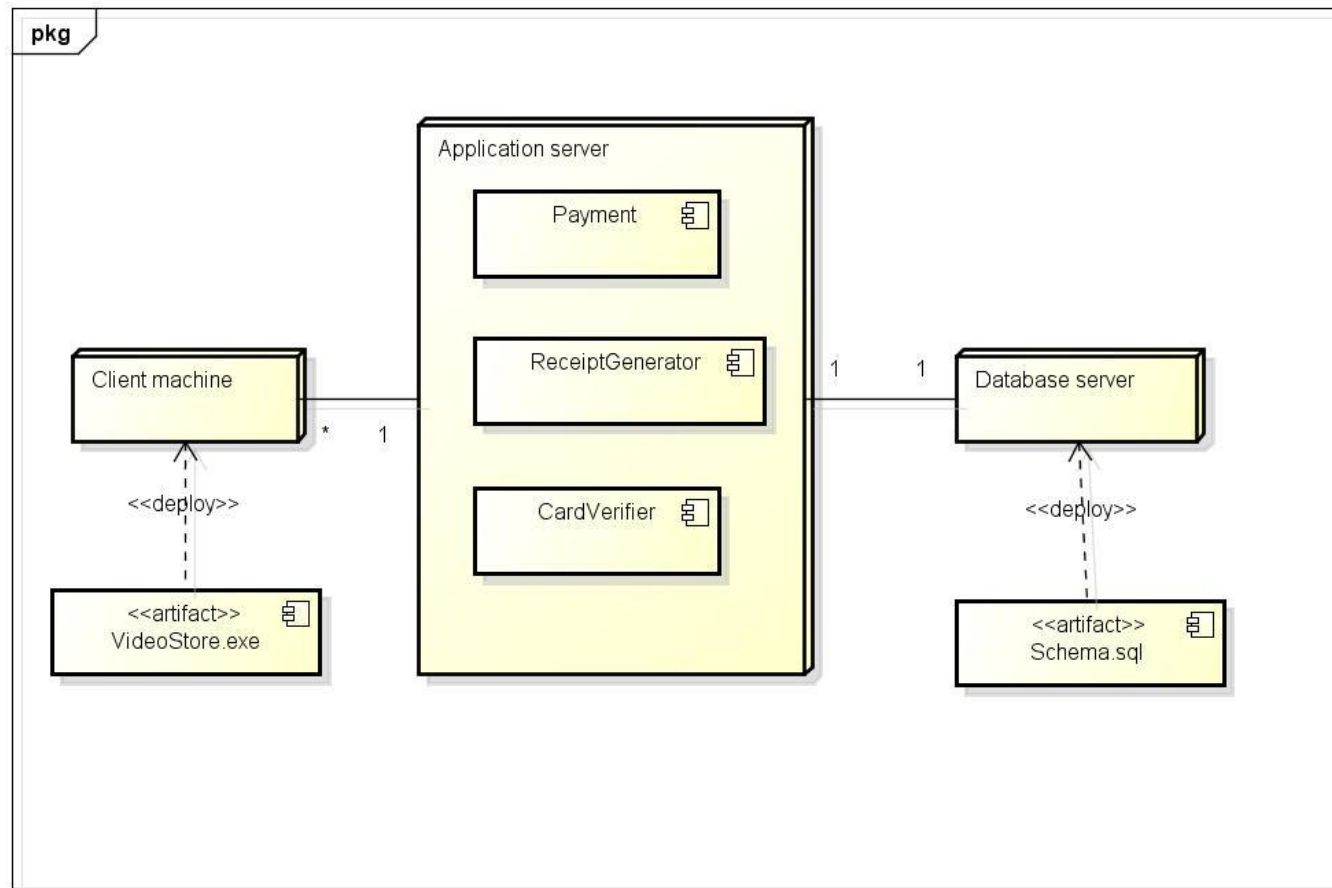
Component diagram, example 2

Deployment diagram, example

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Deployment diagram, example 2

Source: Maciaszek, 2007