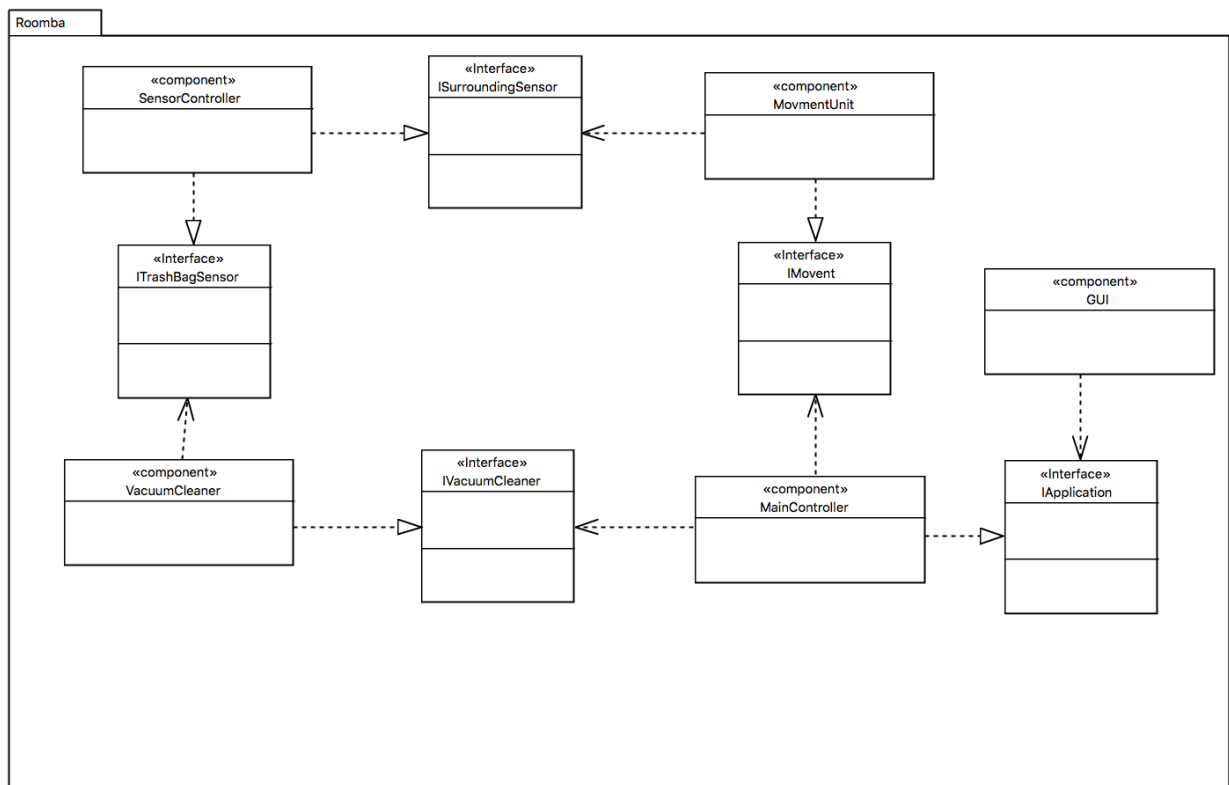




Exercise 7 – Architecture

Tasks:

1. Draw a component diagram and a sequence diagram each to design the architectures of the following systems
 - a. a cleaning robot which can clean obstacle free rooms. However, it should turn on walls or closed doors.



2. Which conflicts might arise when you have to design an architecture for a secure **and** highly available system? Justify your answer.

- a. For high available systems you might need to introduce redundancy or caches, which might have a negative impact on the security. Additionally you have to think about additional methods to protect your data.
3. Look at the architecture depicted in <https://applicationarchitecture.files.wordpress.com/2010/06/f0030-layer-diagram-complex.png>
 - a. Which aspects of the software architecture can be seen?
 - i. Security
 - ii. Service
 - iii. Performance
 - iv. ...
 - b. Name a bunch of stakeholders and their interests in this architecture
 - i. Software Architect – Layer overview
 - ii. Manager – System overview
 - iii. Database Manager – See entry point
 - iv. Aspect Developer – See aspects

Exam example

Figure 1 shows a view on Oracle's WebLogic Network Gatekeeper's architecture, a system to manage tele- phone calls.

Figure 2 shows a view on an example distributed system.

For each of the two views work on the following sub tasks. Provide a very brief justification for each item you provide!

- a) (2Pt, per view 1Pt) Name the view type(s) covered by the given figures.
 - a. Developer View
 - b. Physical View
- b) (6Pt, per view 3Pt) Name stakeholders which might be interested in the respective view (at least 3 each).
 - a. Developer, Manager, Architect
 - b. Database Manager, Developer, Webmaster

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- c) (6Pt, per view 3Pt) Name concerns relevant for those stakeholders (at least 3 each).
- a. System composite, Components, Overview
 - b. View server lance cape, see protocols and connections