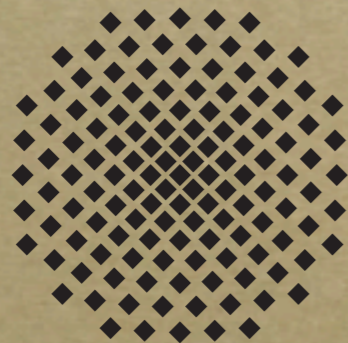


Using UML for modeling TinyOS components

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TinyOS components

- TinyOS is an operating system
- TinyOS is a library of source code also
- written in NesC, an extension of C
- component based for software flexibility (easy replacing of components) while maintaining static binding (small binary)
- wiring in “configuration” files, implementation in “module” files

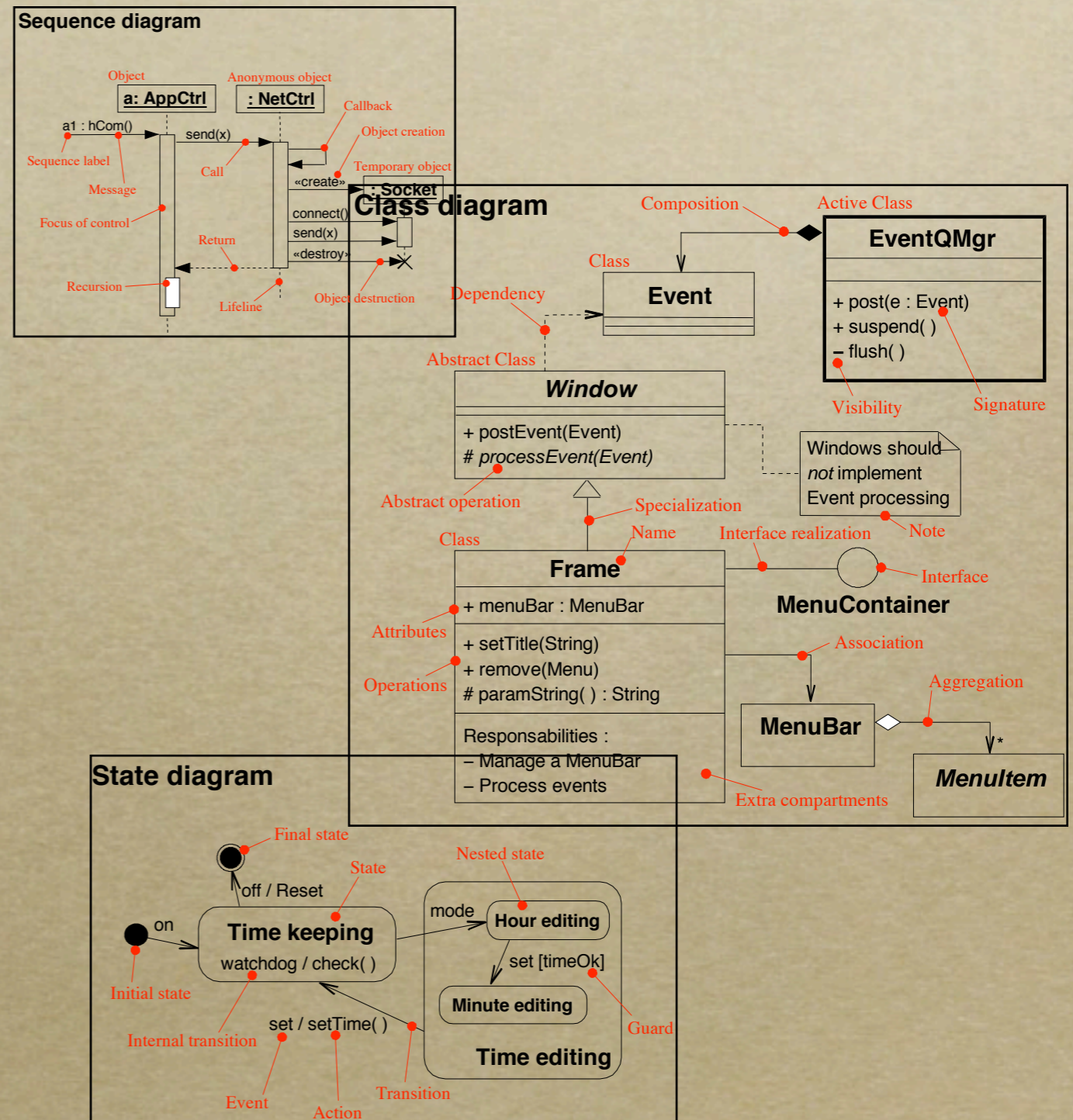
UML



- Unified Modeling Language
- exists since 1997, version 2.1 since 2006
- specified by Object Management Group
- unifies (as the name implies) and simplifies the design of software by standardising symbols/diagrams and underlying semantics

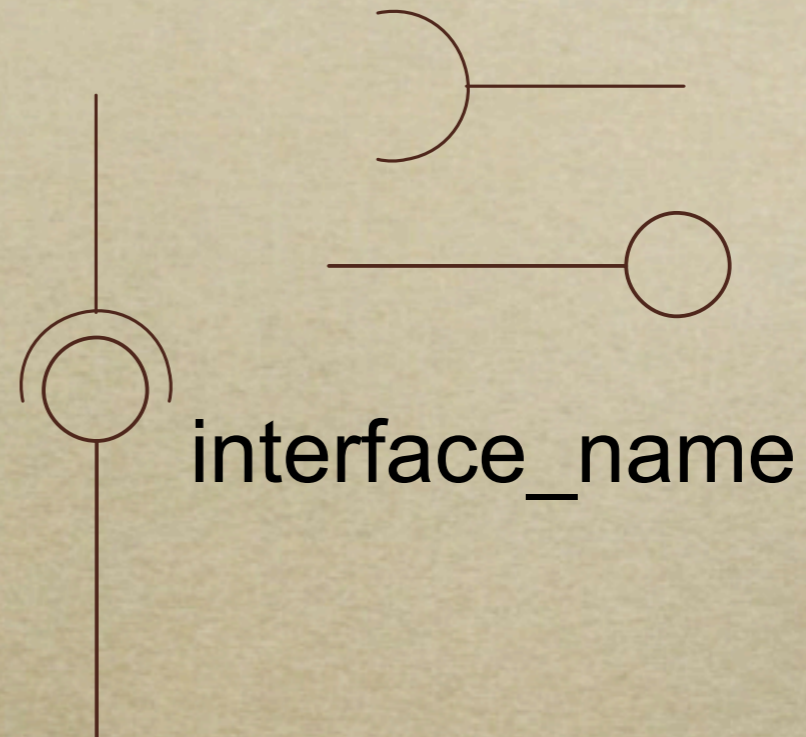
UML

- diagram types
 - activity diagrams
 - sequence diagrams
 - class diagrams
 - component diagrams
 - state diagrams
 - timing diagrams
 - ... (serveral others)



UML: component diagrams

- provided/implemented interface
- required/used interface
- component symbol
- ports

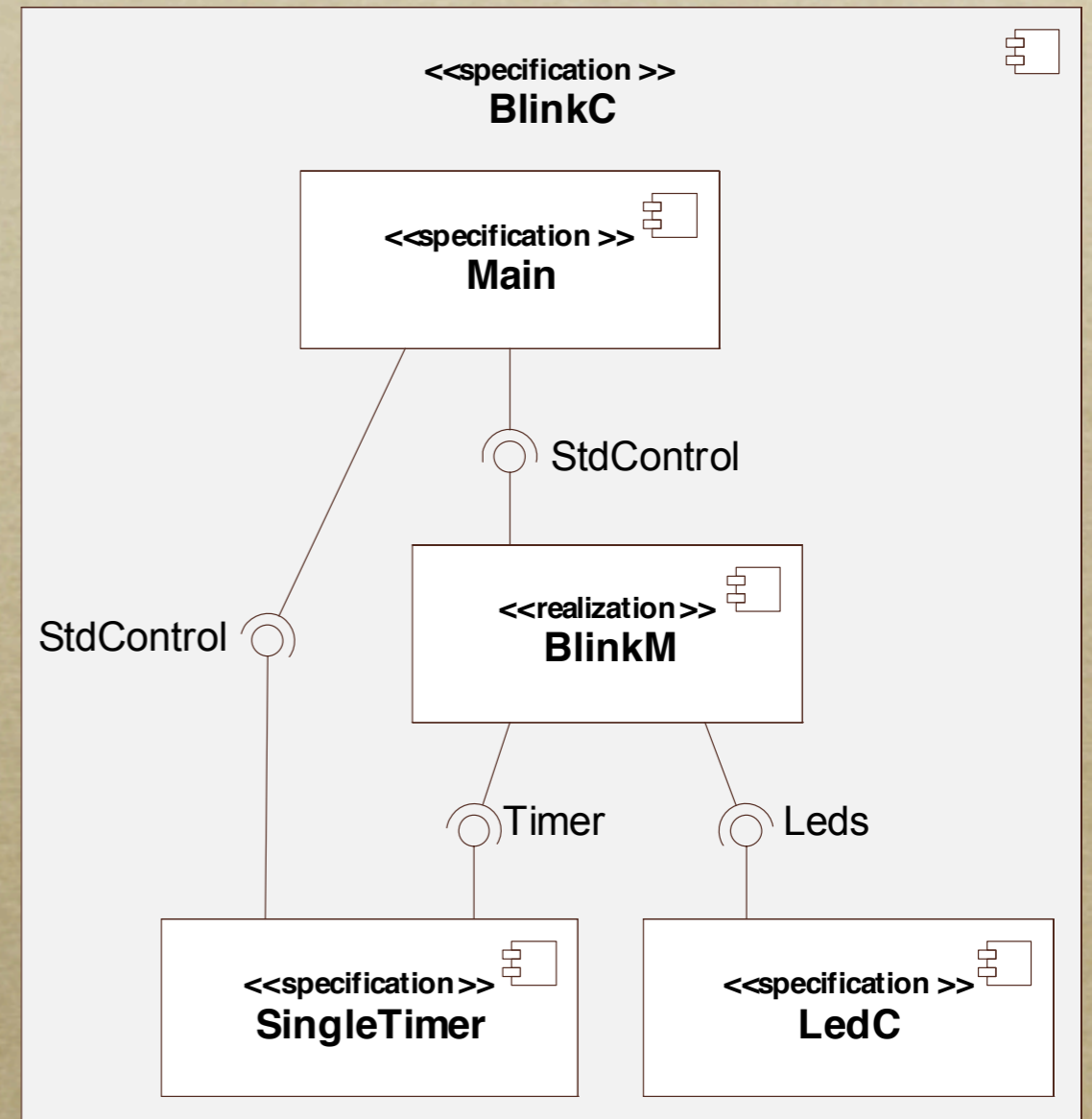
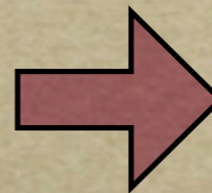
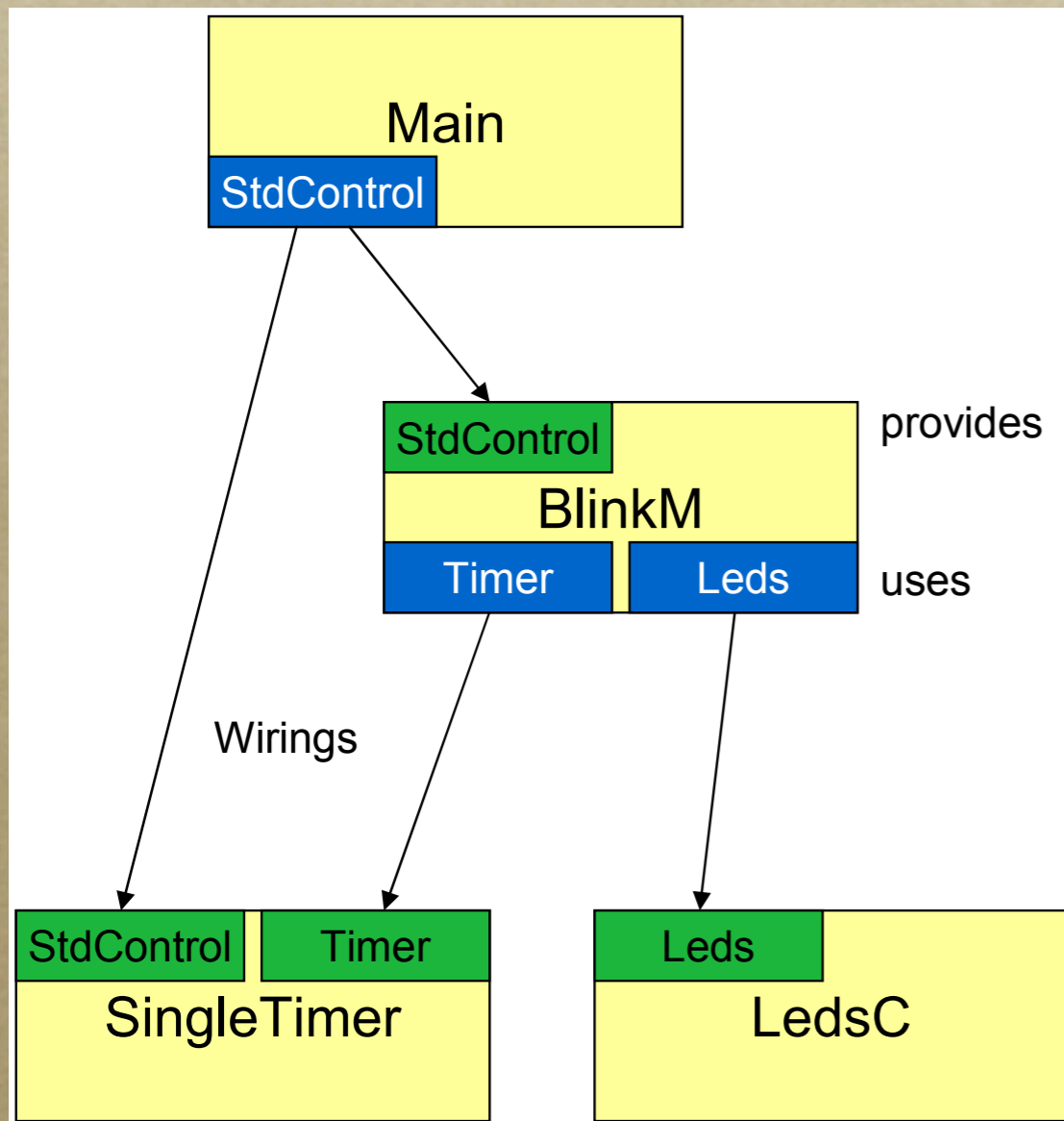


<<component>> 
Name

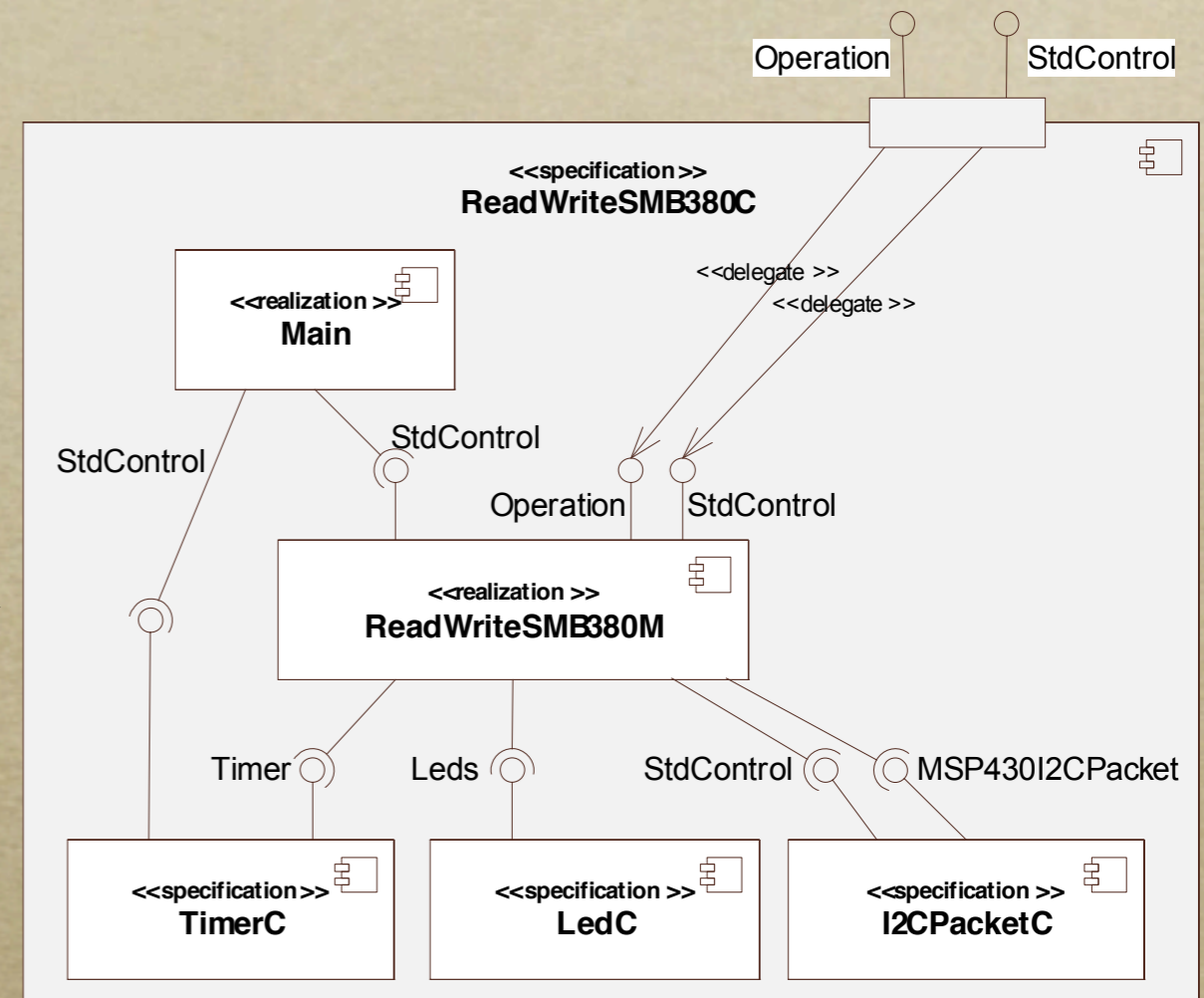
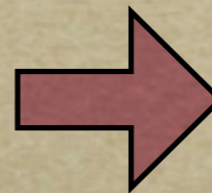
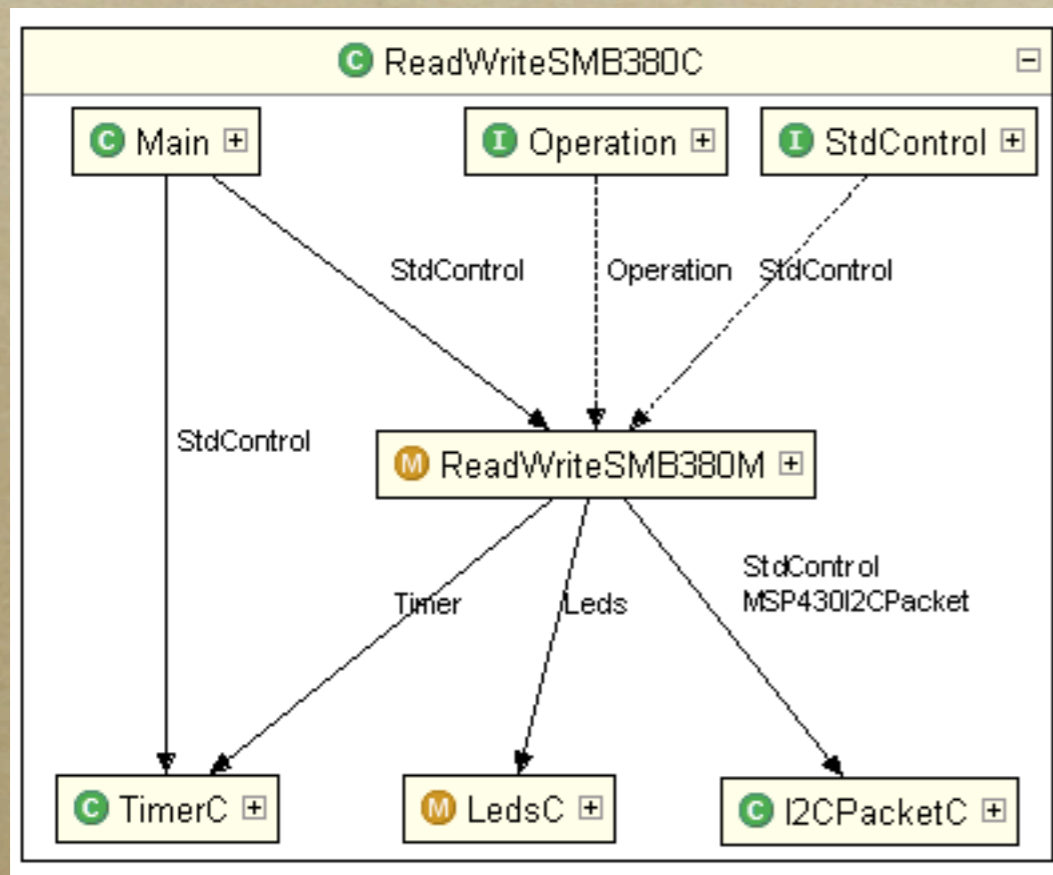
TinyOS design

- TinyOS components are not easy to understand
- design easier when depicted by a diagram
- however, notation and semantics differ greatly and are often author-specific
- it is proposed to use UML

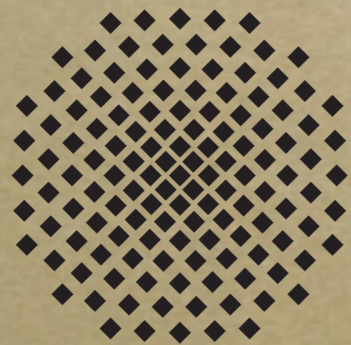
Example 1



Example 2



Thank you!



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