

Lab/home assignment: Requirements structurization, formalization and validation

The assignment is based on module I projects. Elaborate the projects by following (recommended) steps below:

1. Extracting architectural entities (actors, components, parties, objects, etc.) --- represent with architecture diagram
2. Extracting interactions between the entities (events, services, data communication, synchronization etc.) --- represent with communication diagram.
3. Specify contract assertions (require, ensure, invariant) between architectural entities – use JML
4. Define design views (quality attributes), e.g. security, performance, safety, timing, etc. – use JML
5. Split contracts by views and provide multi-view contracts – use JML
6. Validate the consistency of contracts --- use Key tool or any other reasoner.
7. Validate non-interference between view contracts --- Key tool or any other
8. Generate from contracts either conformance or mutation tests (manually or tool supported)