Lab/home assignment: Requirements structurization, formalization and validation

The assignment is based on module I projects. Elaborate the projects by working out following steps:

- Extract architectural entities (actors, components, parties, objects, etc.)
  - represent with architecture diagram.
- Extract interactions between the entities (events, sevices, data communation, synchronization etc.)
  - represent with communication diagram.
- Specify contract assertions (require, ensure, invariant) between architecutral entities
  – use JML.
- Define design views (quality attributes), e.g. security, performance, safety, timing, etc.
  – use JML.
- Split contracts by views and provide multi-view contracts
  – use JML.
- Validate the consistency of contracts
  - use Key tool or any other reasoner, e.g. Z3.
- Validate non-interference between view contracts
  - Key tool or any other, e.g. Z3.
- Generate from contracts either conformance or mutation tests (manually or tool supported)