

Next Gen RE Teaching for Next Gen Devs

21 maj 2024

Hypotheses on Next Gen Devs

- ▶ Cross-functional DevOps Teams & Decentralization =>
More of the actual RE work is done by the coders
- ▶ Agile & Open Source =>
Requirements in flat-structured NL markdown issues
- ▶ LLM Coding Support & Low Code / No Code =>
Prompts == NL Requirements
Increased importance of RE by Coders

Implications for RE Teaching

Focus more on...

- ▶ Practical **RE for coders** – learning by doing: connecting the "hard" engineering work with the "soft" parts of RE: elicitation, communication, decision-making, ...
- ▶ Providing a consistent and **relevant vocabulary** for NL requirements modelling with structure and regularity.
- ▶ RE tooling that integrate with **git** and **markdown** issues

Future ideas on reqT for teaching RE:

- ▶ Focus on vocabulary and structured NL
- ▶ Markdown \leftrightarrow embedded DSL
- ▶ New metamodel utilizing new features of Scala 3
- ▶ Decision-making (prioritization, release planning) based on constraint solving

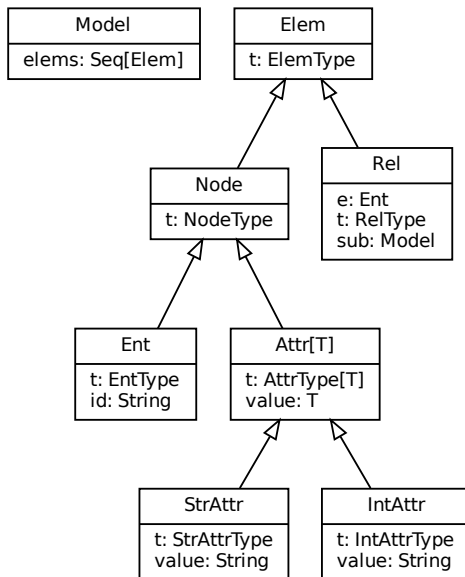
Current stable and milestone versions of reqT

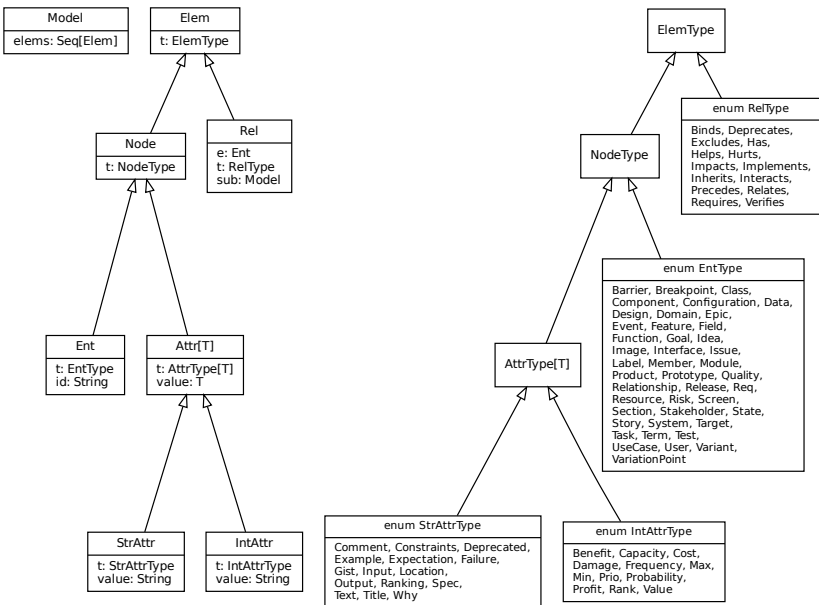
- ▶ Stable version used for MSc course ETSN15 labs 2024:
 - ▶ `https://github.com/reqT/reqT/releases/tag/v3.1.7`
- ▶ Latest milestone version of reqT v4:
 - ▶ `https://github.com/reqT/reqT/releases`

New reqT metamodel:

Model
elems: Seq[Elem]

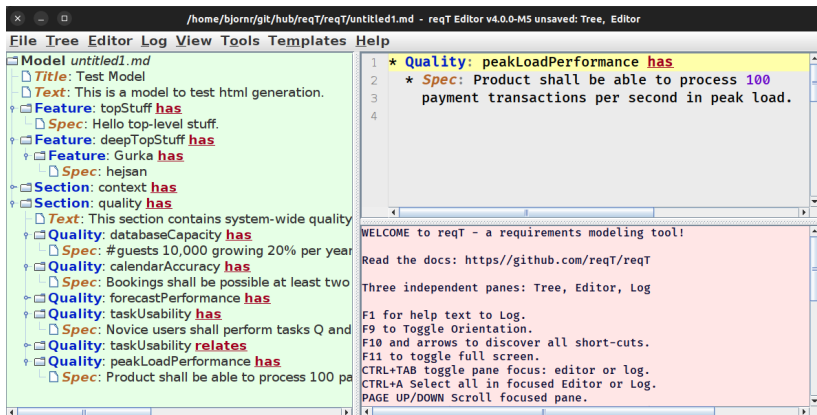
New reqT metamodel:





reqT Tree Editor GUI

- ▶ Green area: Tree Navigator
- ▶ Gray area: Text Editor (Markdown indentation lists)
- ▶ Pink area: Log with output, analysis, metrics etc



How to install:

- ▶ Download reqT jar-file from here:
<https://github.com/reqT/reqT/releases>
run with `java -jar reqT.jar`
- ▶ To run the jar you only need java:
 - ▶ java on mac/ubuntu: <https://sdkman.io/>
 - ▶ java on windows: <https://adoptium.net/>
- ▶ To generate graphs of reqT models you need graphviz:
 - ▶ <https://graphviz.org/download/>
- ▶ On windows this is the recommended new terminal:
 - ▶ <https://learn.microsoft.com/en-us/windows/terminal/install>
- ▶ To run the latest reqT v4 in a shell you need scala-cli:
 - ▶ <https://scala-cli.virtuslab.org/install>
 - ▶ run with `scala-cli repl --jar reqT.jar -S 3.3`

Further reading on reqT

- ▶ Regnell, Björn. **"Towards a semi-formal, open and scalable requirements modeling tool"**. Requirements Engineering: Foundation for Software Quality: 19th International Working Conference, REFSQ 2013, Essen, Germany, April 8-11, 2013. Proceedings 19. Springer Berlin Heidelberg, 2013.
- ▶ Regnell, Björn. **"What is essential? – A pilot survey on views about the requirements metamodel of reqT"**. Requirements Engineering: Foundation for Software Quality: 22nd International Working Conference, REFSQ 2016, Gothenburg, Sweden, March 14-17, 2016, Proceedings 22. Springer International Publishing, 2016.
- ▶ Regnell, Björn, and Krzysztof Kuchcinski. **"A scala embedded DSL for combinatorial optimization in software requirements engineering"**. First Workshop on Domain Specific Languages in Combinatorial Optimization. 2013.
- ▶ Regnell, Björn, and Krzysztof Kuchcinski. **"Exploring software product management decision problems with constraint solving-opportunities for prioritization and release planning"**. 2011 Fifth International Workshop on Software Product Management (IWSPM). IEEE, 2011.
- ▶ On-going work on the 4.x branch: <https://github.com/reqT/reqT/tree/4.x>
- ▶ Download concept definitions: <https://github.com/reqT/reqT-lang/releases/download/v4.2.0/concepts-GENERATED.csv>