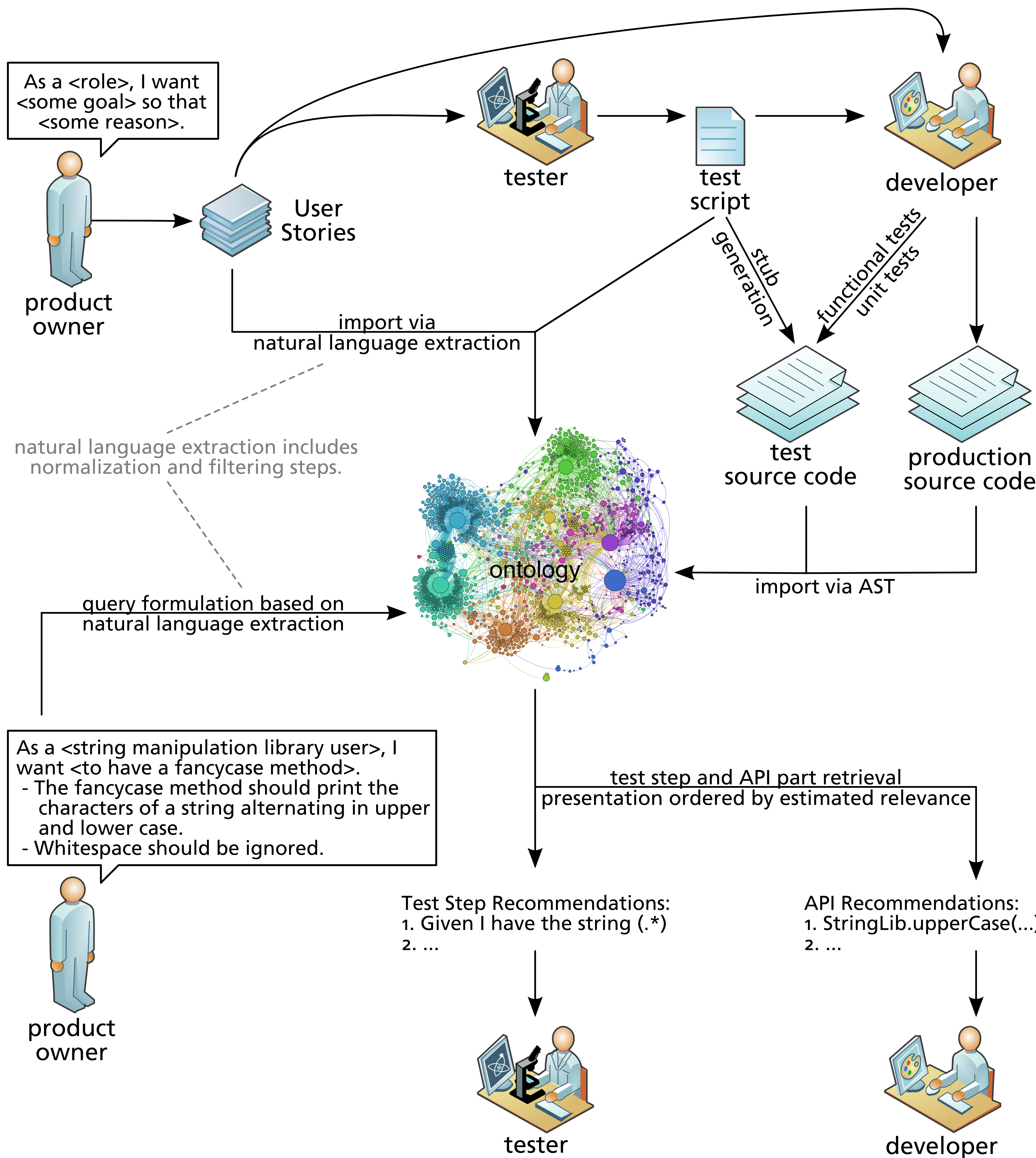


Connecting User Stories and Code for Test Development

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Mathias Landhäußer, Adrian Genaid



Product owners state requirements in form of User Stories. Then testers describe test criteria. Developers write tests and production code. Reusing (parts of) test scripts is desired but searching is tedious. The same applies for the actual implementation.

All artifacts are imported into a common knowledge base. This way, we can exploit inter-artifact links: Connections between User Stories, test code, test scripts, and production code can be recorded.

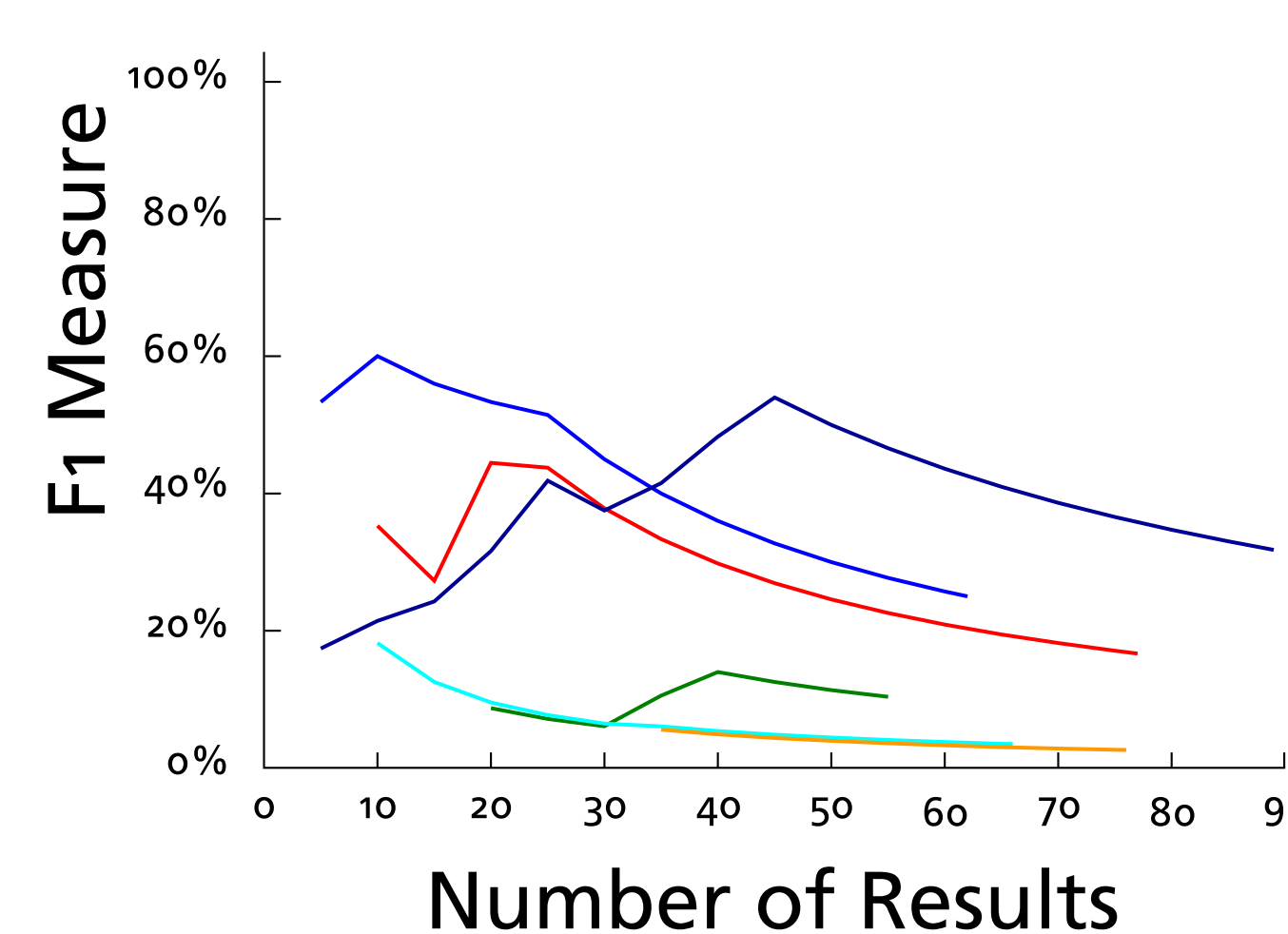
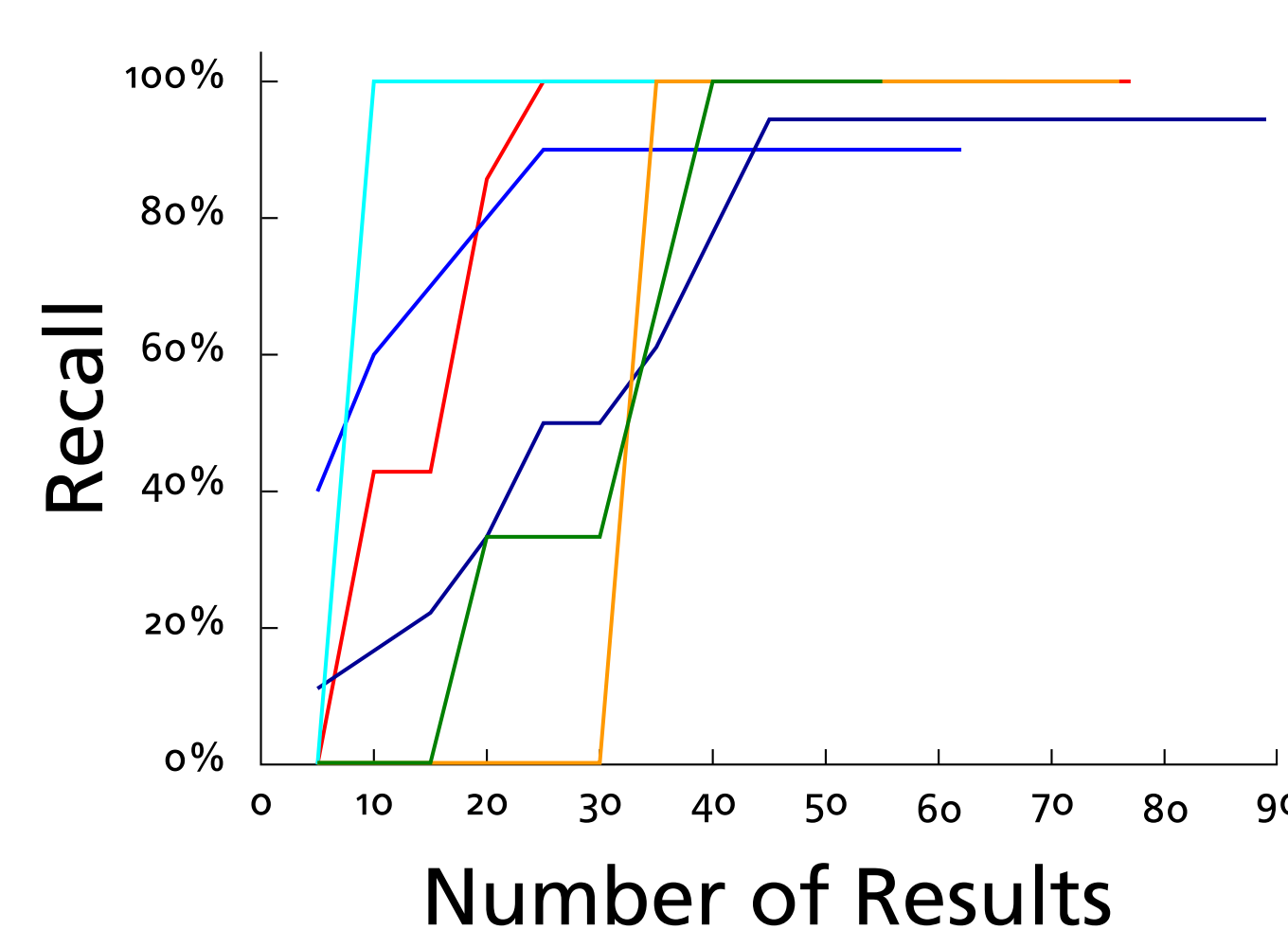
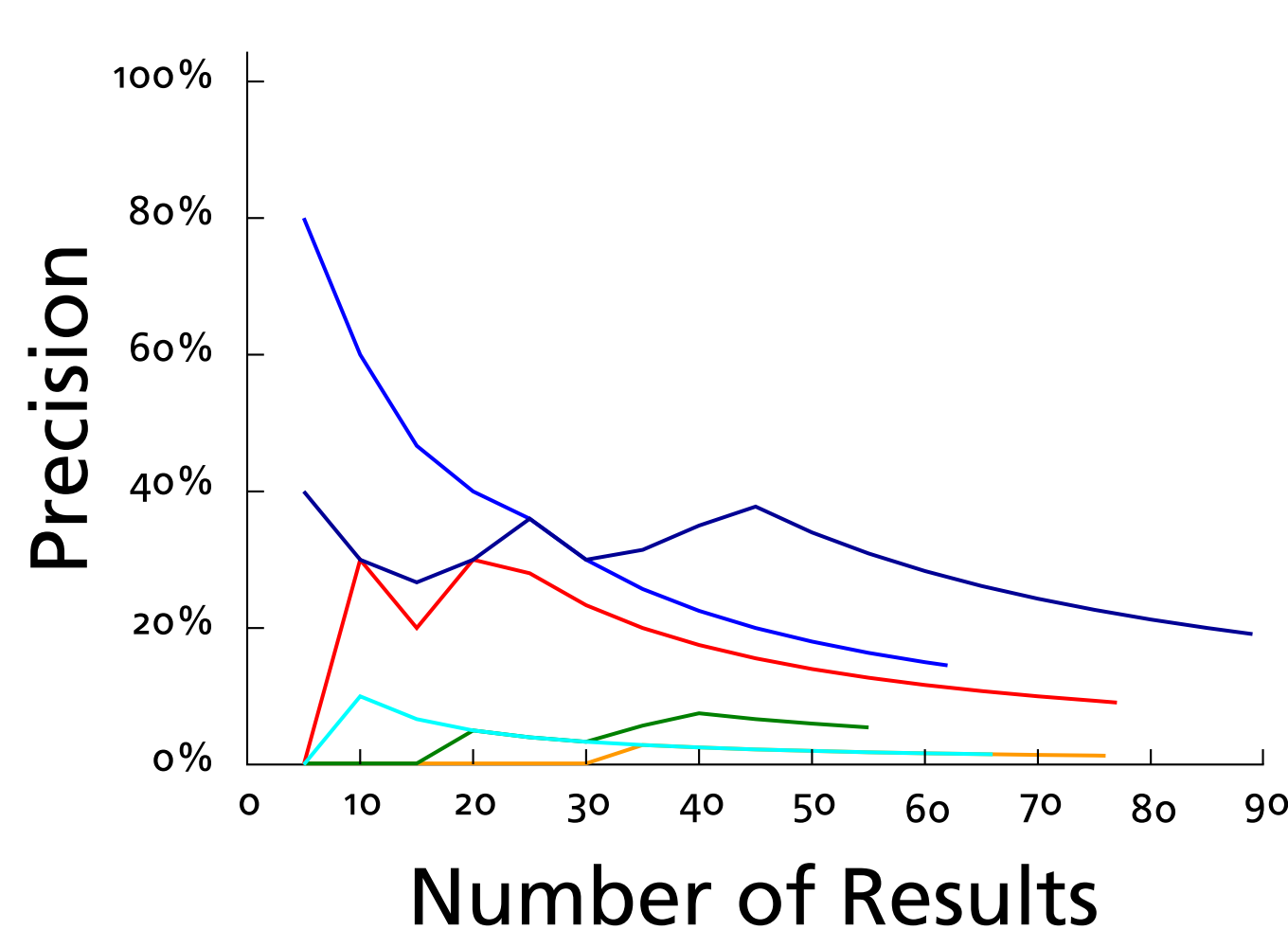
When a new User Story is formulated, we query the ontology for relevant test steps and API parts. Therefore we formulate queries based on the new User Story.

Retrieved steps are ordered via a TF-IDF-based approach and presented as a list to the tester. API parts are treated the same way.

Testers and developers decide which parts to (re-)use, extend, and so on. Newly created artifacts are continuously included in the ontology.

Evaluation with Real World Data

Production Code: ca. 200 KLoC | Tests: ca. 10 KLoC | Number of Completed User Stories: 42
User Stories used for Ontology Building: 35 | User Stories used for Evaluation: 7 (1 User Story did not produce any results)



We developed a prototype for the analysis of C#.NET code and natural language User Stories. Retrieval of relevant steps is working but relevance scoring needs further improvement. The ontology can be used as a glossary for the project. Also, the glossary can be used to improve retrieval and relevance scoring.