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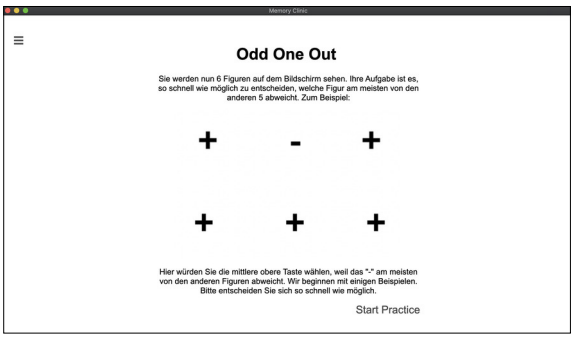
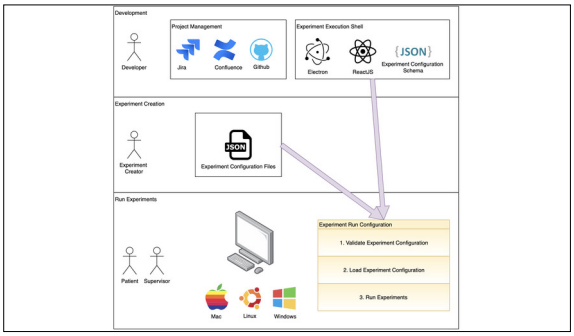
Subject Area	Software
Project Partner	Memory Clinic, Spital Basel, Basel

Testinstrument zur Frühdiagnostik der Alzheimerkrankheit

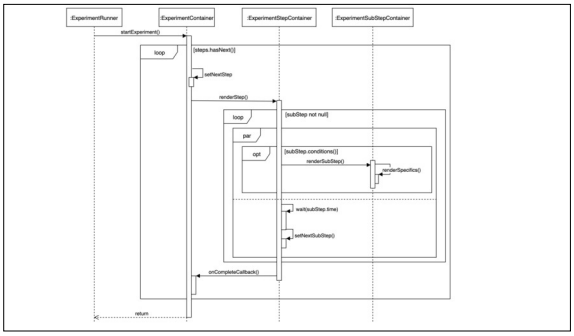
Creating a generic cross platform experiment execution shell



Running sample experiment
Own presentment



Context diagram with a brief overview of used tools, technologies and environments.
Own presentment



Sequence diagram illustrating the logic used for iterating through a single experiment.
Own presentment

Introduction: The team of the Memory Clinic located in the Felix Platter hospital for elderly people in Basel has developed a test instrument for early diagnosis of Alzheimer disease. This diagnosis consists of three computer assisted tests where the test persons answers memory related questions. Those were created on the basis of a proprietary software platform.

To make the test instrument available for other clinics and experts the goal was to recreate the tests without the need to license an expensive software platform. A secondary goal of the project was to make it more convenient for the test supervisors to use the testing tool.

Approach / Technology: To create a software that runs the specified tests on all major desktop operating systems (Linux, Mac, Windows) with an intuitive user interface we decided to create an electron app on basis of the following react boilerplate: https://electron-react-boilerplate.js.org/

Problem: To comply with the legal requirements of FPS we split our application into a generic test execution shell that is able to read test specifications from JSON files and the specific configuration files with their Alzheimer diagnosis tests. This allowed us to extract the intellectual property into the configuration files, while the test execution shell could be published under the MIT open source license.
The added advantage of this approach is, that it is possible to flexibly expand and adapt the test program or write similar tests on basis of the experiment execution shell by simply changing or creating JSON experiment configuration files.