

Interactive web interface for the configuration of imaging and patient data anonymization

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Summary

1. Discovery of the DICOM file format used in medical imaging.
2. Analysis of existing DICOM file anonymization tools.
3. Implementation of a prototype to create anonymization profiles.

Introduction

Medical imaging is essential for medical research. In order to realize their studies, researchers access patient images and data. To protect patients from an invasion of their privacy, patient's resources used in medical research must be anonymized. The needs for anonymization can be diverse in medical research.

In order to facilitate the anonymization process of medical images, a DICOM Gateway with normalization and de-identification capabilities named Karnak is being implemented.

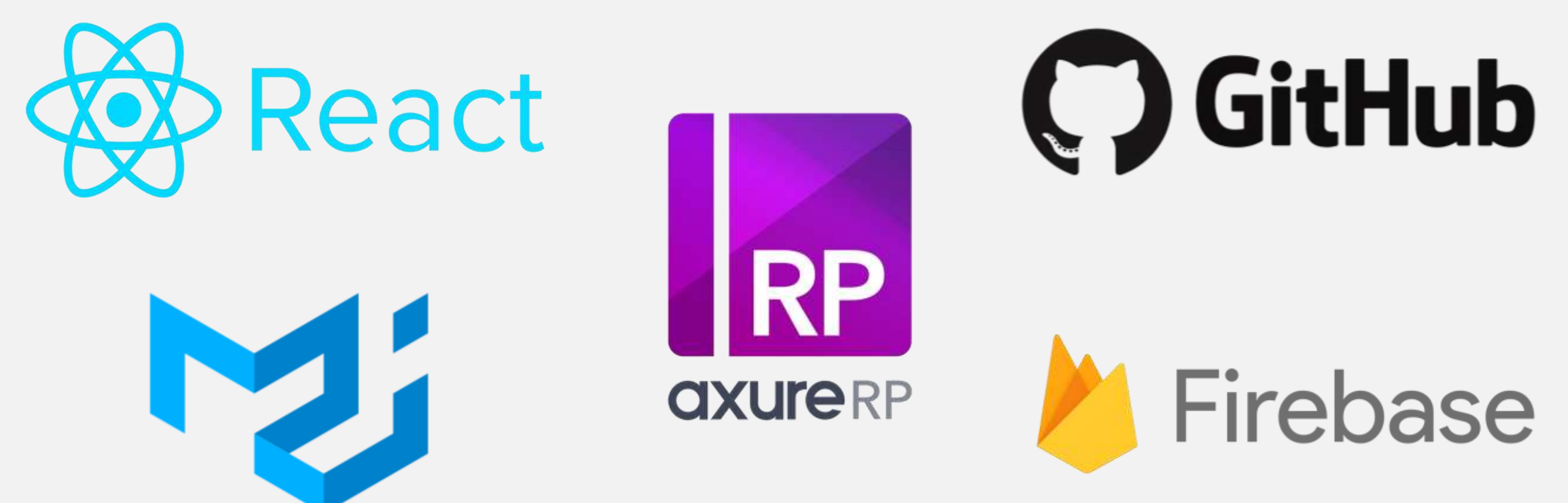
To meet the needs of each project, Karnak must allow users to configure what should be anonymized and what should not be anonymized.

The objective of this work is to propose a web interface for the configuration of anonymization of imaging and patient data anonymization.

Methods

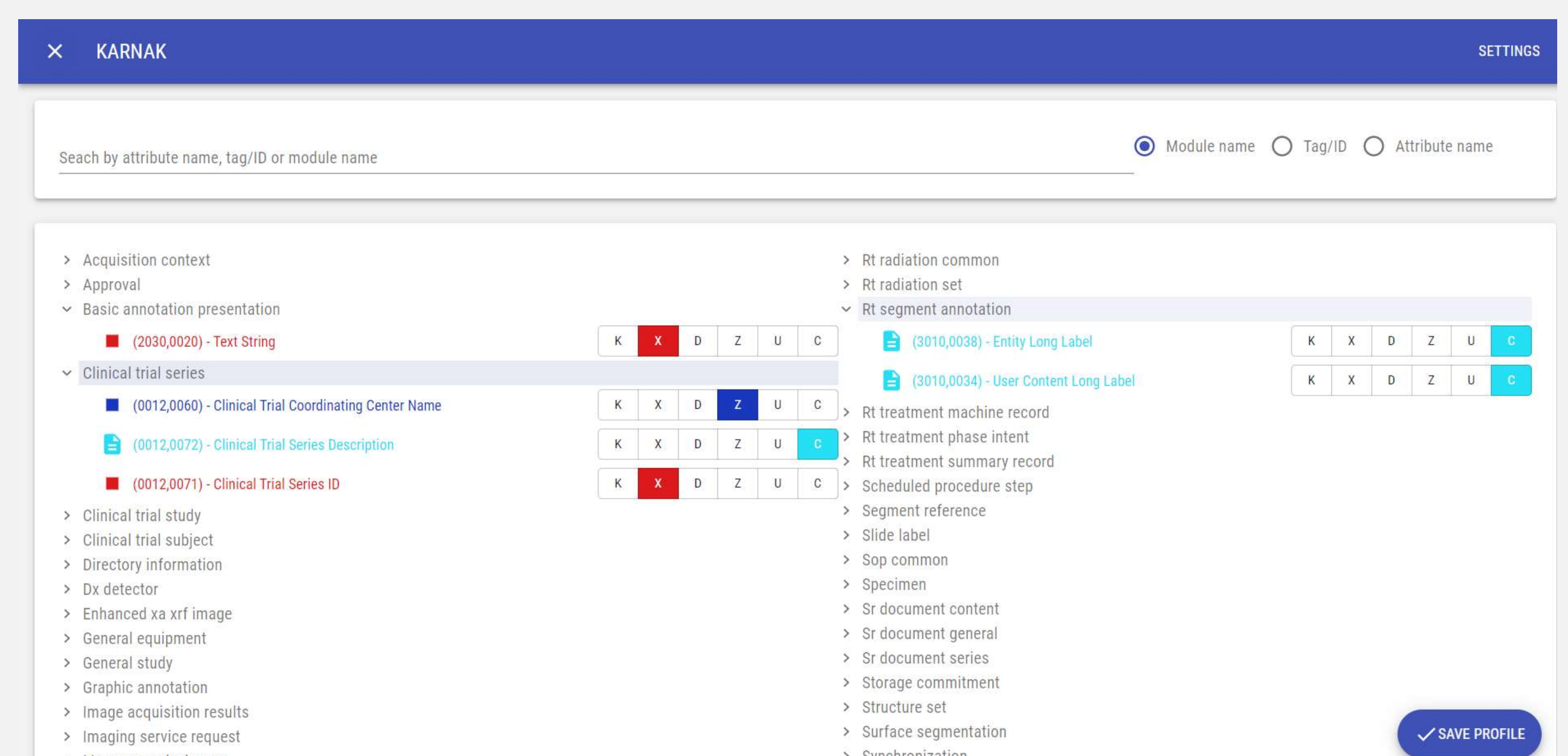
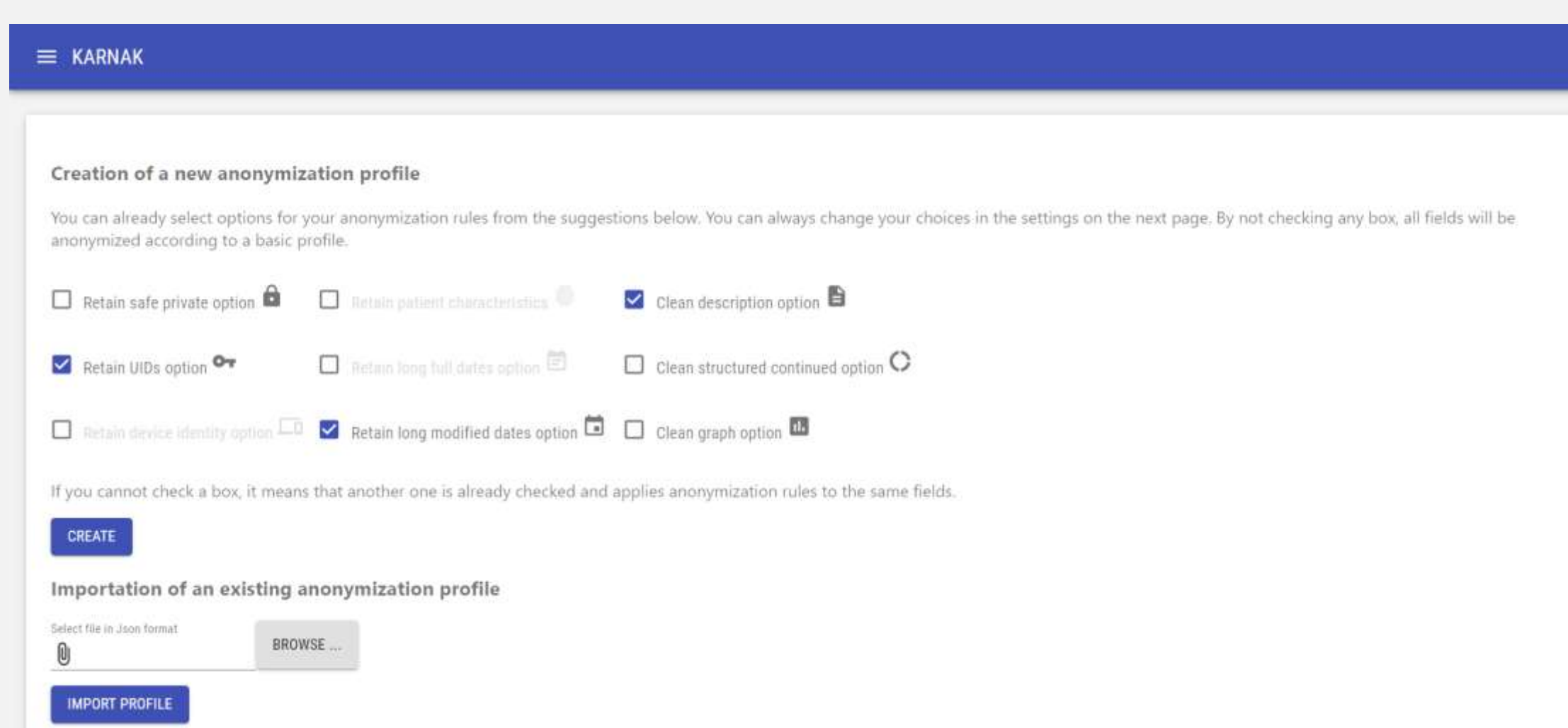
1. Analysis of the process of data anonymization for medical research.
2. Analysis of DICOM file format.
3. State of the art of existing DICOM file anonymization tools.
4. Creation of mockups.
5. Selection of a frontend technology for a web interface.
6. Implementing a prototype.

Technologies



Prototype

- Apply anonymization rules to DICOM attributes.
- Search for attributes by module, tags or name.
- Apply an advanced option to attributes.
- Import an existing profile of anonymization and edit it.
- Export the profile of anonymization in JSON format.



Conclusions

- Functional prototype demonstrating the feasibility.
- Future implementation to be considered to link the web interface to Karnak.
- Considering performance optimizations in the case where the dataset is larger.