VODAN BR - A federated architecture for clinical data

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The VODAN Brazil (VODAN BR) project aims at establishing, at the national level, the VODAN federated data infrastructure to support the capture and use of data, not only during this Covid-19 pandemic but also on future disease outbreaks. This poster describes the first steps for collecting and treating anonymized patients data from Covid-19 cases, following the WHO standard form, initially from two public hospitals. VODAN BR is establishing an IT architecture to manage these data, addressing practical challenges from the hospital partners, such as collecting data from the current hospital information systems and integrating these data with semantic-oriented CRF systems that are based on the WHO semantic model developed by VODAN. This flexible architecture addresses these challenges through: (1) an extraction and collection strategy for the heterogeneous systems; (2) a staging relational database adherent to the WHO semantic model; (3) a workflow-based support for the FAIRification process through the ETL4LOD tool; (4) data repositories enriched with graph database technologies and FAIR Data Points.

Participants

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VODAN BR
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The VODAN BR Project

Creation and Maintanance of the Support Database
Create and maintain questionnaire data, ontologies and internationalization

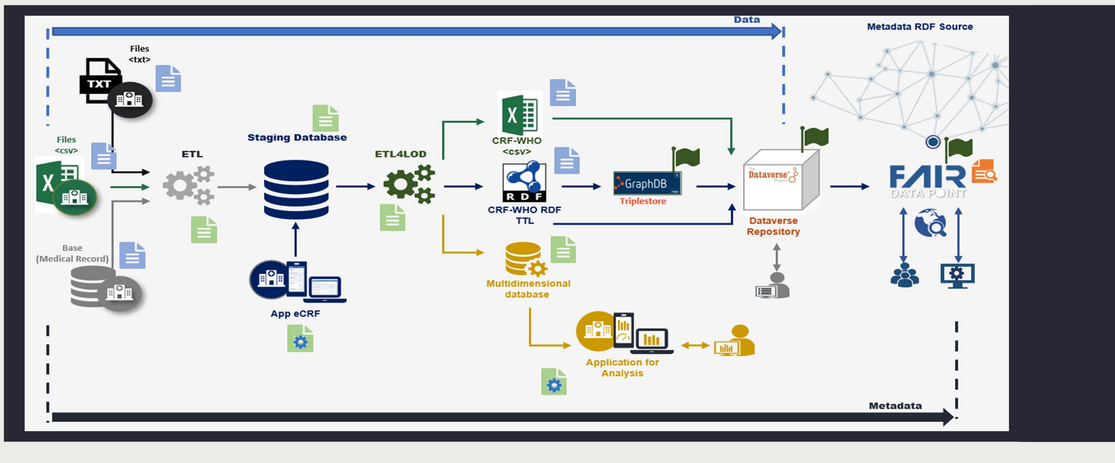
Publication in the VODAN BR Repository
Create and maintain dataset in Dataverse

Data Capture
Collect COVID-19 patient data

Data Transformation (Ontology)
Transform data to LOD/CSV

Publication in the FAIR Data Point
Create and Maintain the FDP VODAN BR

VODAN BR Plataform



Development Challenges

Create an extraction and collection strategy for the hererogeneous systems available at the hospital units.

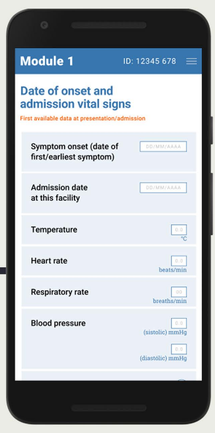
Establish a staging relational database, following the World Health Organization form structure for data and metadata, enriched with a reference ontology and other associated standard vocabularies.

Set up local graph databases at each participating hospital.

Development of a metadata collection and registration cycle.

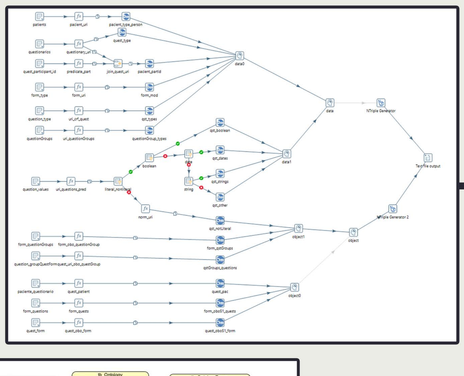
Create a workflow-based support for the FAIRification process, using the ETL4LOD tool.

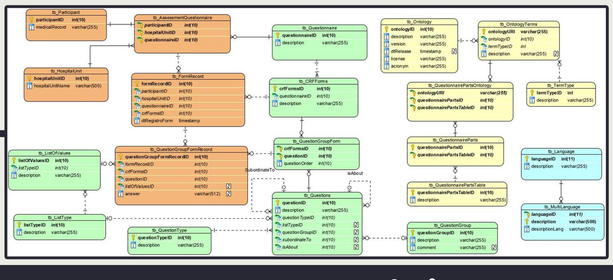
Generate a repository and FAIR Data Points.



Mobile Collection Aplication

FAIRification Process Using ETL4LOD Tool





Staging Relational Database

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