

Utilizing Previous Result Sets as Criteria for New Queries within FURTHeR

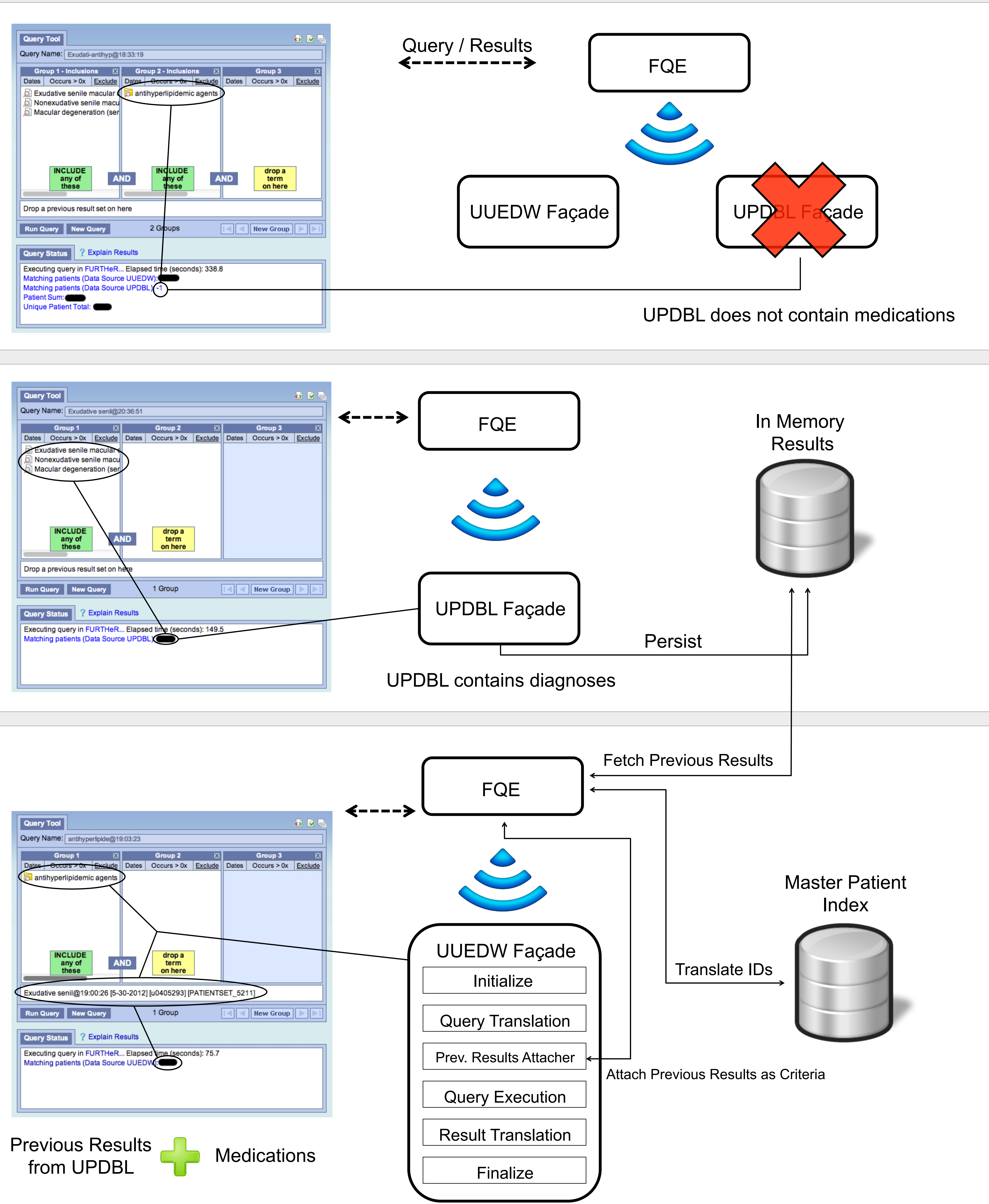
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Introduction

• The Biomedical Informatics Core at the University of Utah's Center for Clinical and Translational Science (CCTS) is continuing the development of a platform for real-time federation of health information from heterogeneous data sources. **The Federated Utah Research and Translational Health electronic Repository (FURTHeR)**, utilizes standard terminologies, a logical federated query language, and translation components to translate queries and results from each heterogeneous data source.

• Given the heterogeneous nature of data sources, one data source may contain more or less information than another data source. Researchers with inclusion/exclusion criteria that do not exist in a particular data source have previously not been able to search this data source. We've enhanced FURTHeR to support these types of queries.



Methods

- We modified our internal query management structure to support a previous result set identifier element in order to capture the result set that should be used as criteria.
- Additionally, we modified the i2b2 interface to support dragging and dropping of a previous result set to the criteria selection window.
- As a side effect of federated result aggregation, federated patient identifiers from previous results are available temporarily within an in-memory database.
- Using the result set identifier, we look up the previous patient results in this in-memory database.
- Utilizing a Master Patient Index, provided by our data source partners, we translate from the federated patient identifiers to the target data source identifiers.
- Patient identifiers are then attached to the existing query on-the-fly and executed against the data source.

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