SPARQL Query Generation and Semantic Similarity for Medical RDF Databases

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Querying RDF databases is now made accessible to everyone through a natural text to SPARQL query converter Java program. For this specific project, query generation was done in the context of medical records of patients. To query for medical records, users, most likely doctors in this case, can enter in patient symptoms, clinical findings, or demographic information in natural text, which is the same format they would use when typing up a patient summary for their records. The program converts the information into a SPARQL query using a Natural Language Processer and referencing the UMLS Metathesaurus of the National Institute of Health (NIH) via the MetaMap API. The query is then run at a user determined endpoint, and the results are returned. Furthermore, the program also includes a Semantic Comparison component where two selected entities can receive a similarity score.

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