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201921 Using SNOMED browser to explore, query and analyze, EMR databases.

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Summary

The main objective of this work is to refactor the core of SNOMED CT Browser to add several functionalities to it aimed at exploring and exploiting healthcare databases

Audience

Clinical, Policy/administration, Research/academic, Technical

Learning Objectives

1. Enhance exploration of Health Information Databases.
2. Effective tools for exploitation of Health Information Databases.
3. Reuse of code and components

Abstract

The exploration and exploitation of electronic health records are essential and challenging tasks. The efficient performance of registration, organization, retrieval and processing of healthcare information requires many efforts.

Despite these efforts, we are still facing a paradox: even though we have large amounts of healthcare data, their exploration and exploitation is still poor. One of the main reasons for this is the lack of robust, efficient and friendly recovery and visualization tools.

On the other hand, the benefits of using SNOMED CT in health records are indisputable. The semantical richness contained in those databases makes them an invaluable source of information.

SNOMED CT´s browser offers functionalities to explore, retrieve, access, visualize, and comprehend every component of the ontology efficiently. The question is if that efficiency can be extrapolated to explore any database containing SNOMED CT-coded elements. The answer is yes.

SNOMED CT browser has not been updated for the last two years. Its first implementation dates from about five years ago. It is built on low performance and low maintainability technologies like jQuery and Bootstrap. The objectives of this work are:

- To refactor the core of the browser

- To keep the visual aesthetics and add several improvements to it.

- To add several functionalities aimed at exploring and exploiting healthcare databases

- To work on modularization to improve its maintenance and to export standardized visual components to for other projects.

These upgrades and improvements allow an efficient exploration of databases containing SNOMED CT concepts, and this task can be done familiarly through a well known browser.