

Study Information Block

i2b2 Ontology Visualization

Welcome!

In this survey, we will ask you to complete tasks with and provide feedback for a data visualization designed for the Informatics for Integrating Biology and the Bedside (i2b2) ontology. i2b2 is a National Center for Biomedical Computing (NCBC) in Boston, MA. It is funded by the National Institutes of Health (NIH).

The i2b2 ontology organizes collections of patient data. Since the i2b2 ontology is several levels deep and contains a large amount of concepts, gaining insights into its structure is a challenging task if not aided by visualization. The interactive ontology presented to you in this survey visualization enables users to see the overall structure of the ontology, to examine (in)activate paths, and hide branches that are not relevant. The visualization also enables investigators to locate specific codes/diagnosis to determine the scope of the data. To run this user study, actual patient data has been replaced by synthetic data.

To begin the survey, please click the button in the bottom-right corner.

And before you go any further: In order to guarantee the best outcome for this survey, please use Google Chrome or Mozilla Firefox!

Pre-Q

Before we ask you to work with the visualization, we would like to know a bit more about you. Please answer the following questions below to help us understand your background and experience.

What is your native language?

English

other(s), please list:

What is your job title?

Please indicate your familiarity with i2b2:

	Not familiar at all	Slightly familiar	Moderately familiar	Very familiar	Extremely familiar
I am...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate your age:

18-20
21-30
31-40
41-50
51-60
>60

Please indicate your gender:

Male
Female
Other
I prefer not to answer

What data visualizations (such as graphs, charts, tables, maps, trees, networks) do you use for your research/work?

How comfortable are you reading the following visualization types?

	Very uncomfortable	Somewhat uncomfortable	Neither comfortable nor uncomfortable	Somewhat comfortable	Very comfortable
Charts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Graphs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tree visualizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have you ever taken a visualization course, training, or seminar?

Yes

No

Please specify which course, training, or seminar you took?

Documentation

In the following section, we will ask you to answer a set of questions using a visualization. But before we do that, we ask you to open the following link. You will then find documentation that will help you work with the visualization. Please keep it open during the whole experiment!

<https://iu.box.com/s/l7sq47o7yrfrpq36i5egrbv43k9h9nus>

Questions

Please open the following link to see the interactive visualization (it will open in a new tab in your browser):

<http://demo.cns.iu.edu/hsd>

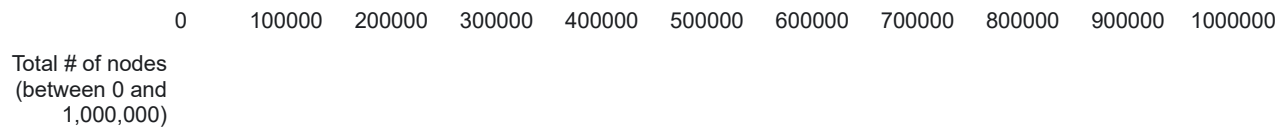
Make sure to read the documentation while using the visualization!

If you accidentally closed the documentation from the last page, here it is again (please keep it open):

<https://iu.box.com/s/l7sq47o7yrfrpq36i5egrbv43k9h9nus>

What is the difference between nodes drawn as a circle and nodes drawn as a rectangle? Please explain.

Please estimate the total number of concepts in the i2b2 hierarchy. Feel free to use the "Counts" option on the left side of the visualization. Also, you can collapse the tree entirely by clicking the "PCORI" root node on the left.



Which level in the ontology depth has the highest amount of concepts? Feel free to use the "Counts" option on the left side of the visualization. Also, you can collapse the tree entirely by clicking the "PCORI" root node on the left.



Find the "Demographic" node in the tree visualization. How many concepts on depth level 2 of the ontology are connected to it?

Identify a node that is the root of the subtree with the most inactive nodes:

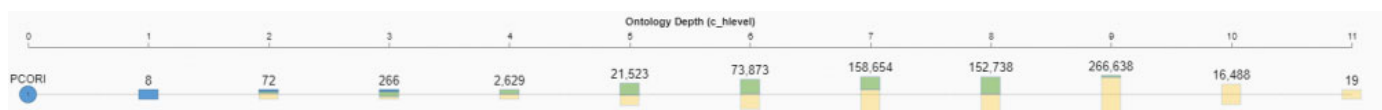
Navigate to "Diagnosis" and open up the underlying subtree. How many hidden concepts are in the subtree?

How many active nodes can be found under "Medication" > RxNorm Code (by VA Drug Class)?

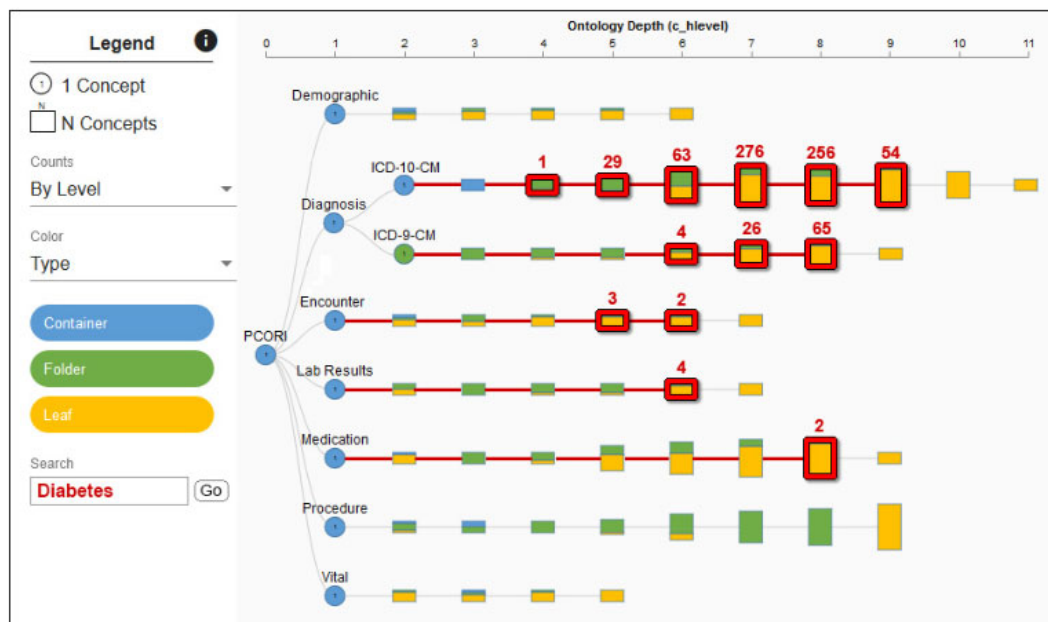
How many levels deep is the "Enrollment" branch?

Below, you see a screenshot of the complete tree, collapsed. Please click on the location on the tree where you think the average of all nodes is situated, meaning the point where half of all the concepts are to the right and the other half are to the left.

If you change your mind, you can submit a new estimate by clicking again.



SumTree Ontology Visualization



Thank you for all your input so far. This is a mock-up of a search function that we may include in future versions of this tree visualization. A user can type in a search term (bottom left, "Diabetes" in this case). Subsequently, red squares highlight nodes on different hierarchy levels in which the search term appears. In order to assess whether this is a desirable feature, we would love your input as to how useful you would find this search function. When answering, please be as specific as you can.

Post-Q

How much did you like the visualization?

Not at all

Somewhat

Neither liked it
nor disliked it

Somewhat

Very much

I liked it...



Was it easy to use the visualization?

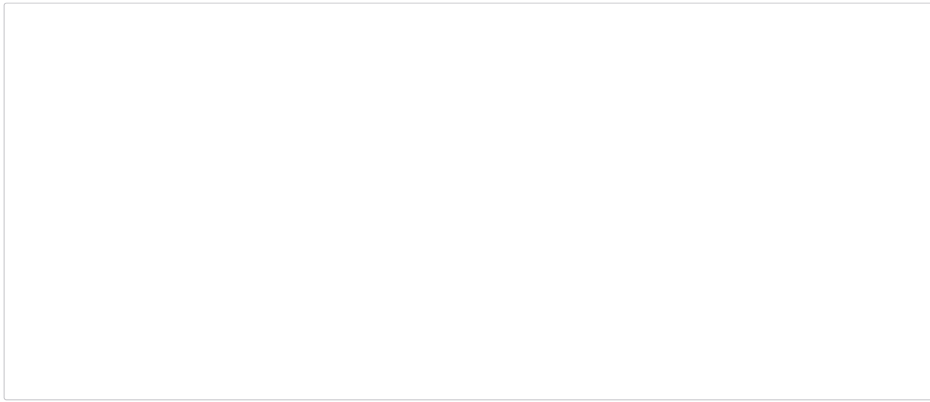
	Not easy at all	Not very easy	Neither easy nor hard	Somewhat easy	Very easy
It was	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What did you like about the visualization?

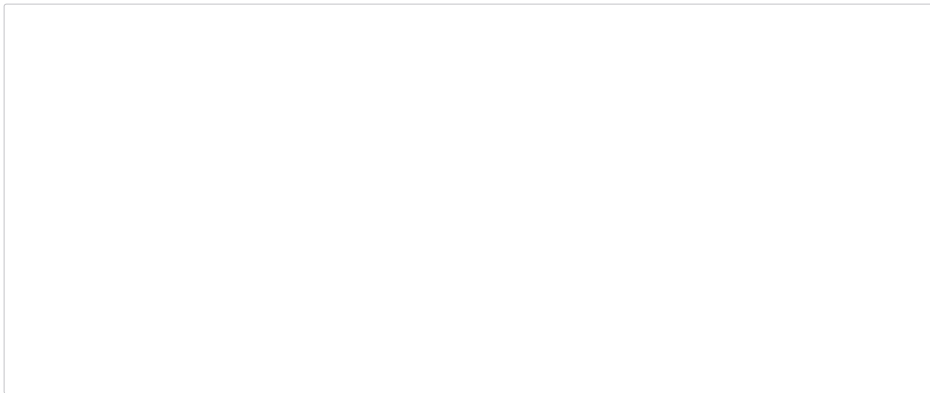
What did you dislike about the visualization?

What can be done to improve the visualization?

What sorts of information or insights did you find easy to locate within the visualization?



What sorts of information or insights did you find difficult to locate within the visualization?



Demographics Employment

Which statement best describes your current employment status?

Working (paid employee)

Working (self-employed)

Not working (retired)

Not working (temporary layoff from a job)

Not working (disabled)

Not working (looking for work)

Not working (other)

Prefer not to answer

Which of the following industries most closely matches the one in which you are employed?

Manufacturing
Information
Real estate or rental and leasing
Construction
Mining
Arts, entertainment or recreation
Accommodation or food services
Admin, support, waste management or remediation services
Wholesale trade
Forestry, fishing, hunting or agriculture support
Health care or social assistance
Retail trade
Finance or insurance
Educational services
Professional, scientific or technical services
Utilities
Management of companies or enterprises
Transportation or warehousing
Unclassified establishments
Other services (except public administration)

Please indicate your occupation:

Sales and office
Construction, extraction, and maintenance
Production, transportation, and material moving
Management, professional, and related
Farming, fishing, and forestry
Government
Retired
Service
Unemployed

MTurk Checkout

Thank you for participating.

Your validation code is: \${e://Field/ResponseID}

To receive payment for participating, click "Accept HIT" in the Mechanical Turk window, enter this validation code, then click "Submit".