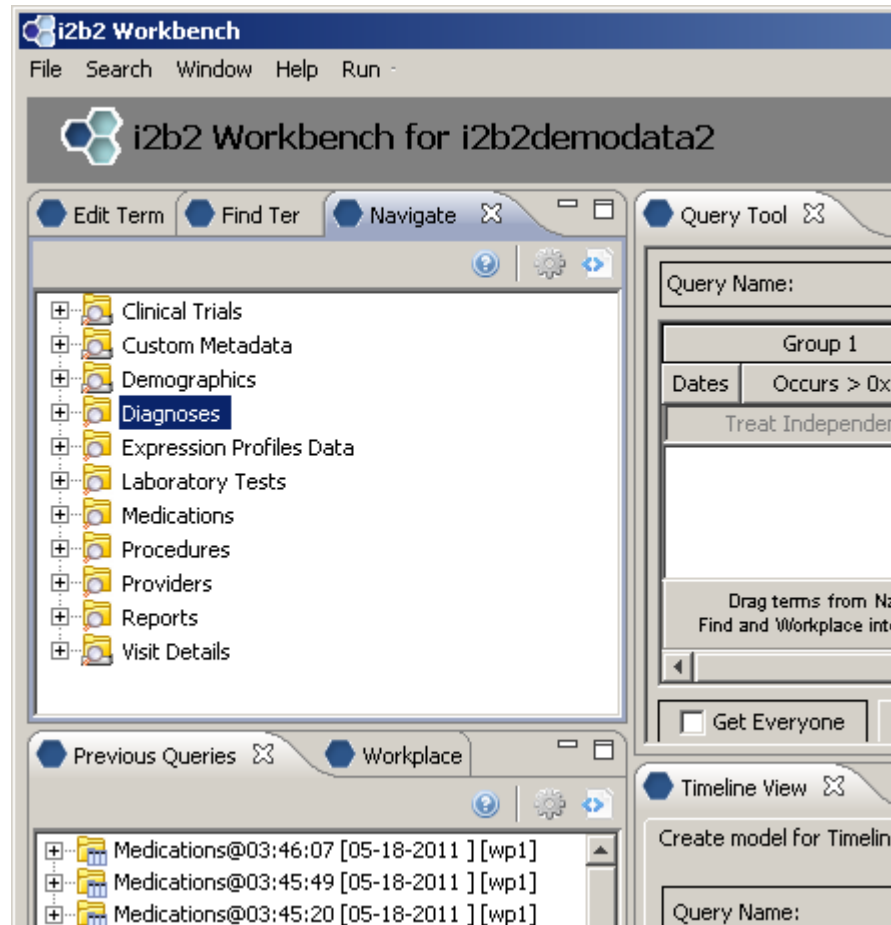


i2b2 Navigate Terms View



Creating the root level nodes

There is a one-to-one mapping between the entries of the table_access table and the root level nodes for a given project.

| | C_TABLE_CD | C_TABLE_NAME | C_HLEVEL | C_FULLNAME | C_NAME |
|----|------------|--------------|----------|---------------------------------|--------------------------|
| 1 | BIRN | BIRN | 0 | \BIRN\ | Clinical Trials |
| 2 | CUST | CUSTOM_META | 0 | \Custom Metadata\ | Custom Metadata |
| 3 | i2b2_DEMO | I2B2 | 1 | \i2b2\Demographics\ | Demographics |
| 4 | i2b2_DIAG | I2B2 | 1 | \i2b2\Diagnoses\ | Diagnoses |
| 5 | i2b2_EXPR | I2B2 | 1 | \i2b2\Expression Profiles Data\ | Expression Profiles Data |
| 6 | i2b2_LABS | I2B2 | 1 | \i2b2\Labtests\ | Laboratory Tests |
| 7 | i2b2_MEDS | I2B2 | 1 | \i2b2\Medications\ | Medications |
| 8 | i2b2_PROC | I2B2 | 1 | \i2b2\Procedures\ | Procedures |
| 9 | i2b2_PROV | I2B2 | 1 | \i2b2\Providers\ | Providers |
| 10 | i2b2_REP | I2B2 | 1 | \i2b2\Reports\ | Reports |
| 11 | i2b2_VISIT | I2B2 | 1 | \i2b2\Visit Details\ | Visit Details |

Building local metadata

```
<concept>
  <level>1</level>
  <key>\\i2b2_DIAG\i2b2\Diagnoses</key>
  <name>Diagnoses</name>
  ...
</concept>
```

| | C_TABLE_CD | C_TABLE_NAME | C_HLEVEL | C_FULLNAME | C_NAME |
|---|------------|--------------|----------|---------------------------------|--------------------------|
| 1 | BIRN | BIRN | 0 | \BIRN\ | Clinical Trials |
| 2 | CUST | CUSTOM_META | 0 | \Custom Metadata\ | Custom Metadata |
| 3 | i2b2_DEMO | I2B2 | 1 | \i2b2\Demographics\ | Demographics |
| 4 | i2b2_DIAG | I2B2 | 1 | \i2b2\Diagnoses\ | Diagnoses |
| 5 | i2b2_EXPR | I2B2 | 1 | \i2b2\Expression Profiles Data\ | Expression Profiles Data |
| 6 | i2b2_LABS | I2B2 | 1 | \i2b2\Labtests\ | Laboratory Tests |
| 7 | i2b2_MEDS | I2B2 | 1 | \i2b2\Medications\ | Medications |

A concept's key is made up of two parts: \\c_table_cd\c_fullname

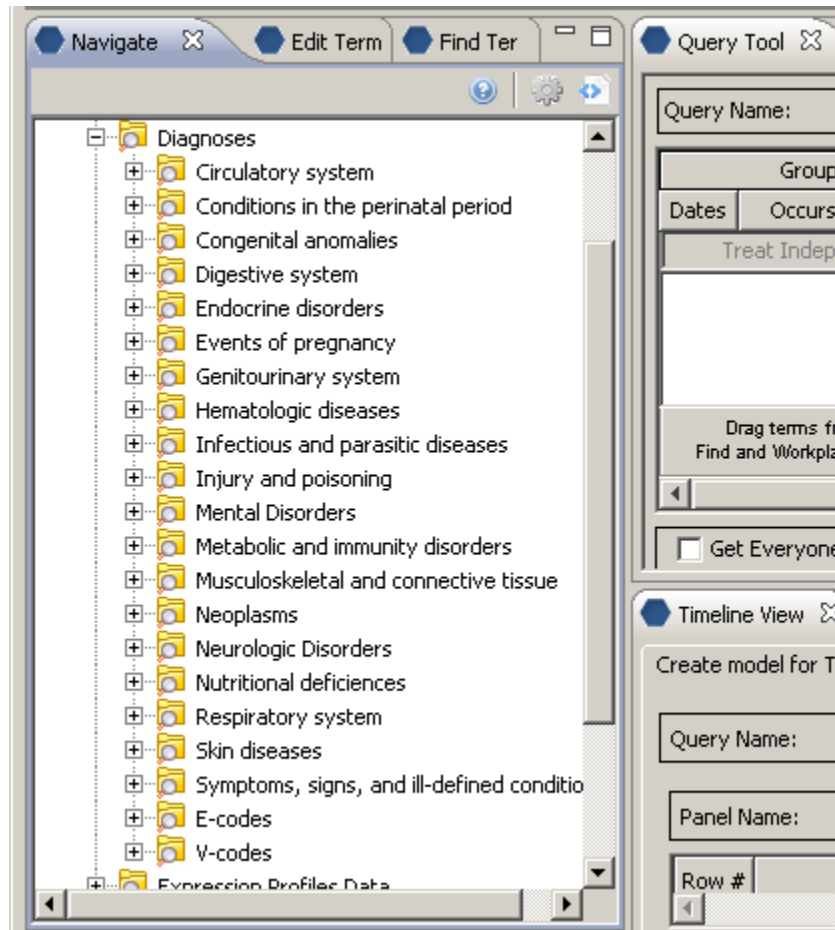
The c_table_cd tells the ONT cell which metadata table the concept resides in ('i2b2'), while c_fullname is a unique identifier for the concept itself.

Children of concept Diagnoses [\\i2b2\Diagnoses\]

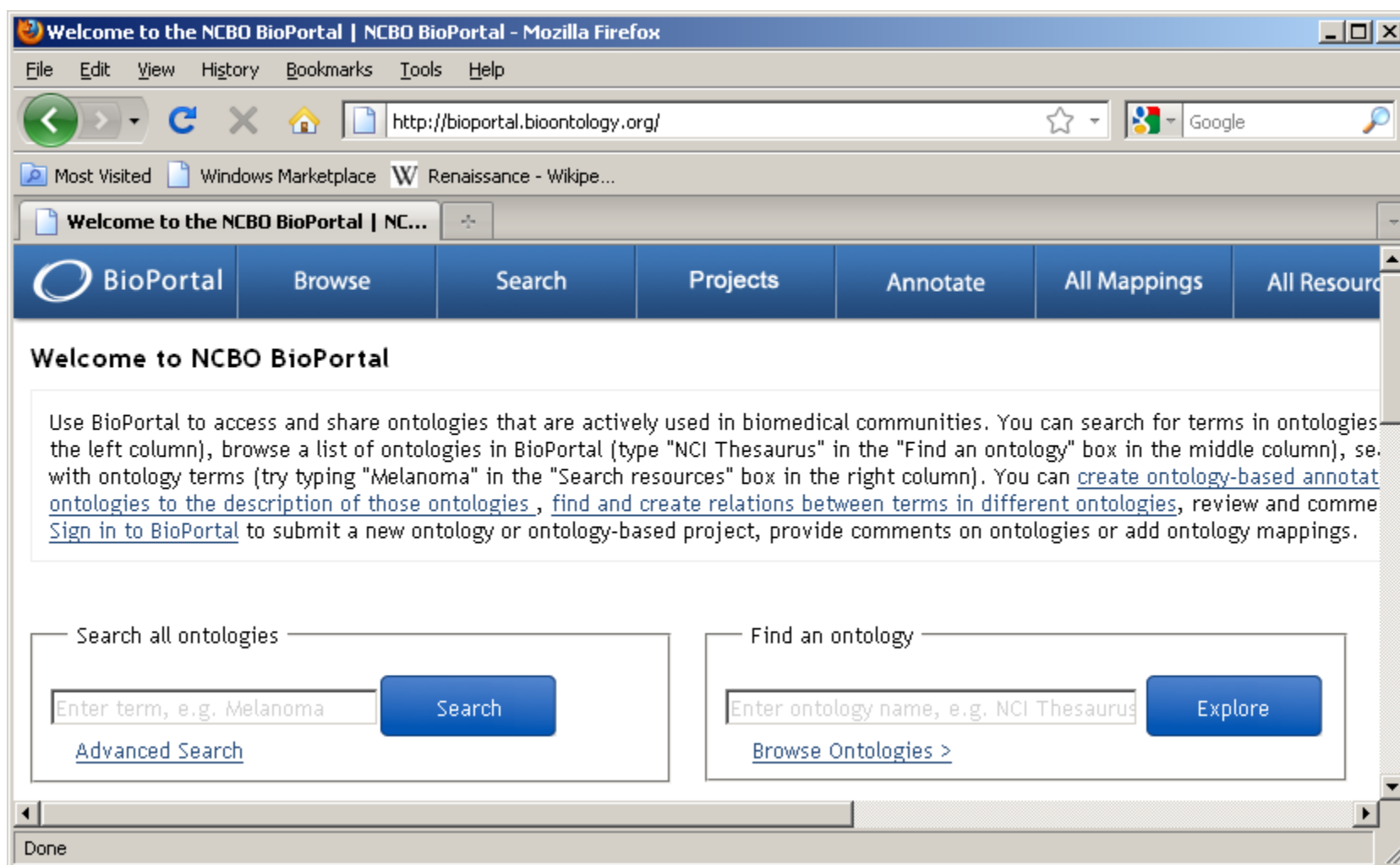
| C_HLEVEL | C_FULLNAME | C_NAME |
|----------|---|---|
| 2 | \\i2b2\Diagnoses\Circulatory system (390-459)\ | Circulatory system |
| 2 | \\i2b2\Diagnoses\Conditions in the perinatal period (760-779)\ | Conditions in the perinatal period |
| 2 | \\i2b2\Diagnoses\Congenital anomalies (740-759)\ | Congenital anomalies |
| 2 | \\i2b2\Diagnoses\Digestive system (520-579)\ | Digestive system |
| 2 | \\i2b2\Diagnoses\Endocrine disorders (240-259)\ | Endocrine disorders |
| 2 | \\i2b2\Diagnoses\Events of pregnancy (630-677)\ | Events of pregnancy |
| 2 | \\i2b2\Diagnoses\Genitourinary system (580-629)\ | Genitourinary system |
| 2 | \\i2b2\Diagnoses\Hematologic diseases (280-289)\ | Hematologic diseases |
| 2 | \\i2b2\Diagnoses\Infectious and parasitic diseases (001-139)\ | Infectious and parasitic diseases |
| 2 | \\i2b2\Diagnoses\Injury and poisoning (800-999)\ | Injury and poisoning |
| 2 | \\i2b2\Diagnoses\Mental Disorders (290-319)\ | Mental Disorders |
| 2 | \\i2b2\Diagnoses\Metabolic and immunity disorders (270-279)\ | Metabolic and immunity disorders |
| 2 | \\i2b2\Diagnoses\Musculoskeletal and connective tissue (710-739)\ | Musculoskeletal and connective tissue |
| 2 | \\i2b2\Diagnoses\Neoplasms (140-239)\ | Neoplasms |
| 2 | \\i2b2\Diagnoses\Neurologic Disorders (320-389)\ | Neurologic Disorders |
| 2 | \\i2b2\Diagnoses\Nutritional deficiencies (260-269)\ | Nutritional deficiencies |
| 2 | \\i2b2\Diagnoses\Respiratory system (460-519)\ | Respiratory system |
| 2 | \\i2b2\Diagnoses\Skin diseases (680-709)\ | Skin diseases |
| 2 | \\i2b2\Diagnoses\Symptoms, signs, and ill-defined conditions (780-799)\ | Symptoms, signs, and ill-defined conditions |
| 2 | \\i2b2\Diagnoses\zz E-codes\ | E-codes |
| 2 | \\i2b2\Diagnoses\zz V-codes\ | V-codes |

Concept Diagnoses' children all start with a c_fullname of '\\i2b2\Diagnoses\
and all reside in the same table as 'Diagnoses' (c_table_cd = 'i2b2_DIAG', c_table_name = 'i2b2')

Children of concept Diagnoses display



Creating metadata for standard ontologies using BioPortal



The screenshot shows a Mozilla Firefox browser window displaying the NCBO BioPortal website. The address bar shows the URL <http://bioportal.bioontology.org/>. The browser's menu bar includes File, Edit, View, History, Bookmarks, Tools, and Help. The page title is "Welcome to the NCBO BioPortal | NCBO BioPortal - Mozilla Firefox".

The website's navigation bar features the BioPortal logo and several menu items: Browse, Search, Projects, Annotate, All Mappings, and All Resources. Below the navigation bar, the page is titled "Welcome to NCBO BioPortal".

The main content area contains a welcome message: "Use BioPortal to access and share ontologies that are actively used in biomedical communities. You can search for terms in ontologies (the left column), browse a list of ontologies in BioPortal (type 'NCI Thesaurus' in the 'Find an ontology' box in the middle column), search with ontology terms (try typing 'Melanoma' in the 'Search resources' box in the right column). You can [create ontology-based annotations to the description of those ontologies](#), [find and create relations between terms in different ontologies](#), review and comment on ontologies, [Sign in to BioPortal](#) to submit a new ontology or ontology-based project, provide comments on ontologies or add ontology mappings.

Below the text, there are two search boxes:

- Search all ontologies:** A search box with the placeholder text "Enter term, e.g. Melanoma" and a blue "Search" button. Below the search box is a link for "Advanced Search".
- Find an ontology:** A search box with the placeholder text "Enter ontology name, e.g. NCI Thesaurus" and a blue "Explore" button. Below the search box is a link for "Browse Ontologies >".

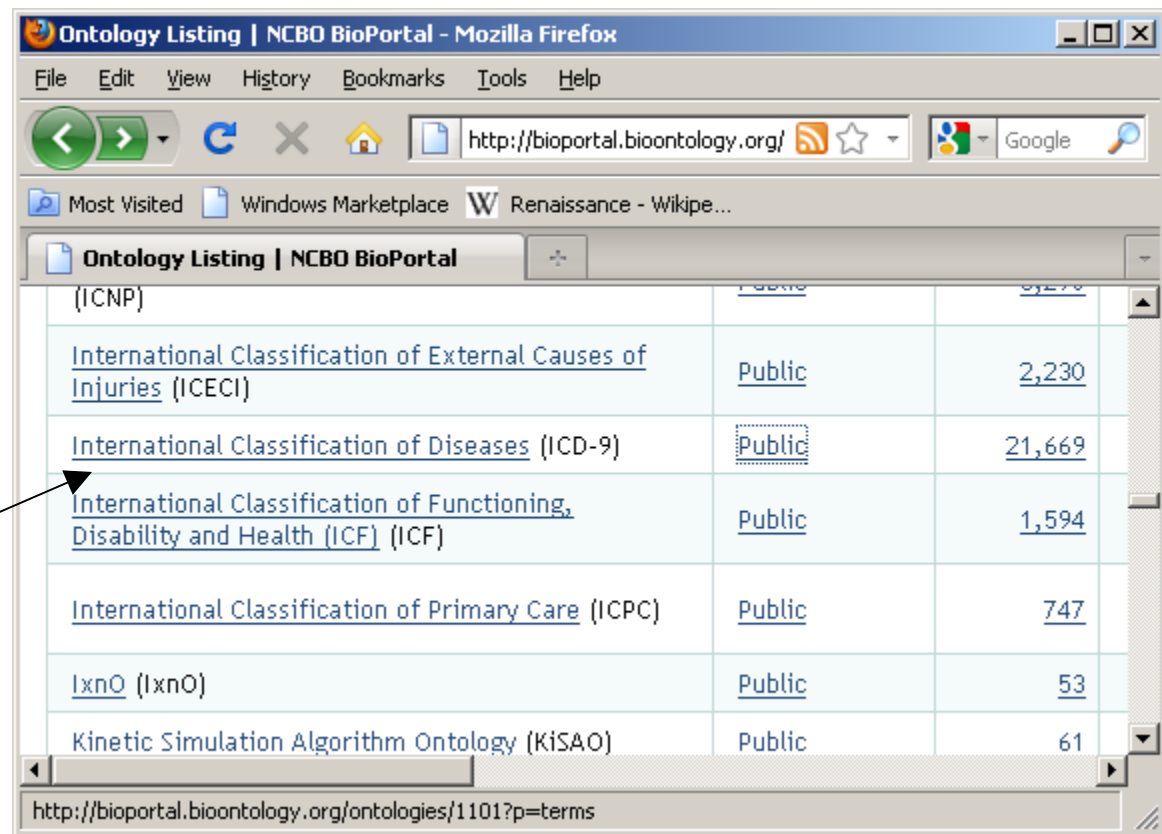
The browser's status bar at the bottom shows "Done".

NCBO BioPortal hosts over 250 ontologies

Any of these ontologies may be extracted for use within i2b2 through use of a standalone Extraction tool.

Browse ontologies within BioPortal and locate ontology of interest: (double click on name of ontology)

ICD-9



| Ontology Name | Access | Count |
|--|--------|--------|
| (ICNP) | Public | 2,230 |
| International Classification of External Causes of Injuries (ICECI) | Public | 2,230 |
| International Classification of Diseases (ICD-9) | Public | 21,669 |
| International Classification of Functioning, Disability and Health (ICF) (ICF) | Public | 1,594 |
| International Classification of Primary Care (ICPC) | Public | 747 |
| IxnO (IxnO) | Public | 53 |
| Kinetic Simulation Algorithm Ontology (KiSAO) | Public | 61 |

Detail summary page:

The screenshot shows a web browser window displaying the BioPortal summary page for the International Classification of Diseases (ICD) ontology. The browser's address bar shows the URL <http://bioportal.bioontology.org/ontologies/1101>. The BioPortal navigation bar includes links for Browse, Search, Projects, Annotate, All Mappings, and All Resources. The main content area is titled "International Classification of Diseases" and features a "Summary" dropdown menu. The page is divided into two main sections: "Details" and "Metrics".

Details

| | |
|----------------------------|--|
| ONTOLOGY ID: | 1101 |
| BIOPORTAL PURL: | http://purl.bioontology.org/ontology/ICD-9 |
| STATUS: | |
| FORMAT: | RRF |
| CATEGORIES: | |
| GROUPS: | Unified Medical Language System WHO Family of International Classifications |
| CONTACT: | The World Health Organization, info@who.int |
| HOME PAGE: | http://www.who.int/classifications/icd/en/ |
| PUBLICATIONS PAGE: | |
| DOCUMENTATION PAGE: | |
| DESCRIPTION: | The ICD is the international standard diagnostic classification for all general epidemiological, many health management purposes and clinical use. |

Metrics

| | |
|--|-------|
| NUMBER OF CLASSES: | 21669 |
| NUMBER OF INDIVIDUALS: | 0 |
| NUMBER OF PROPERTIES: | 10 |
| MAXIMUM DEPTH: | 6 |
| MAXIMUM NUMBER OF SIBLINGS: | 25 |
| AVERAGE NUMBER OF SIBLINGS: | 1 |
| CLASSES WITH A SINGLE SUBCLASS: | 23 |
| CLASSES WITH MORE THAN 25 SUBCLASSES: | 0 |
| CLASSES WITH NO AUTHOR: | 0 |
| CLASSES WITH NO DEFINITION: | 0 |

Locate ontology id for version of interest [45221]

International Classification of Diseases - Summary | NCBO BioPortal - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://bioportal.bioontology.org/ontologies/1101

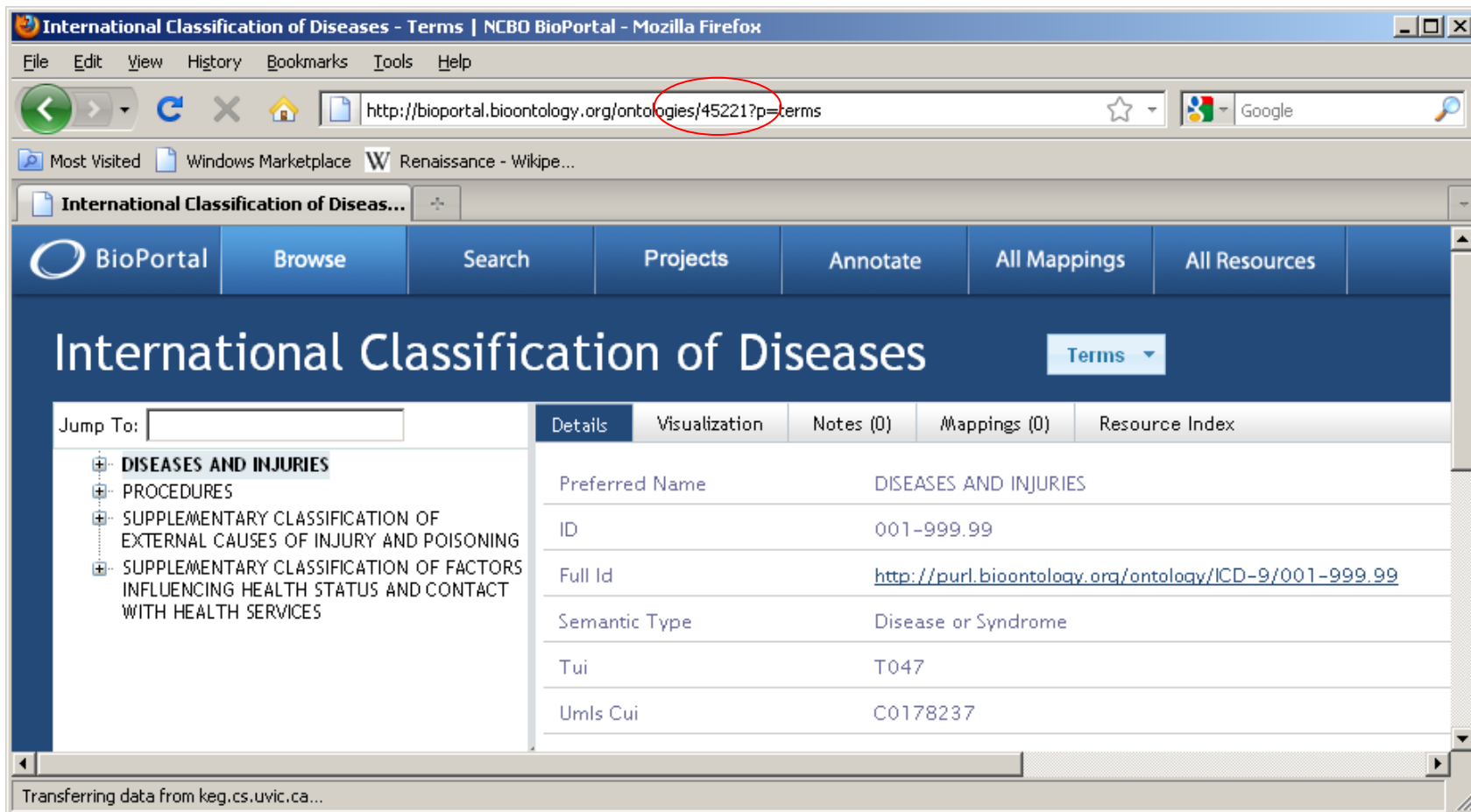
Most Visited Windows Marketplace W Renaissance - Wikip... International Classification of Diseas...

Versions

| VERSION | RELEASE DATE | DOWNLOADS |
|----------|--------------|--------------------------|
| 9 | 05/16/2008 | Ontology |
| <u>9</u> | 05/16/2008 | Ontology |

http://bioportal.bioontology.org/ontologies/45221?p=terms

45221 is the ontology id which uniquely identifies this version of this ontology. It is generally a 5-digit number.



International Classification of Diseases - Terms | NCBO BioPortal - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://bioportal.bioontology.org/ontologies/45221?p=terms

Most Visited Windows Marketplace Renaissance - Wikipe...

International Classification of Diseas...

BioPortal Browse Search Projects Annotate All Mappings All Resources

International Classification of Diseases

Terms

Jump To:

- ⊕ DISEASES AND INJURIES
- ⊕ PROCEDURES
- ⊕ SUPPLEMENTARY CLASSIFICATION OF EXTERNAL CAUSES OF INJURY AND POISONING
- ⊕ SUPPLEMENTARY CLASSIFICATION OF FACTORS INFLUENCING HEALTH STATUS AND CONTACT WITH HEALTH SERVICES

| Details | Visualization | Notes (0) | Mappings (0) | Resource Index |
|----------------|---|-----------|--------------|----------------|
| Preferred Name | DISEASES AND INJURIES | | | |
| ID | 001-999.99 | | | |
| Full Id | http://purl.bioontology.org/ontology/ICD-9/001-999.99 | | | |
| Semantic Type | Disease or Syndrome | | | |
| Tui | T047 | | | |
| Umls Cui | C0178237 | | | |

Transferring data from keg.cs.uvic.ca...

NCBO-specific Ontology Extraction tool inputs:

Ontology id: 5-digit id assigned to ontology version of interest

apikey: An API key assigned to you by NCBO. Log onto BioPortal (or get an account); your apikey is located on your Account page.

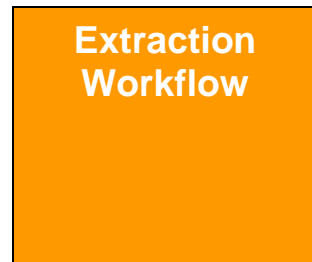
NCBO Ontology Extraction Workflow (2-stage process)

1. Extract data from NCBO to staging table

Request to extract ontology



Ontology id,
apikey

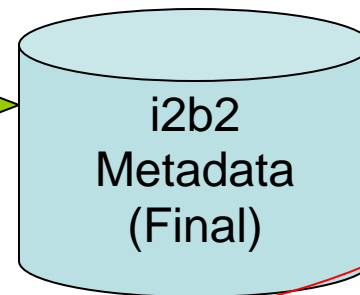
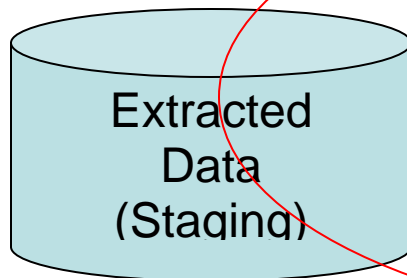


NCBO
REST
XML

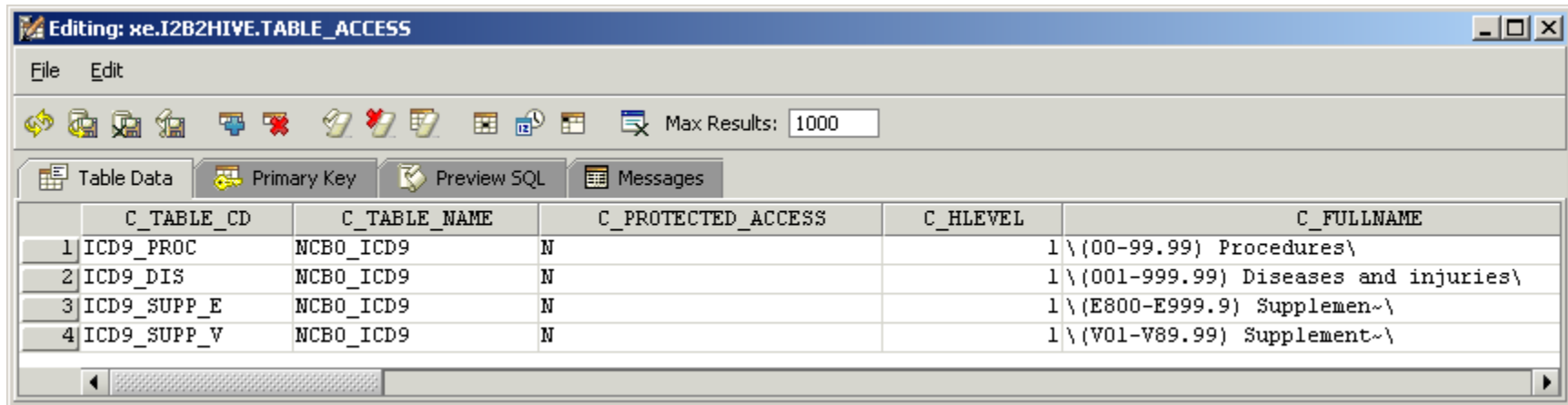


2. Process data in staging table

Process



Point table_access to root nodes of your new extracted metadata.



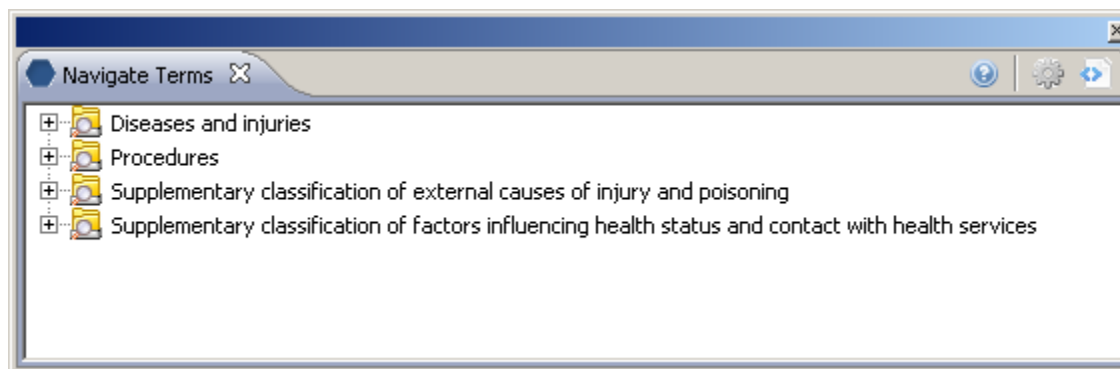
Editing: xe.I2B2HIVE.TABLE_ACCESS

File Edit

Max Results: 1000

Table Data Primary Key Preview SQL Messages

| | C_TABLE_CD | C_TABLE_NAME | C_PROTECTED_ACCESS | C_HLEVEL | C_FULLNAME |
|---|-------------|--------------|--------------------|----------|--|
| 1 | ICD9_PROC | NCBO_ICD9 | N | 1 | \{(00-99.99) Procedures\} |
| 2 | ICD9_DIS | NCBO_ICD9 | N | 1 | \{(001-999.99) Diseases and injuries\} |
| 3 | ICD9_SUPP_E | NCBO_ICD9 | N | 1 | \{(E800-E999.9) Supplemen~\} |
| 4 | ICD9_SUPP_V | NCBO_ICD9 | N | 1 | \{(V01-V89.99) Supplement~\} |



Navigate Terms

- [-] Diseases and injuries
- [-] Procedures
- [-] Supplementary classification of external causes of injury and poisoning
- [-] Supplementary classification of factors influencing health status and contact with health services