Hackathon Programming Tasks

Web service documentation:
http://www.bioontology.org/wiki/index.php/NCBO_REST_services

Sample code:
```
svn checkout https://bmir-gforge.stanford.edu/svn/client_examples
Includes both Perl and Java examples. Some Web service calls in other
languages, e.g. Python, Ruby examples for the Annotator
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XML Attribute definitions and mappings across web service calls
https://docs.google.com/spreadsheet/ccc?key=0AthMJzAha3rkdHJVSDVZdm50dE44eEVpWU1pbHdfMlE

Other Resources:

- Firefox HTTP Resource Test Add-On
  - https://addons.mozilla.org/en-US/firefox/addon/http-resource-test/
  - Allows you test Web service calls as GET, POST, PUT, and DELETE from your browser
- Firefox API Key Add-On:
  - https://addons.mozilla.org/en-US/firefox/addon/ncbo-api-key/
  - Appends your API Key to web service calls
- URL Decoder/Encoder:
  - http://meyerweb.com/eric/tools/dencoder/
  - Use to URL-encode term URIs when testing web service calls in the browser

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* List All Ontologies
Perl sample code – https://bmir-gforge.stanford.edu/gf/project/client_examples/scmsvn/?action=browse&path=%2Ftrunk%2FPerl%2FListOntologies%2F

Java sample code – https://bmir-gforge.stanford.edu/gf/project/client_examples/scmsvn/?action=browse&path=%2Ftrunk%2FJava%2FListOntologies-Java%2F

- Report how many ontologies are in BioPortal

- Report the ontology identifier for SNOMED Clinical Terms and the Gene Ontology

- Report the abbreviation for SNOMED Clinical Terms and the Gene Ontology

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* Search:
Perl sample code – https://bmir-gforge.stanford.edu/gf/project/client_examples/scmsvn/?action=browse&path=%2Ftrunk%2FPerl%2FBioPortalTermSearch%2F

Java sample code – https://bmir-gforge.stanford.edu/gf/project/client_examples/scmsvn/?action=browse&path=%2Ftrunk%2FJava%2FBioPortalTermSearch%2F

- How many terms contain the word brain?

- How many terms match exactly to the term brain?

- How many terms in NIFSTD match exactly to the term brain?

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* Get Term Details
- Get the term details (definition, URI, synonyms) for search results to the term brain from NIFSTD. Web service documentation: http://www.bioontology.org/wiki/index.php/NCBO_REST_services#Term_services

- What parameter can you add to the Web service call to return only basic information for the concept and its immediate children

- What parameter can you add to return only the term information without the relations map

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* Term Mappings
- Download mappings between two ontologies – your choice!
    - Perl sample code: https://bmir-gforge.stanford.edu/gf/project/client_examples/scmsvn/?action=browse&path=%2Ftrunk%2FPerl%2FExtractMappings%2F
- Upload mappings (Stage)
    - See Web service documentation
    - Example call (POST): http://stagerest.bioontology.org/bioportal/virtual/mappings/concepts?submittedby=38128&type=manual&source=http%3A%2F%2Fsig.uw.edu%2Ffma%23Ciliated&target=http%3A%2F%2Fncicb.nci.nih.gov%2Fxml%2Fowl%2FEVS%2FThesaurus.owl%23Gallbladder_Disorder&sourceontology=1053&targetontology=1032&relation=http://test.relation.com&apikey=YourAPIKey

* Term Proposals

- Submit a new term (use "stagerest")
    - Example call (POST):
      http://stagerest.bioontology.org/bioportal/virtual/notes/1032?type=ProposalForCreateEntity&appliesto=http%3A%2F%2Fncicb.nci.nih.gov%2Fxml%2Fowl%2FEVS%2FThesaurus.owl%23Melanoma&appliestotype=Class&subject=Test%20term%20proposal&reasonforchange=new20term&author=38198&termdefinition=definition&termparent=http%3A%2F%2Fncicb.nci.nih.gov%2Fxml%2Fowl%2FEVS%2FThesaurus.owl%23Common_Neoplasm&termpreferredname=preferredname&apikey=YourAPIKey&contactinfo=whetzel-emailaddress&status=submitted

- Submit a comment (use "stagerest")
    - Example call (POST):
      http://stagerest.bioontology.org/bioportal/virtual/notes/1032?type=Comment&appliesto=http%3A%2%2Fncicb.nci.nih.gov%2Fxml%2Fowl%2FEVS%2FThesaurus.owl%23Melanoma&appliestotype=Class&subject=New%20Comment&content=test%20adding%20a%20new%20comment&author=whetzel&apikey=YourAPIKey

- Web service documentation at:
  http://www.bioontology.org/wiki/index.php/Ontology_Notes

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* Annotator

Parameter documentation:
http://www.bioontology.org/wiki/index.php/Annotator_User_Guide

- What ontology terms are found from the Annotator limiting results to the SNOMED Clinical Terms given the input text "Melanoma is a malignant tumor of melanocytes which are found predominantly in skin but also in the bowel and the eye"?

- How can the term "Is a" be removed from the results?

- What terms are now returned limiting the results to SNOMED Clinical Terms and the semantic type for "neoplastic process"?
  Process: Find semantic type for "Neoplastic process" and populate as value for parameter "semanticTypes".

- What additional terms are returned when limiting the results to "SNOMED Clinical Terms" and expanding the annotations to include direct parents and limiting to the semantic type for "neoplastic process"?

Process: Change the value to “1” for the parameter levelMax and parse out values for <contextName>CLOSURE</contextName>

- What mapped terms from MedDRA are returned when expanding the annotations to include Automatic mappings and limiting to SNOMED Clinical Terms and the semantic type for neoplastic process?

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* Ontology Recommender
  - What are the top 5 ontologies recommended given input text “Melanoma is a malignant tumor of melanocytes which are found predominantly in skin but also in the bowel and the eye”?

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* Resource Index
  - How many annotations exist in ClinicalTrials.gov for term “melanoma” from NCIT?

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* SPARQL Endpoint
  - Examples at: http://sparql.bioontology.org/examples