

EXERCISES*

Track: Terminology
Tutorial: Basic Terminology Services
Speaker: Jim Steel

The speaker will be in the hands-on area to answer your questions!

During the hands-on session of the Basic FHIR Terminology Services tutorial we will explore working with the terminology Resource types, creating example instances and using them with their associated operations. This will include building some widgets that use the operations.

The following exercises are somewhat progressive; some steps build on the previous steps, so you should try them out in sequence:

1. Build your own custom CodeSystem
2. Define ValueSets using different kinds of inclusion/exclusion filters
3. Create/modify a data entry widget to use your ValueSets
4. Create a ConceptMap from one or more of your ValueSets to another ValueSet
5. Create/modify a data validation widget
6. Use terminology to search other resources
7. Consider completing the Advanced FHIR Terminology Services exercises

Have fun, and remember to ask for help if you get stuck!

1. Build your own custom CodeSystem

Define a Code System for a local hospital or clinic with codes to identify buildings, floors within each building, and the wards and other areas on each floor.

- Try to use hierarchy
- Define display terms and synonyms for the concepts
- Define some different properties for the concepts, e.g. room purpose or security level

2. Define ValueSets using your CodeSystem

Create some ValueSets based on your CodeSystem the following:

- Use a hierarchy filter to define a ValueSet for all locations in a given building
- Use a property filter to define a ValueSet for all locations of a given type
- Use a property filter to exclude rooms with a certain security level
- Create a ValueSet for locations that are closed for maintenance, listing them individually, and use this ValueSet in one of your other ValueSets to exclude these locations from appearing

3. Create/modify a data entry widget to use each of your ValueSets

- Use <http://plnkr.co> or similar to create a data entry widget that allows a user to search for and select a code from each of your ValueSets. Alternatively, you may want to modify an existing widget.
- Modify your widget to conditionally use a picklist paradigm (radio buttons or dropdown) for ValueSets that have a small expansion.
- Modify your widget to do a \$lookup on the selected concept and display the details in a table

* This exercise will not be evaluated and no prizes are attached to any result.



4. Create a ConceptMap

- Create a map from locations in your one or more of your ValueSets to concepts in the HL7 v3 ServiceDeliveryLocationRoleType ValueSet (<https://www.hl7.org/fhir/v3/ServiceDeliveryLocationRoleType/vs.html>)
- Investigate the different relationship kinds that might be appropriate in your map
- Think about how you might use unmapped clauses to deal with edge cases in your map

5. Create/modify a data validation widget for entering data into a table and checking its validity

- Make a table with a column for the user to enter codes
- Make a \$validate-code call to check whether the codes are valid with respect to one of your ValueSets
- Add a column for the user to enter display text, and update your check to also check the validity of the display text
- Add a column for the equivalent HL7 v3 code, and if the code is valid, show the equivalent HL7 v3 code in the third column using a \$translate call (and a \$lookup call, if you would like to show the HL7 v3 code's display text)

6. Use terminology to search other resources

- Use hierarchy to search a FHIR Server for all Location resources whose type is ICU or one of its descendents (/Location?type:below=ICU)
- Create a simple ValueSet based on the HL7 v3 ServiceDeliveryLocationRoleType Value Set (<https://www.hl7.org/fhir/v3/ServiceDeliveryLocationRoleType/vs.html>). For example, all of the ICU Locations (concept is-a ICU) as well as ER Locations (concept is-a ER)
- Use this to search a FHIR Server for all Location resources whose type is in this Value Set (/Location?type:in=http://uri.of/your/valueSet)

Tools that may help with the above:

- FHIR Server/s: URLs to be supplied on the day
- Postman (for sending requests)
- Terminology Browser (for SNOMED and others): <http://ontoserver.csiro.au/shrimp>