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Let's Build! FAST CDA: FHIR Tool Stack for CDA

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During the Let's Build! Session, you will learn how you can use FHIR tooling with CDA.

After completing this tutorial, you will be able to:

- Validate a CDA document
- Convert a CDA document to the Logical Model JSON representation
- Apply FHIRPath expressions to a CDA document
- Transform a CDA document to a FHIR document with the FHIR Mapping Language

Requirements

1. Java Runtime: JRE 8 (or greater) installed on computer
2. Download Content of Release <https://github.com/ahdis/cda-core-2.0/releases/tag/v0.0.2-dev> in a folder.
3. Open Terminal / Command Prompt and change into the downloaded folder

The tutorial and code for this exercise can be found at:

<https://github.com/ahdis/cda-core-2.0/tree/develop/tutorial.md>

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

Validate a CDA document

See requirements first to start the tutorial. The cda-core-2.0 release contains CDA examples. For this exercise validate the cda-ch.xml with the org.hl7.fhir.validation.cli.jar from [here](#), it should have 0 errors.

```
java -jar org.hl7.fhir.validation.cli.jar -version 4.0.1 -ig package.tgz cda-ch.xml
```

```
FHIR Validation tool Version 4.0.32-SNAPSHOT
```

```
.. connect to tx server @ http://tx.fhir.org
```

```
.. definitions from hl7.fhir.r4.core#4.0.1
```

```
+ .. load IG from package.tgz
```

```
.. validate [resources/examples/cda-ch.xml]
```

```
Success...validating resources/examples/cda-ch.xml: error:0 warn:0 info:20
```

Convert a CDA document to the Logical Model JSON representation

The validator has a parameter to convert XML to JSON. This works also for CDA if the Logical Model package is provided. For this exercise convert the cda-original.xml to JSON.

```
java -jar org.hl7.fhir.validation.cli.jar -version 4.0.1 -ig package.tgz -convert
-output cda-original.json cda-original.xml
```

If successful you have the output in **cda-original.json**.

Apply FHIRPath expressions to a CDA Document

The validator has a parameter to apply FHIRPath expressions to CDA document. For this exercise extract the patients given name from cda-original.xml. If you prefer an interactive way of doing it, upload the cda-original.json from the previous exercise to niquola.fhirpath demo: <https://niquola.github.io/fhirpath-demo/#/> or open it in the [vs-code.fhir.tools.extension](#).

```
java -jar org.hl7.fhir.validation.cli.jar -version 4.0.1 -ig package.tgz -fhirpath
recordTarget.patientRole.patient.name.given.dataString cda-original.xml
```

This should return Henry.

Transform CDA to FHIR with the FHIR Mapping Language

The validator has a parameter to perform FHIR Mapping Language transforms. The maps are provided in the maps directory. For this exercise transform ccda.xml to a FHIR document with the map ClinicalDocument to ccda-fhir.xml.

```
java -jar org.hl7.fhir.validation.cli.jar -version 4.0.1 -ig package.tgz -
transform http://hl7.org/fhir/cda/mapping/ClinicalDocumentToFHIR -ig maps -log
test.txt -output ccda-fhir.xml ccda.xml
Start Transform http://hl7.org/fhir/cda/mapping/ClinicalDocumentToFHIR
Group : ClinicalDocumentBundle; vars = source variables [source:
(ClinicalDocument)], target variables [target: (Bundle)], shared variables []
...
...success
```

The result should be in ccda-fhir.xml