

## DocRef Pop Up Learning - Cerner - whyapis.org

**Goal:** make an app that makes a clinical note that appears in Cerner Powerchart and on the web using only FHIR

1st half: make the app

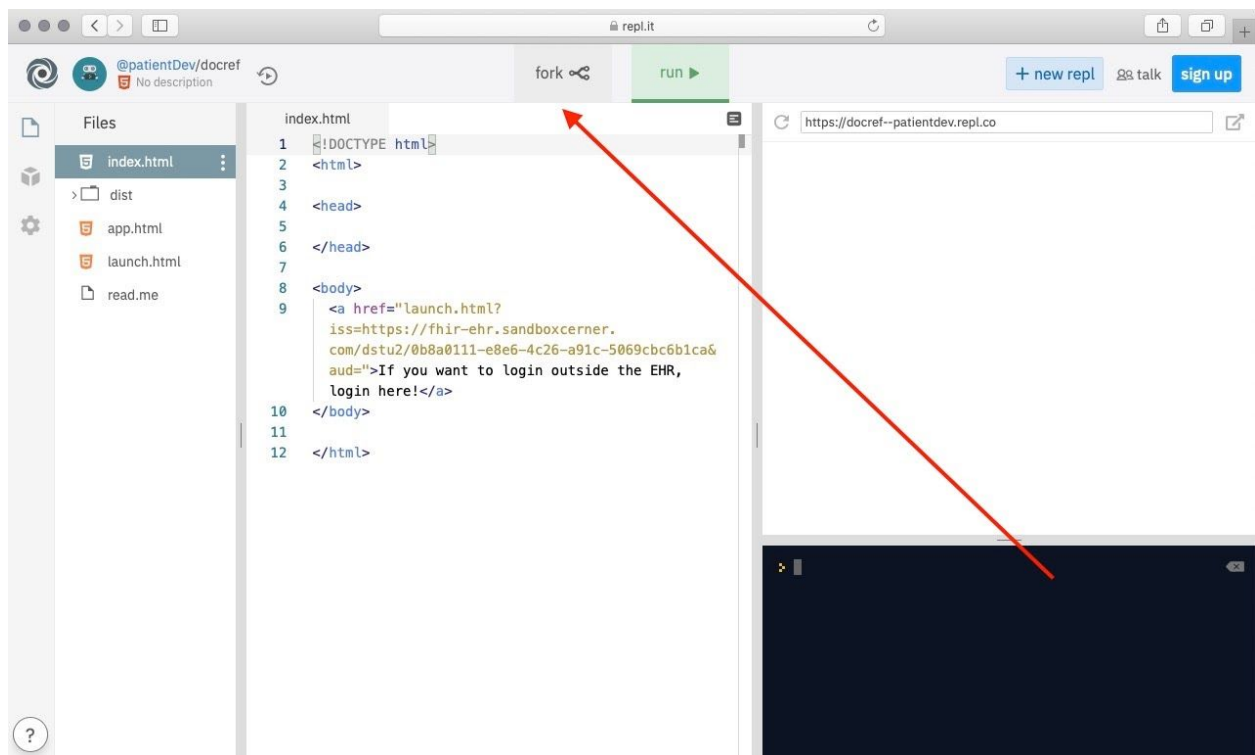
2nd half: look at code

DocRef Documentation at

<https://fhir.cerner.com/millennium/dstu2/infrastructure/document-reference/#create>

Create an account at <https://repl.it/>

Fork the repo at <https://repl.it/@patientDev/docref>



Create an account at <https://code.cerner.com/developer/smart-on-fhir/>

Click “+ New App” to create an app



Fill in any title

SMART Launch URI is your repl url + launch.html

Redirect URI is your repl url + app.html

App Type = Provider

FHIR Spec = DSTU2 (Create not available in R4 yet)

Authorized = yes

My Apps

## App Registration

\* Indicates a required field.

\* **App Name**

**SMART Launch URI**

The URI to initiate the launch of your SMART app

\* **Redirect URI**

The callback URI for the OAuth2 server to redirect to your SMART App

\* **App Type**

☒ Provider

☐ Patient

☐ System

\* **FHIR Spec**

The FHIR version your SMART App will consume

☒ dstu2

☐ r4

**your repl url + launch.html**

**your repl url + app.html**

**\* Authorized**

Does your SMART App require OAuth2?

☒ Yes

☐ No

**Scopes**

The OAuth access scopes that your SMART App will require to access FHIR resources. [Click here](#) to know more about scopes

**Standard Scopes**

☒ launch

☒ profile

☒ openid

☒ online\_access

Your “App Type” should be “Provider” and give it the following scopes: Patient.Binary.read, Patient.DocumentReference.read, Patient.DocumentReference.write, Patient.Patient.read

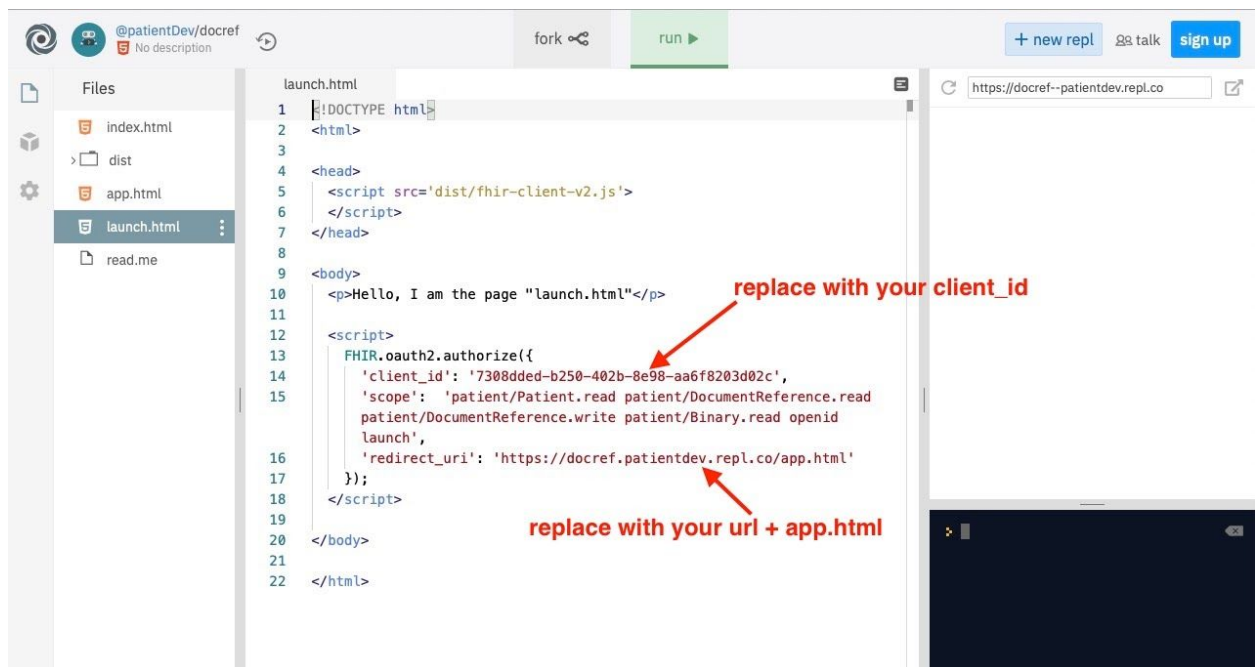
**User Scopes**

Resource	Scope
AllergyIntolerance	<input type="checkbox"/> read <input type="checkbox"/> write
Appointment	<input type="checkbox"/> read <input type="checkbox"/> write
Binary	<input type="checkbox"/> read
CarePlan	<input type="checkbox"/> read
Condition	<input type="checkbox"/> read <input type="checkbox"/> write
Contract	<input type="checkbox"/> read
Device	<input type="checkbox"/> read
DiagnosticReport	<input type="checkbox"/> read
DocumentReference	<input type="checkbox"/> read <input type="checkbox"/> write
Encounter	<input type="checkbox"/> read
Goal	<input type="checkbox"/> read
Immunization	<input type="checkbox"/> read
MedicationAdministration	<input type="checkbox"/> read
MedicationOrder	<input type="checkbox"/> read
MedicationStatement	<input type="checkbox"/> read <input type="checkbox"/> write
Observation	<input type="checkbox"/> read
Patient	<input type="checkbox"/> read <input type="checkbox"/> write

**Patient Scopes**

Resource	Scope
AllergyIntolerance	<input type="checkbox"/> read <input type="checkbox"/> write
Appointment	<input type="checkbox"/> read <input type="checkbox"/> write
Binary	<input checked="" type="checkbox"/> read
CarePlan	<input type="checkbox"/> read
Condition	<input type="checkbox"/> read <input type="checkbox"/> write
Contract	<input type="checkbox"/> read
Device	<input type="checkbox"/> read
DiagnosticReport	<input type="checkbox"/> read
DocumentReference	<input checked="" type="checkbox"/> read <input checked="" type="checkbox"/> write
Encounter	<input type="checkbox"/> read
Goal	<input type="checkbox"/> read
Immunization	<input type="checkbox"/> read
MedicationAdministration	<input type="checkbox"/> read
MedicationOrder	<input type="checkbox"/> read
MedicationStatement	<input type="checkbox"/> read <input type="checkbox"/> write
Observation	<input type="checkbox"/> read
Patient	<input checked="" type="checkbox"/> read <input type="checkbox"/> write

Open launch.html at repl.it with the one from code.cerner.com



“Test” your app in the code console on a patient

## DocRef Workshop



### Test DocRef Workshop

Click Begin Testing to create a testing environment

[Begin Testing](#)

### App Info

**Client Id:** 7308dded-b250-402b-8e98-aa6f8203d02c

**App Id:** efe1a728-6182-4d22-a63a-a27fab7d9245

**SMART Launch URI:** https://docref.patientdev.repl.co/launch.html

**Redirect URI:** https://docref.patientdev.repl.co/app.html

**App Type:** provider

**FHIR Spec:** dstu2 - "https://fhir-ehr.sandboxcerner.com/dstu2/0b8a0111-e8e6-4c26-a91c-5069cbc6b1ca"

**Authorized:** true

### Standard Scopes:

launch  
profile  
openid  
online\_access

### Patient Scopes:

patient/Binary.read  
patient/DocumentReference.read  
patient/Patient.read  
patient/DocumentReference.write

Testing Details ✕

Select a Patient:

Patient	Description
<b>SMART, Timmy</b> Male DOB: 2012-02-19	Young male child with inpatient encounter
<b>Peters, Tim</b> Male DOB: 1961-04-30	
<b>SMART, Wilma</b> Female DOB: 1947-03-16	Communication language set to Hindi
<b>SMART, Nancy</b> Female DOB: 1980-08-11	Patient with pregnancy condition
<b>SMART, Joe</b> Male DOB: 1976-04-29	
<b>SMART, Hailey</b> Female DOB: 2003-12-02	
<b>SMART, Fred Rick</b> Male DOB: 1946-08-22	
<b>SMART, Valerie S</b>	

Click on a test patient. Hit “Next” at the bottom of the modal. Then click “Launch” on the next screen. You will eventually be redirected to a sign in screen. Use username: portal password: portal (sign in stuff on their google group at <https://groups.google.com/forum/#!forum/cerner-fhir-developers> )



## Error

**if you see this,  
retry in a couple  
of minutes**

An application was attempting to request access to healthcare data with FHIR Play Millennium; unfortunately, the application isn't currently registered. If you require further assistance, please contact support.

If possible, please bookmark this page or take a screen shot of it to expedite the technical support process. For assistance, contact support via:

E-mail: [sample@provider-example.com](mailto:sample@provider-example.com)

Phone: [123-456-7890](tel:123-456-7890)

### Information to provide to Technical Support

Correlation ID: 2892c808-3ede-46a8-bfba-122f54d0886d

### Information to provide to Unknown Application

The supplied "client\_id" value does not correspond to any registered applications on record.

Error Code: urn:cerner:error:authorization-

This is a start to your note.

Click to Save

### Debug Area

### Documents from yesterday and today

**Click to open document**

#### Document Reference

Patient Name: SMART, WILMA

Document Type: Progress Note-Physician

You can write whatever you want in the note and save. Check out the code that does this in the createNote() function.

Sadly, as of 7/15 Binary in the sandbox is return 404. You can try to make an app in their new sandbox (<https://code.cerner.com/v2/developer/smart-on-fhir/apps>) but this is at your own risk as not publicly known yet. Works in b41 as well (ask Kevin about OneDrive Share).

## FAQ / Look at the code

### What is XHTML?

Need end tags (<input> needs to be <input />)

Lowercase and double quotes for all attributes ( <input "checked"="checked" />)

[http://validator.w3.org/#validate\\_by\\_upload+with\\_options](http://validator.w3.org/#validate_by_upload+with_options)

### What is required?

field	required?	comments
resourceType	yes	resourceType must be DocumentReference
subject	yes	Patient/123456
context	yes	encounter
indexed	yes	created datetime
type	yes	coding LOINC (can be custom value for that instance ie <a href="https://fhir.cerner.com/0b8a0111-e8e6-4c26-a91c-5069cbc6b1ca/codeSet/72">https://fhir.cerner.com/0b8a0111-e8e6-4c26-a91c-5069cbc6b1ca/codeSet/72</a> )
status	yes	"current" only (HL7 supports superseded and entered-in-error as well)
content	yes	base64 encoded XHTML
author	no	
docStatus	no	"final" only (HL7 supports "preliminary" and "amended" as well)
description	no	title

### What gets removed from XHTML?

"Some sanitization is run on provided XHTML. For example: Applet, iframe, link, script, and style tags will be removed completely. Other tags (a, button, form, frame, frameset, input, object, option, select, textarea) may be removed but the text within will remain"