

Open Concept Lab

OCL setup in OpenMRS

- 1) Download omod from [link](#). We used 1.3.0 and 1.2.6 versions. Both worked fine with openMRS 2.1.6.
- 2) Upload the omod in Administration -> Modules (Manage Modules) -> Add or Upload Module -> choose the module and upload.

Administration ->Open Web Apps Module -> Manage Apps

OpenMRS

Home | Find/Create Patient | Dictionary | Reporting | Administration

Admin | Manage Apps | Settings

Open Web Apps Module

Upload App package:

Manage Apps:

Show 10 entries

Logo	Name	Developer	Version	Delete
	Open Concept Lab UI for OpenMRS OpenConceptLab module	AdamGrzybkowski	1.2.6- SNAPSHOT	
	Bed Management Admin UI Admin UI for the Bed Management module	sanishmaharjan	0.1.0	

Showing 1 to 2 of 2 entries

Administration -> Modules (Manage Modules)

Modules

NOTE: Adding, removing, or starting modules will restart OpenMRS, meaning that

[Add or Upgrade Module](#) [Check for Upgrades](#)

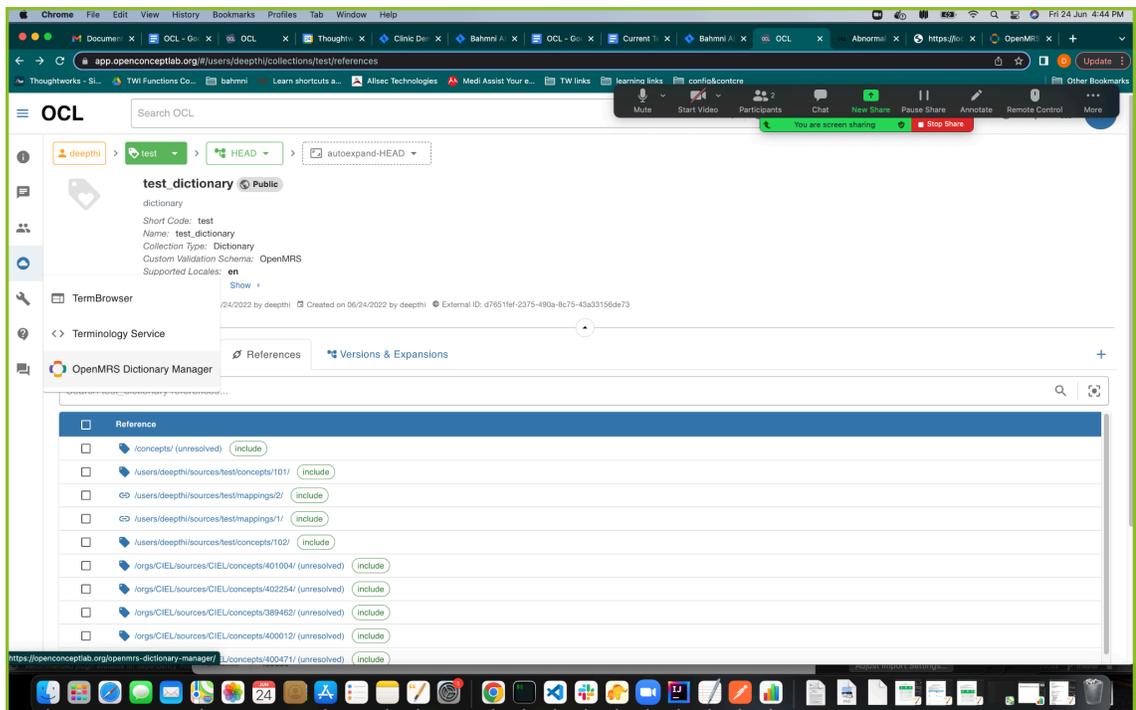
Action	Name	Version	Author
	Initializer	2.3.0- SNAPSHOT	Mekom Solutions
	Open Concept Lab Module	1.3.0	Nicholas Ingosi Magaja
	Bacteriology Module	1.2.0	Bahmni
	Reporting	1.16.0	Partners In Health

After uploading we can see the open concept lab module in both manage modules and manage apps section.

- 3) Click on **Open Concept Lab** in **manage app** section. It will take you to this <https://localhost/openmrs/owa/openconceptlab/index.html#/>
- 4) Click **Setup Subscription**
 - a) Enter **subscription url** like <https://api.demo.openconceptlab.org/users/deepthi/collections/TestDictionary/dic-0.7/>
 - b) Enter **token** which is in [ocl](#) / [openmrs](#) profile **API Token**. Both are the same anyways.
 - c) Click on **Save changes**.
- 5) Then Click **Import from subscription server**. This will import our concepts into openmrs.

Sign Up flow

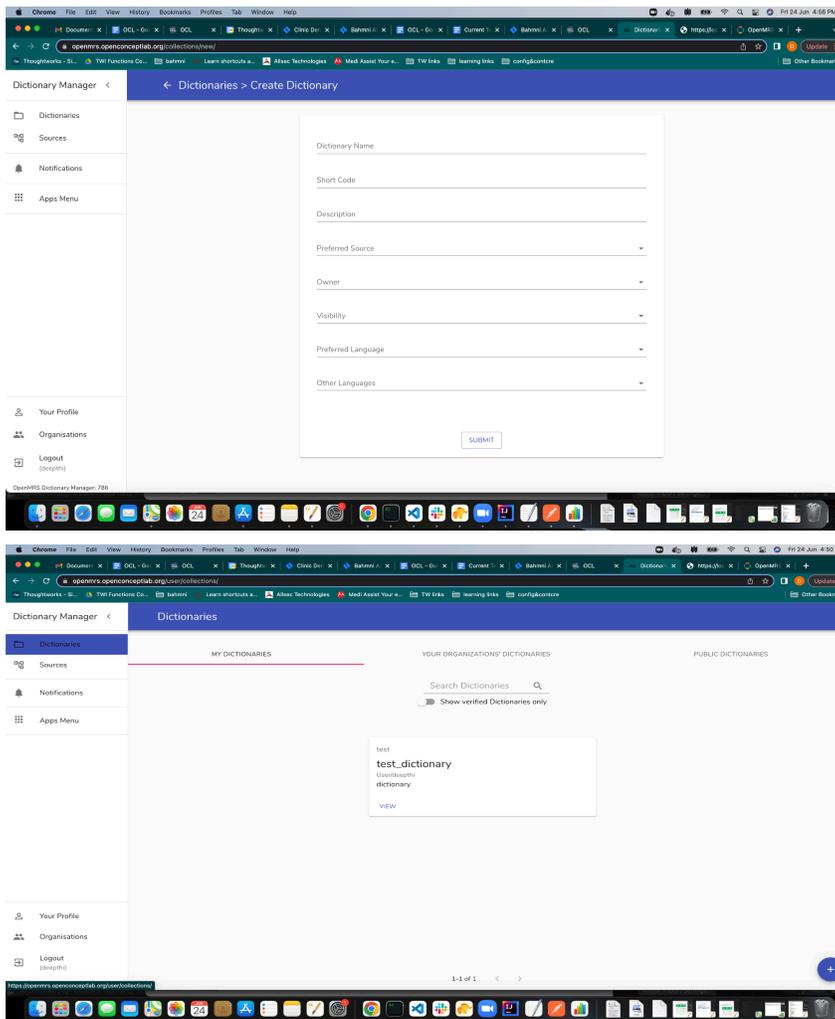
- Sign up for **OCL** here→<https://app.openconceptlab.org/>. This same credentials is enough for the **openmrs ocl** too→ <https://openmrs.openconceptlab.org/>
- Navigate to the tool menu on the left side of the home screen. Click on the **OpenMRS Dictionary Manager** which will redirect you to this <https://openmrs.openconceptlab.org/>



- So these two links <https://app.openconceptlab.org/> and <https://openmrs.openconceptlab.org/> are inter-related. Changes made in the openmrs ocl link gets reflected in the app ocl link and also vice-versa.

Creating a dictionary in OCL

- Navigate to the Dictionary in the menu on the left side and click on the + symbol at the right-side bottom of the page. Fill in the details and submit the form to create a new dictionary.

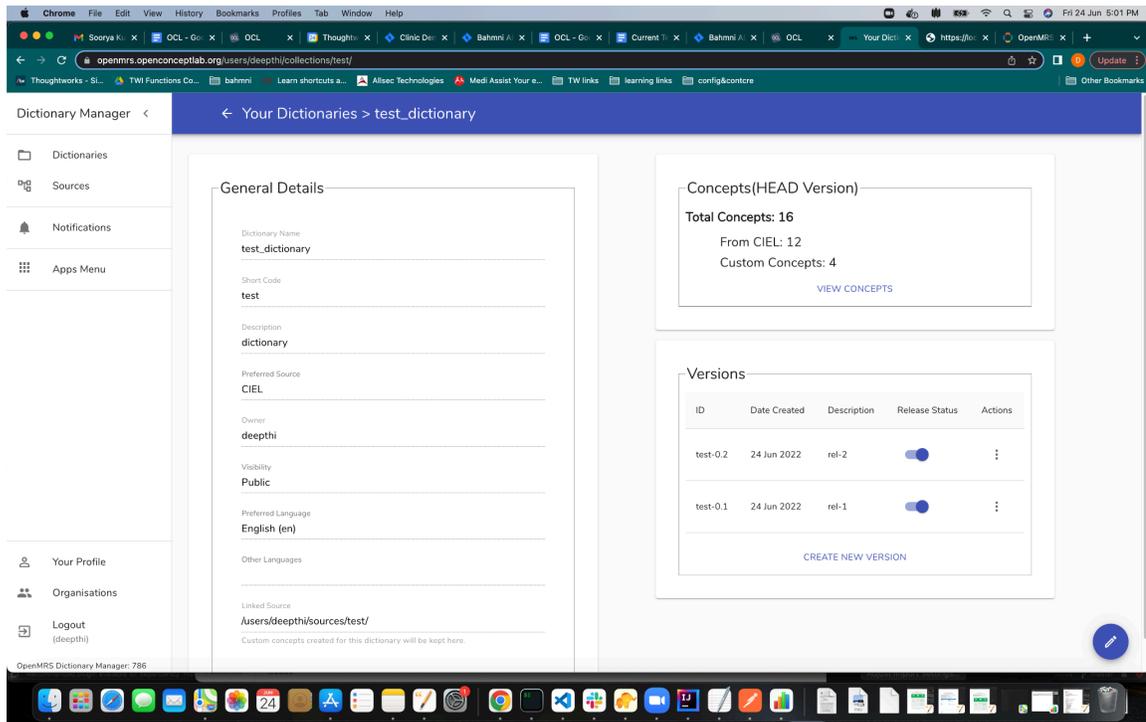


Creating concepts in OCL

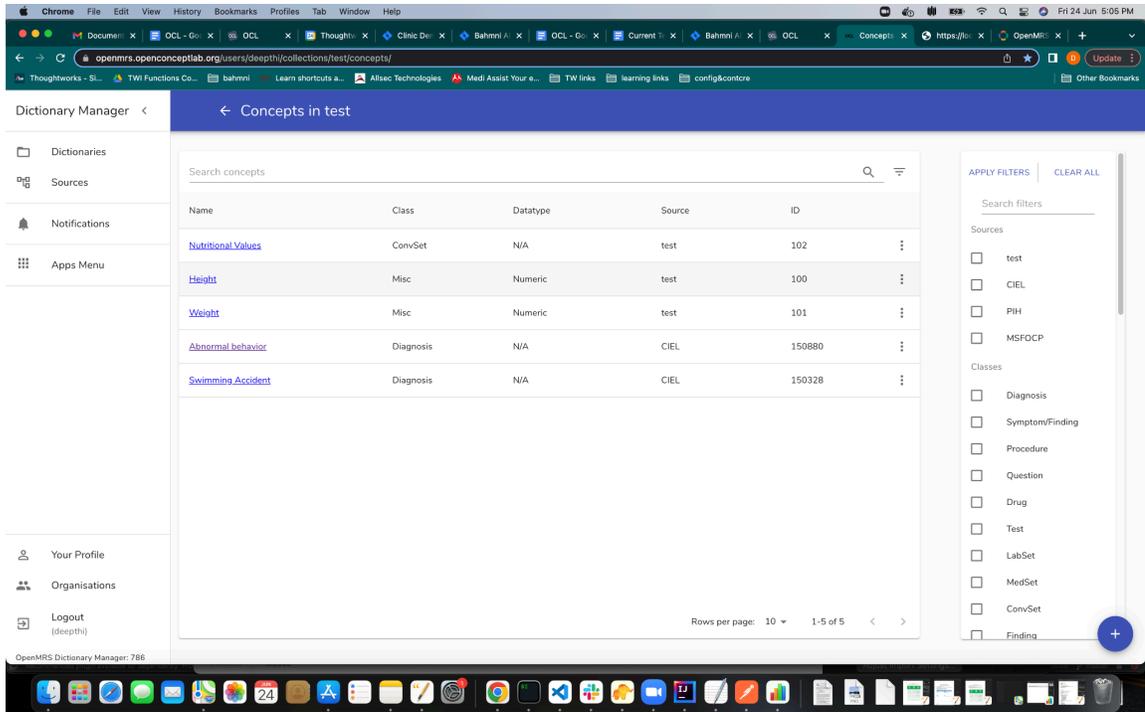
- Concepts can be created in two ways
 - 1) Custom concepts
 - 2) Import from existing Concepts

- a) Pick Concepts (We have to select one by one)
- b) Add bulk concepts (We have to provide correct ID to import concept)

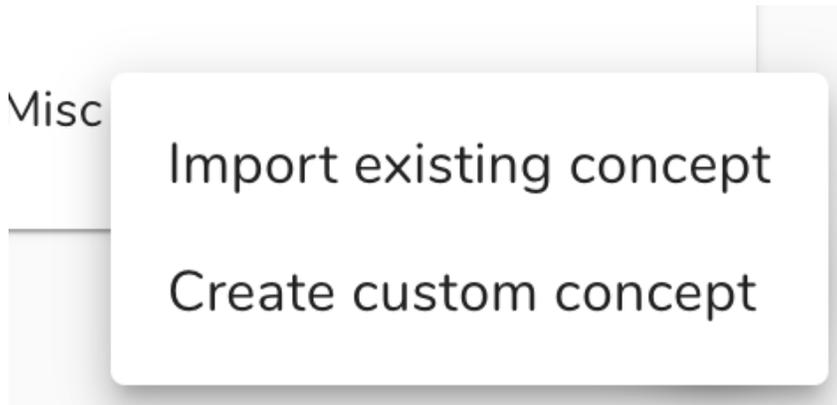
- Click on **View dictionary**



- Now click on **View concepts** in concepts section the below screen appears. Click on the **+** icon at the right bottom to create concepts.



- Now you will be able to see the options below. Choose **Create Custom Concept**



- Choose any **concept class**

Diagnosis Concept

Symptom/Finding Concept

Procedure Concept

Question Concept

Drug Concept

Test Concept

LabSet Concept

MedSet Concept

ConvSet Concept

Other kind

- Fill in the **Create Concept form** and give **Submit** it will create the concept and you can see them in the **Concept Dashboard**

← Create concept

Concept Details

OpenMRS UUID
f2e5b674-0a24-4126-9e73-a4a60d06441c 

OCL ID

Class

Datatype
N/A

Names

Name	Type	Language	Preferred in language	
<input type="text"/>	(Fully Specified) <input type="text"/>	English (en) <input type="text"/>	Yes <input type="text"/>	

Descriptions

Description	Language	Preferred in language
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- Similarly we can create concept from **Import existing concept**

a) By Picking Concepts

← Import existing concept from CIEL SWITCH SOURCE (CURRENTLY CIEL)

1 selected +

Name	Class	Datatype	Source	ID
<input type="checkbox"/> Queensland fever	Diagnosis	N/A	CIEL	158615
<input type="checkbox"/> Puerperal Fever	Diagnosis	N/A	CIEL	113511
<input type="checkbox"/> Tick-Borne Fever	Diagnosis	N/A	CIEL	112373
<input type="checkbox"/> Mosquito-Borne Fever	Diagnosis	N/A	CIEL	115681
<input checked="" type="checkbox"/> Malarial Fever	Diagnosis	N/A	CIEL	116125
<input type="checkbox"/> Grain Fever	Diagnosis	N/A	CIEL	139297
<input type="checkbox"/> Ephemeral Fever	Diagnosis	N/A	CIEL	121039
<input type="checkbox"/> Chikungunya Fever	Diagnosis	N/A	CIEL	120742
<input type="checkbox"/> Streptobacillary Fever	Diagnosis	N/A	CIEL	125825
<input type="checkbox"/> Wesselsbron Fever	Diagnosis	N/A	CIEL	122873

We can pick the concept and click the + icon in top right corner

We can choose the source like CIEL, MSF, etc

APPLY FILTERS | CLEAR ALL

Search filters

Classes

- Diagnosis
- Symptom/Finding
- Procedure
- Question
- Drug
- Test
- LabSet
- MedSet
- ConvSet
- Finding
- Anatomy
- Misc
- Symptom
- Specimen
- Misc-Order
- Workflow
- State

Rows per page: 10 | 1 - 10 of 160

b) By Bulk uploading Concepts

← Add concepts in bulk from CIEL SWITCH SOURCE (CURRENTLY CIEL)

Please provide IDs for the CIEL concepts to add. IDs should be separated with a space, comma or new lines. For example, you can copy and paste from a spreadsheet column. e.g 1000, 1001, 1002.

1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007

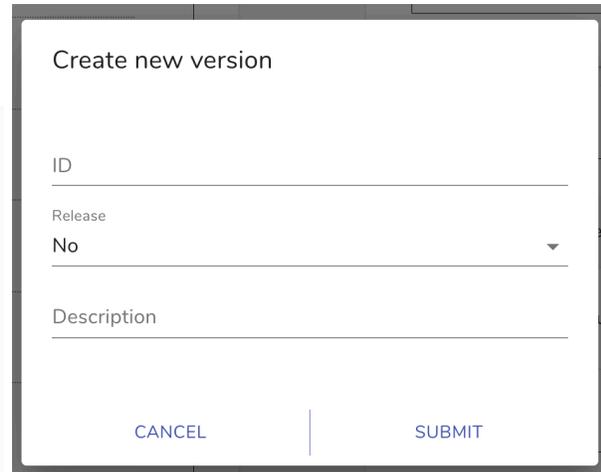
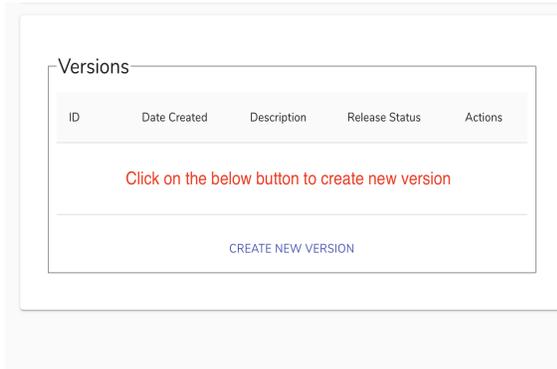
We can choose the concept source like CIEL, MSF, etc

Add concept ID's that are needed to be imported from the specific source

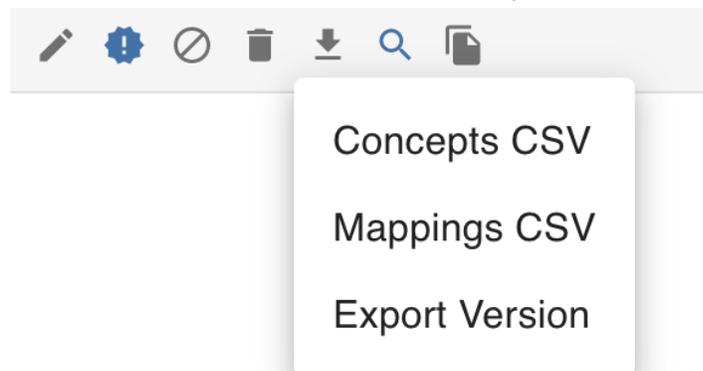
ADD CONCEPTS

Create a version

- Go to your dictionary dashboard. Click **Create New Version**. Fill the form and create version.



- Also we need to go to this <https://app.openconceptlab.org/> ,
 - Go to **dictionary**
 - Go to **versions & expansions**
 - Click on **Export Version**
 - Click on **Queue Export** (This step is important, then only we will be able to see concepts in our openmrs view dictionary)



Note: A version has to be created, so that we can use that subscription url in our openmrs page to import these concept collection

Openmrs_INITIALIZER:

We are able to use openmrs initializer for importing these ocl concepts into our bahmni. We need to follow this [doc](#). We should not rename the zip file.

To import CIEL dictionary using initializer follow the below steps:

- Go to CIEL sources (<https://app.openconceptlab.org/#/orgs/CIEL/sources/CIEL/>)
- Click versions (<https://app.openconceptlab.org/#/orgs/CIEL/sources/CIEL/versions>)
- Click on the export version in recently released version
- You will get the below pop-up and 'Click here' to download the zip.
- Copy paste the zip in your OCL directory of initializer configuration folder.
- Then restart/start the openmrs.

CIEL > CIEL > HEAD

Columbia International eHealth Laboratory Public

Columbia International eHealth Laboratory Concept Dictionary

Source Type: Interface Terminology
Supported Locales: en
Contact: "Andrew S. Kanter (ask2164@cumc.columbia.edu)"
Autold Mapping ID: sequential

Last updated on 06/28/2022 by askanter Created on 03/29/2021 by ocladmin External ID: 249b13c8-72fa-4b96-8d3d-b4

Concepts Mappings Versions About

Source Version History

Version	Created on	Created by	Concepts	Mappings
CIEL > CIEL > [HEAD]			53,274	223,680
Columbia International eHealth Laboratory Concept Dictionary				
CIEL > CIEL > [v2022-05-21] Released	v2022-05-21	Created on 05/26/2022 by ocladmin	53,282	223,680
CIEL > CIEL > [v2022-03-19] Released	v2022-03-19		53,164	

Concepts CSV
Mappings CSV
Export Version

ppings Versions About

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D]

eHealth Labor

ocladmin

22-05-21] [i

ocladmin

22-03-19] [i Released

53,282 223,680

53,164

Export Source Version: CIEL / v2022-05-21

Please [Click here](#) to download the export.

OK

Concepts CSV
Mappings CSV
Export Version

Issues Faced:

- In OCL, we are not able to select class type as 'Image' for creating a concept.
- Bulk upload concept through csv.
- Facing issue with similar reference term for mapping multiple concepts with importing CIEL dictionary into bahmni. Created a jira card(<https://bahmni.atlassian.net/browse/BAH-2061>)

Questions:

- While creating a concept, we search for the concept name in OCL and we get a list of concepts from different sources. So how do we select a particular concept(exact match or similar results)? (For example: In searching for a **Patient Document** we got these results - Patient summary Document, Patient data Document, Patient transportation request Document, Patient safety report Document. Since there were not an exact match with the concept we wanted to create, so we created a custom concept)
- Should we look for a concept without mapping's, so that our concept(ui) hierarchy does not get disturbed. (For example: For this concept [link](#), should we use this along with the set member's or we can create custom concept)
- Is there CIEL only preferred source or anything else can be chosen.
- Our understanding towards Bahmni OCL account structure for concept handling.

CIEL → Bahmni → Bahmni India Distro

Fever → Fever → Fever (Common to Bahmni)

Referral Document → Referral Document → Referral Document (For Bahmni India Distro)

Solution for some issue we faced:

- 1) While trying to import CIEL concepts using **open concept lab omod** through Subscription-Url / Initializer in OpenMRS. We were getting this issue

Illegal mix of collations (latin1_swedish_ci,IMPLICIT) and (utf8_general_ci,COERCIBLE) for operation '='

```
ERROR - ImportTask$1.run(80) |2022-07-12T11:33:02,080| Failed to import concept org.openmrs.module.openconceptlab.client.OclConcept@525a3dfa[externalId=158856AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA]
org.openmrs.module.openconceptlab.importer.ImportException: Cannot import concept 158856AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA, tried:
Retrying import of concept 158856AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA after failure due to 'could not extract ResultSet'

Caused by: java.sql.SQLException: Illegal mix of collations (latin1_swedish_ci,IMPLICIT) and (utf8_general_ci,COERCIBLE) for operation '='
at com.mysql.jdbc.SQLException.createSQLException(SQLException.java:1086) ~[mysql-connector-java-5.1.28.jar:?]
```

Solution: It's an issue with the configuration of the database. Most likely what is happening is that our `connection.url` property in our `openmrs-runtime.properties` has something like this on the end: **`useUnicode=true&characterEncoding=UTF-8`**, which tells OpenMRS to connect to your database using **UTF-8** as the default encoding and unicode as the default collation; however, our database is setup to use the `latin1_swedish_ci` collation (which is the default for MySQL 5.x).

Using mysql.cnf file:

We *recommend* setting up your MySQL server to use **UTF-8** as the default character set and **`utf8_general_ci`** as the collation (the link has notes on how to set this up in `my.cnf`).

Using MySQL console:

To do this with an existing database, you need to run commands below

```
ALTER DATABASE openmrs CHARACTER SET = utf8;
ALTER DATABASE openmrs COLLATE = utf8_general_ci;
```

Using Docker-compose:

So in our case we are using docker-setup for our development purpose, so we added this line in `openmrsDb` service of `docker-compose.yml`

```
command: --character-set-server=utf8 --collation-server=utf8_general_ci
```

References:

- <https://wiki.openmrs.org/display/docs/Using+UTF-8+Characters> (Using UTF-8 Characters in OpenMRS)
- <https://www.youtube.com/watch?v=OkDM1OYRO3Y>
- <https://docs.openconceptlab.org/en/latest/>
- <https://talk.openmrs.org/t/ocl-and-connector-annoyances-and-problems/14633>
- <https://api.openconceptlab.org/orgs/CIEL/sources/CIEL/v2022-05-21/> (CIEL dictionary subscription URL)