

Collabera Library REST

The below details depict the usage for this component. Named as “Library”.

Requirements:

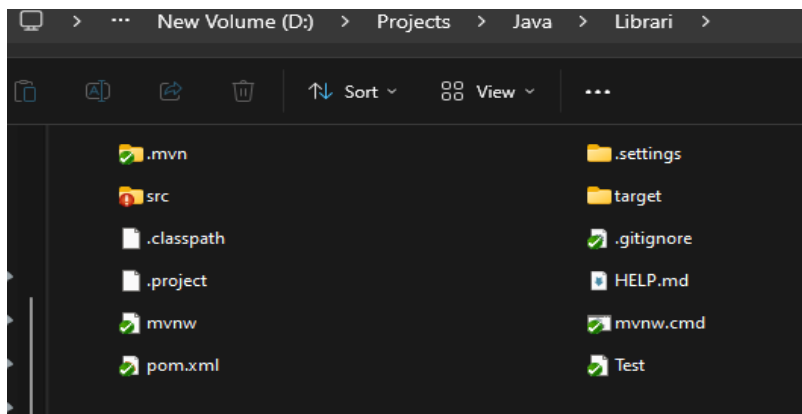
- Java SDK 17
- Apache Maven (3.9+)

Assumptions:

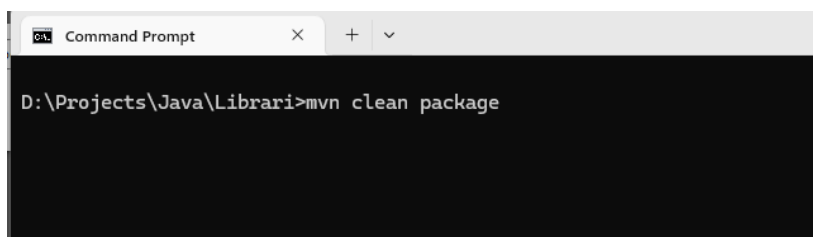
- This Demo component can run anywhere on a any OS or PC.
- This documentation is derived from running within a local machine. “localhost” is depicted on the samples.
- Runs on port 8888

Building from source:

- Check out from repository or download the source package zip archive.
- Unzip and proceed to the corresponding folder extracted.



- Open a command prompt. Go to the source package directory and build via maven.
 - mvn clean package.



```
Command Prompt - mvn clea x + v
D:\Projects\Java\Librari>mvn clean package
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.collabera.librari:Librari >-----
[INFO] Building Librari 0.0.1-SNAPSHOT
[INFO] from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- clean:3.2.0:clean (default-clean) @ Librari ---
[INFO] Deleting D:\Projects\Java\Librari\target
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ Librari ---
[INFO] Copying 1 resource from src\main\resources to target\classes
[INFO] Copying 1 resource from src\main\resources to target\classes
[INFO]
[INFO] --- compiler:3.13.0:compile (default-compile) @ Librari ---
[INFO] Recompiling the module because of changed source code.
[INFO] Compiling 23 source files with javac [debug parameters release 17] to target\classes
[INFO]
[INFO] --- resources:3.3.1:testResources (default-testResources) @ Librari ---
[INFO] skip non existing resourceDirectory D:\Projects\Java\Librari\src\test\resources
[INFO]
[INFO] --- compiler:3.13.0:testCompile (default-testCompile) @ Librari ---
[INFO] Recompiling the module because of changed dependency.
[INFO] Compiling 1 source file with javac [debug parameters release 17] to target\test-classes
```

```
Command Prompt x + v
2024-08-14T06:32:08.313+08:00 INFO 18964 --- [Librari] [ main] org.hibernate.Version : HHH0000412: Hibernate ORM core version 6.5.2.Final
2024-08-14T06:32:08.352+08:00 INFO 18964 --- [Librari] [ main] o.h.c.internal.RegionFactoryInitiator : HHH000026: Second-level cache disabled
2024-08-14T06:32:08.740+08:00 INFO 18964 --- [Librari] [ main] o.s.o.j.p.SpringPersistenceUnitInfo : No LoadTimeWeaver setup: ignoring JPA class transformer
2024-08-14T06:32:08.770+08:00 INFO 18964 --- [Librari] [ main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2024-08-14T06:32:08.968+08:00 INFO 18964 --- [Librari] [ main] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Added connection conn0: url=jdbc:h2:mem:Librari;user=sa
2024-08-14T06:32:08.970+08:00 INFO 18964 --- [Librari] [ main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start completed.
2024-08-14T06:32:09.005+08:00 WARN 18964 --- [Librari] [ main] org.hibernate.orm.deprecation : HHH9000025: H2Dialect does not need to be specified explicitly using 'hibernate.dialect' (remove the property setting and it will be selected by default)
2024-08-14T06:32:10.066+08:00 INFO 18964 --- [Librari] [ main] o.h.e.t.j.p.i.JtaPlatformInitiator : HHH0000489: No JTA platform available (set 'hibernate.transaction.jta.platform' to enable JTA platform integration)
2024-08-14T06:32:10.112+08:00 INFO 18964 --- [Librari] [ main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for persistence unit 'default'
2024-08-14T06:32:10.472+08:00 INFO 18964 --- [Librari] [ main] o.s.d.j.r.query.QueryEnhancerFactory : Hibernate is in classpath; If applicable, HQL parser will be used.
2024-08-14T06:32:11.454+08:00 INFO 18964 --- [Librari] [ main] o.s.b.a.h2.H2ConsoleAutoConfiguration : H2 console available at '/h2-console'. Database available at 'jdbc:h2:mem:Librari;user=sa'
2024-08-14T06:32:11.511+08:00 INFO 18964 --- [Librari] [ main] c.c.Librari.LibriApplicationTests : Started LibrariApplicationTests in 5.186 seconds (process running for 6.326)
2024-08-14T06:32:11.511+08:00 INFO 18964 --- [Librari] [ main] c.collabera.librari.LibriApplication : Initizliing H2 ...
2024-08-14T06:32:11.516+08:00 INFO 18964 --- [Librari] [ main] c.collabera.librari.LibriApplication : Loading default Books and Borrowers ...
2024-08-14T06:32:11.622+08:00 INFO 18964 --- [Librari] [ main] c.collabera.librari.LibriApplication : Loading complete...
Java HotSpot(TM) 64-Bit Server VM warning: Sharing is only supported for boot loader classes because bootstrap classpath has been appended
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 6.276 s --- in com.collabera.librari.LibriApplicationTests
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO]
[INFO] --- jar:3.4.2:jar (default-jar) @ Librari ---
[INFO] Building jar: D:\Projects\Java\Librari\target\Librari-0.0.1-SNAPSHOT.jar
[INFO]
[INFO] --- spring-boot:3.3.2:repackage (repackage) @ Librari ---
[INFO] Replacing main artifact D:\Projects\Java\Librari\target\Librari-0.0.1-SNAPSHOT.jar with repackaged archive, adding nested dependencies in BOOT-INF/.
[INFO] The original artifact has been renamed to D:\Projects\Java\Librari\target\Librari-0.0.1-SNAPSHOT.jar.original
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO]
[INFO] Total time: 11.946 s
[INFO] Finished at: 2024-08-14T06:32:13+08:00
[INFO]
```

- After compilation, kindly go to the “target” folder of the source base. This will contain the JAR file to activate the REST Demo.
- Kindly proceed the below command to start “Librari”
 - java -server -jar Librari-0.0.1-SNAPSHOT.jar

```
Command Prompt

D:\Projects\Java\Librari\target>dir
Volume in drive D is New Volume
Volume Serial Number is 042F-3E61

Directory of D:\Projects\Java\Librari\target

14/08/2024 06:32 AM <DIR> .
14/08/2024 06:32 AM <DIR> ..
14/08/2024 06:32 AM <DIR> classes
14/08/2024 06:32 AM <DIR> generated-sources
14/08/2024 06:32 AM <DIR> generated-test-sources
14/08/2024 06:32 AM 47,769,774 Librari-0.0.1-SNAPSHOT.jar
14/08/2024 06:32 AM 28,379 Librari-0.0.1-SNAPSHOT.jar.original
14/08/2024 06:32 AM <DIR> maven-archiver
14/08/2024 06:32 AM <DIR> maven-status
14/08/2024 06:32 AM <DIR> surefire-reports
14/08/2024 06:32 AM <DIR> test-classes
2 File(s) 47,798,153 bytes
9 Dir(s) 484,182,921,216 bytes free

D:\Projects\Java\Librari\target>
```

```
Command Prompt

D:\Projects\Java\Librari\target>java -server -jar Librari-0.0.1-SNAPSHOT.jar
```

```
Command Prompt - java -server

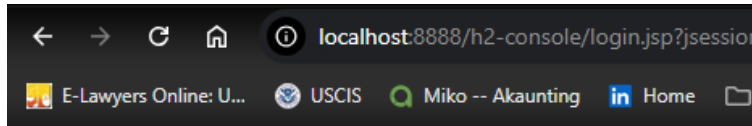
Librari 0.0.1-SNAPSHOT
Powered by Spring Boot 3.3.2
2024-08-14T06:39:24.979+08:00 INFO 25548 --- [Librari] [
ava\Librari\target\Librari-0.0.1-SNAPSHOT.jar started by User in D:\Projects\Java\Librari\target)
2024-08-14T06:39:24.993+08:00 INFO 25548 --- [Librari] [
main] c.collabera.Librari.LibrariApplication : Starting LibrariApplication v0.0.1-SNAPSHOT using Java 17.0.10 with PID 25548 (D:\Projects\
2024-08-14T06:39:25.004+08:00 INFO 25548 --- [Librari] [
main] s.d.r.c.RepositoryConfigurationDelegate : Bootstrapping Spring Data JPA repositories in DEFAULT mode.
2024-08-14T06:39:26.012+08:00 INFO 25548 --- [Librari] [
main] o.s.b.w.embedded.tomcat.TomcatWebServer : Finished Spring Data repository scanning in 81 ms. Found 2 JPA repository interfaces.
2024-08-14T06:39:26.718+08:00 INFO 25548 --- [Librari] [
main] o.apache.catalina.core.StandardEngine : Tomcat initialized with port 8888 (http)
2024-08-14T06:39:26.737+08:00 INFO 25548 --- [Librari] [
main] o.apache.catalina.core.StandardEngine : Starting service [Tomcat]
2024-08-14T06:39:26.737+08:00 INFO 25548 --- [Librari] [
main] o.a.c.c.C.[Tomcat].[localhost].[/] : Starting Servlet engine: [Apache Tomcat/10.1.26]
2024-08-14T06:39:26.797+08:00 INFO 25548 --- [Librari] [
main] w.s.c.ServletWebServerApplicationContext : Initializing Spring embedded WebApplicationContext
2024-08-14T06:39:26.800+08:00 INFO 25548 --- [Librari] [
main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1710 ms
2024-08-14T06:39:26.837+08:00 INFO 25548 --- [Librari] [
main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2024-08-14T06:39:27.065+08:00 INFO 25548 --- [Librari] [
main] com.zaxxer.hikari.pool.HikariPool : HikariPool-1 - Added connection conn0: url=jdbc:h2:mem:LibrariDb user=LSA
2024-08-14T06:39:27.067+08:00 INFO 25548 --- [Librari] [
main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start completed.
2024-08-14T06:39:27.080+08:00 INFO 25548 --- [Librari] [
main] o.s.b.a.h2.H2ConsoleAutoConfiguration : H2 console available at '/h2-console'. Database available at 'jdbc:h2:mem:LibrariDb'
2024-08-14T06:39:27.220+08:00 INFO 25548 --- [Librari] [
main] o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing PersistenceUnitInfo [name: default]
2024-08-14T06:39:27.299+08:00 INFO 25548 --- [Librari] [
main] org.hibernate.Version : HHH000012: Hibernate ORM core version 6.5.2.Final
2024-08-14T06:39:27.332+08:00 INFO 25548 --- [Librari] [
main] o.h.c.internal.RegionFactoryInitiator : HHH000026: Second-level cache disabled
2024-08-14T06:39:27.703+08:00 INFO 25548 --- [Librari] [
main] o.s.o.j.p.SpringPersistenceUnitInfo : No LoadTimeWeaver setup: ignoring JPA class transformer
2024-08-14T06:39:27.756+08:00 WARN 25548 --- [Librari] [
main] org.hibernate.orm.deprecation : HHH000025: H2Dialect does not need to be specified explicitly using 'hibernate.dialect' (C
move the property setting and it will be selected by default)
2024-08-14T06:39:28.538+08:00 INFO 25548 --- [Librari] [
platform integration)
2024-08-14T06:39:28.570+08:00 INFO 25548 --- [Librari] [
main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for persistence unit 'default'
2024-08-14T06:39:28.894+08:00 INFO 25548 --- [Librari] [
main] o.s.d.j.r.query.QueryEnhancerFactory : Hibernate is in classpath. If applicable, HQL parser will be used.
2024-08-14T06:39:29.794+08:00 INFO 25548 --- [Librari] [
main] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port 8888 (http) with context path '/'
2024-08-14T06:39:29.817+08:00 INFO 25548 --- [Librari] [
main] c.collabera.Librari.LibrariApplication : Started LibrariApplication in 5.404 seconds (process running for 5.891)
2024-08-14T06:39:29.824+08:00 INFO 25548 --- [Librari] [
main] c.collabera.Librari.LibrariApplication : Initializing H2 ...
2024-08-14T06:39:29.825+08:00 INFO 25548 --- [Librari] [
main] c.collabera.Librari.LibrariApplication : Loading default Books and Borrowers ...
2024-08-14T06:39:29.932+08:00 INFO 25548 --- [Librari] [
main] c.collabera.Librari.LibrariApplication : Loading complete...
```

Persistence Layer

An embedded H2 database was coupled within the REST demo. This particular is to have a running component as it is.

Access the H2 Database thru browser

- Ensure that “Librari” is executed and running. Kindly go to below address
 - <http://localhost:8888/h2-console>
- Browser will then display H2 console. (Password: demo123)



English Preferences Tools Help

Login

Saved Settings: Generic H2 (Embedded) [v]

Setting Name: Generic H2 (Embedded) [Save] [Remove]

Driver Class: org.h2.Driver

JDBC URL: jdbc:h2:mem:libraridb

User Name: isa

Password: []

[Connect] [Test Connection]

Auto commit [x] Max rows: 1000 [v] Auto complete Off [v] Auto select On [v] [?]

jdbc:h2:mem:libraridb

BOOK
BORROWER
INFORMATION_SCHEMA
Sequences
Users
H2 2.2.224 (2023-09-17)

Run Run Selected Auto complete Clear SQL statement:

Important Commands

[?]		Displays this Help Page
[?]		Shows the Command History
[Enter]	Ctrl+Enter	Executes the current SQL statement
[Enter]	Shift+Enter	Executes the SQL statement defined by the text selection
[Space]	Ctrl+Space	Auto complete
[X]		Disconnects from the database

- The tables as per depicted above are automatically generated by the component when it initially starts.

Application Layer:

Utilized within this component is a combination of SpringBoot + H2 for outright simplicity and depiction of its demonstrational intent. All enterprise requisites were not of inclusion.

Main response entity objects are of the ff:

1. Message Value object → This is a return object for outlining the response.
2. Book → This is a return object for outlining the book response
3. Borrower → This is a return object for outlining the borrower response
4. Books → This is a return object for outlining a collection of books response
5. Borrowers → This is a return object for outlining a collection of borrowers response

API Reference:

We have eight endpoints of utilization simplified for this demonstration:

- Locate Book
- Locate Borrower
- Fetch Books
- Fetch Borrowers
- Register Book
- Register Borrower
- Assign Book to Borrower
- Release Book from Borrower

Locate Book:

- Endpoint: <http://localhost:8888/book/locate>
- Method: POST
- Parameter: bookid (String)
- Response Sample

```
{
  "bookid": "1723597326348",
  "isbn": "978-2-39-898420-0",
  "title": "Little Fires Everywhere",
  "active": 0,
  "createdate": "2024-08-14T01:02:06.348+00:00",
  "author": "Celeste Ng",
  "borrower": null
}
```

Locate Borrower:

- Endpoint: <http://localhost:8888/borrower/locate>
- Method: POST
- Parameter: username (String)
- Response

```
{
  "id": 1,
  "username": "mmayor",
  "firstname": "Michael",
  "lastname": "Michael",
  "active": 1,
  "createdate": "2024-08-14T01:02:06.462+00:00",
  "email": "mmayor@abc123.com"
}
```

Fetch Books:

- Endpoint: <http://localhost:8888/book/listing>
- Method: GET
- Parameter: N/A
- Response

```
{
  "bookList": [
    {
      "bookid": "1723597326348",
      "isbn": "978-2-39-898420-0",
      "title": "Little Fires Everywhere",
      "active": 0,
      "createdate": "2024-08-14T01:02:06.348+00:00",
      "author": "Celeste Ng",
      "borrower": null
    },
    {
      "bookid": "1723597326451",
      "isbn": "978-2-49-8943980-0",
      "title": "One by One",
      "active": 0,
      "createdate": "2024-08-14T01:02:06.451+00:00",
      "author": "Ruth Ware",
      "borrower": null
    },
    {
      "bookid": "1723597326459",
      "isbn": "978-2-49-8943980-0"
    }
  ]
}
```

Fetch Borrowers:

- Endpoint: <http://localhost:8888/borrower/listing>
- Method: GET
- Parameter: N/A
- Response

```

{
  "borrowerlist": [
    {
      "id": 1,
      "username": "mmayor",
      "firstname": "Michael",
      "lastname": "Michael",
      "active": 1,
      "createdate": "2024-08-13T21:53:03.504+00:00",
      "email": "mmayor@abc123.com"
    },
    {
      "id": 2,
      "username": "svai",
      "firstname": "Steve",
      "lastname": "Steve",
      "active": 1,
      "createdate": "2024-08-13T21:53:03.506+00:00",
      "email": "svai@hotmail.com"
    }
  ]
}

```

Register Book:

- Endpoint: <http://localhost:8888/book/register>
- Method: POST
- Parameter: bookTitle,bookAuthor
- Response

```

{
  "reference": "Success",
  "referenceContent": "978-4-9-324521-0",
  "referenceDetail": "Book: 1723597824521--Author: John Bonham Saved ..",
  "date": "2024-08-14T01:10:24.521+00:00"
}

```

Register Borrower:

- Endpoint: <http://localhost:8888/borrower/register>
- Method: POST
- Parameter: username,firstname,lastname,email
- Response

```

{
  "reference": "Success",
  "referenceContent": "gharrison",
  "referenceDetail": "FirstName: George--LastName: Harrison Saved .",
  "date": "2024-08-14T01:12:32.383+00:00"
}

```

Assign Book to Borrower:

- Endpoint: <http://localhost:8888/couple/assign>
- Method: POST
- Parameter: username,bookid
- Response

```
{
  "reference": "Success",
  "referenceContent": "The Guest List",
  "referenceDetail": "Book: The Guest List--Borrower: mmayor Assignment Complete!",
  "date": "2024-08-14T01:19:44.865+00:00"
}
```

Release Book from Borrower:

- Endpoint: <http://localhost:8888/couple/release>
- Method: POST
- Parameter: username,bookid
- Response

```
{
  "reference": "Success",
  "referenceContent": "The Guest List",
  "referenceDetail": "Book: The Guest List--Borrower: mmayor Assignment Released. Book Available once more!",
  "date": "2024-08-14T01:24:01.688+00:00"
}
```