Part 3 Assignment 1 – Spring MVC Core Features

Brett Bloethner

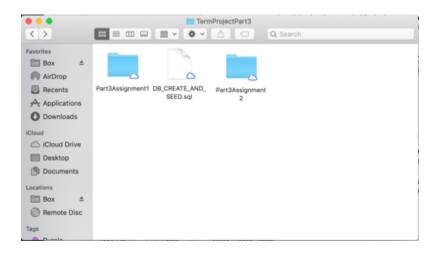
Notes on Term Project Part 3 Assignment 1

- I originally thought the assignment called for 2 i18n languages. So I have both French and Spanish in the web app.
- I added Delete book functionality to hopefully make up for some extra points I could possibly loose elsewhere in the assignment. The delete functionality was implemented with a hidden form method field and a hidden form method field web filter.
- I opted to use Java configurations instead of XML configurations. I followed the text books example when implementing the Java configurations.

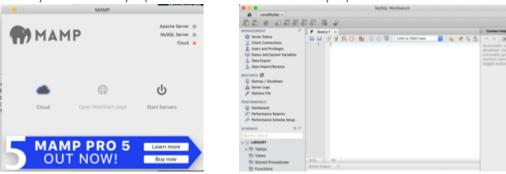
STARTING UP TERM PROJECT PART 3 ASSIGNMENT 1

1. Download the project zip file and unzip the files to a familiar location.

There should be 3 items in the unzipped folder. Two project folders for Term Project Part 3, one for Assignment 1 and one for Assignment 2. These both will run independently of each other. The DB_CREATE_AND_SEED.sql file can be used to create and seed the database needed for both assignments. For this part of the term project, it's not necessary to recreate the database between grading each of the two assignments.



2. Start your local MySql server and console or MySql console tool



In the context of this documentation. I'm using MAMP to run my local MySql server and MySql Workbench to execute queries on that local server.

3. Create a database with the correct username and password

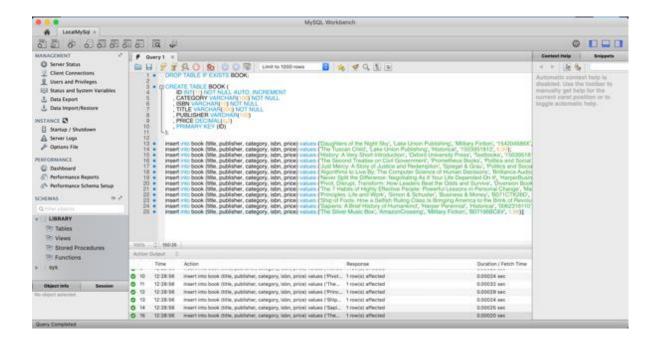
Create a local database using the database parameters specified by the application configuration and pictured below...

```
// configure database connection
@Sean(destroyMethod = "close")
public DataSource dataSource() {
    BusicDataSource dataSource = new BasicDataSource();
    dataSource.setDriverClassName("com.mysql.jdbc.Driver");
    dataSource.setUsername("e57");
    dataSource.setUsername("e57");
    dataSource.setPassword("password");
    dataSource.setTestOnBetrow(true);
    dataSource.setTestOnBeturn(true);
    dataSource.setTestOnBeturn(true);
    dataSource.setTineBetweenEvictionRunsMillis(1800000);
    dataSource.setNumTestsPerFvictionRun(3);
    dataSource.setNumTestsPerFvictionRun(3);
    dataSource.setMinEvictableIdleTimeMillis(1800000);
    return dataSource;
}
```

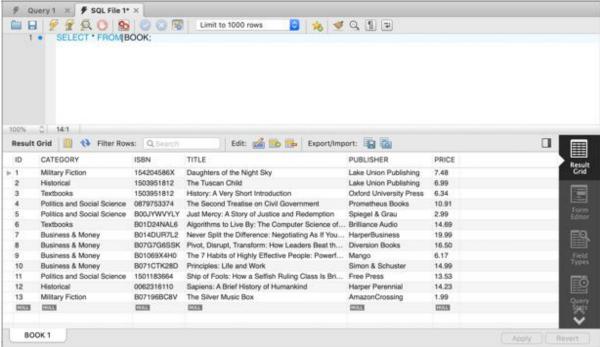
The database should accessible at "localhost:8889/LIBRARY"
The database username should be "e57"
The database password should be "password"

4. Load the test schema and data into the database

Copy the sql query from the DB_CREATE_AND_SEED.sql file located at the root of the submitted zip file and execute that against you MySql server in MySql Workbench.



This will create the Book table and it will also insert 13 books into the book table. See the query for book table data below...

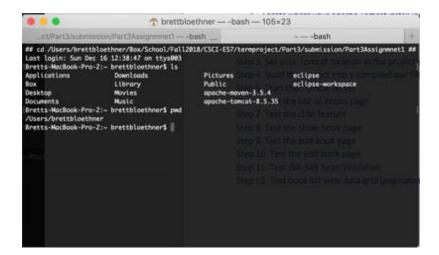


You database should now be ready to go.

5. Locate where your Apache Tomcat install location is

Locate where your Apache Tomcat installation location is, you'll need this to start Tomcat and to tell the app where to copy its .war file after it compiled. Notice on my machine Tomcat is located in my user folder at

/Users/brettbleothner/apache-tomcat-8.5.35



6. Start Apache Tomcat

Navigate into the bin folder inside your Apache Tomcat folder and run the **startup.sh** script to start Tomcat. The consoles response should look similar to the image below. You might have to run startup.sh with sudo, in my case the command is **sudo**./startup.sh

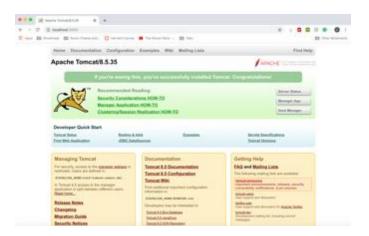
```
bin — -bash — 105×25
                                                                           ~/apache-tomcat-8.5.35/bin -- -bash
Bretts-MacBook-Pro-2:apache-tomcat-8.5.35 brettbloethner$ ls
BUILDING.txt NOTICE RUNNING.txt lib
CONTRIBUTING.md README.md
                                                             logs
                   RELEASE-NOTES conf
Bretts-MacBook-Pro-2:apache-tomcat-8.5.35 brettbloethner$ cd bin
Bretts-MacBook-Pro-2:bin brettbloethner$ ls
 cootstrap.jar
                                                                                 startup.sh
catalina-tasks.xml
catalina.bat
                                        digest.sh
                                                                                 tomcat-native.tar.gz
catalina.sh
                                        setclasspath.bat
                                                                                 tool-wrapper.bat
       ns-daemon-native.tar.gz
                                        setclasspath.sh
 configtest.bat
                                        shutdown, sh
configtest.sh
                                        startup.bat
 retts-MacBook-Pro-Z:bin brettbloethner$ sudo ./startup.sh
Using CATALINA_BASE: /Users/brettbloethner/apache-tomcat-8.5.35
Using CATALINA_HOME: /Users/brettbloethner/apache-tomcat-8.5.35
Using CATALINA_TMPDIR: /Users/brettbloethner/apache-tomcat-8.5.35/temp
Using JRE_HOME: /Library/Java/JavaVirtualMachines/jdk-10.0.2.jdk/Contents/Home
Using CLASSPATH: /Users/brettbloethner/apache-tomcat-8.5.35/bin/bootstrap.jar:/Users/brettbloethner/
Using CLASSPATH:
 apache-tomcat-8.5.35/bin/tomcat-juli.jar
    cat started.
 retts-MacBook-Pro-2:bin brettbloethner$
```

Notice the prompt saying "Tomcat Started"

7. Test that Apache Tomcat is running

Tomcat should now be running with its default landing page at localhost:8080. To confirm Tomcat is running and serving pages properly, use google chrome to visit

localhost:8080



If you see a webpage similar to the one above, then you've successfully started Apache Tomcat.

8. Set the war file build location in the project pom.xml file

Tomcat serves webapp .war files that are in its "webapps" folder located in {your_tomcat_folder_path}/webapps. In order to get this app to copy its compiled .war file to this location, the pom.xml file needs to be reconfigured. You can access the pom.xml file for Term Project Part 3 Assignment 1 in the Part3Assignment1 folder.

Open this file in an editor and change the **outputDirectory** tag to match the location of your Tomcat webapps folder. In this case my Tomcat webapps folder is located at **/Users/brettbloethner/apache-tomact-8.5.35/webapps/**

9. Build Term Project Part 3 Assignment 1

Navigate to the project directory for Term Project Part 3 Assignment 1 (folder named **Part3Assignment1** in the unzipped folder). The directory should look something like below.

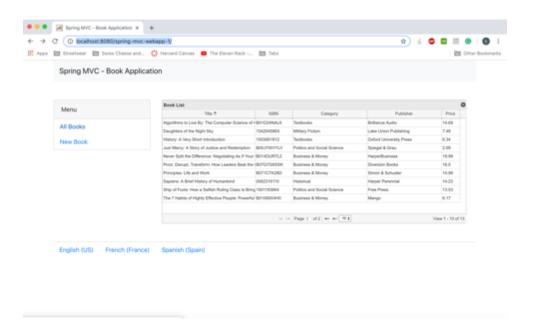
```
| Bretts-MacBook-Pro-2:TermProjectPart3 brettbloethner$ | s
| DB_CREATE_AND_SEED.sql Part3Assignment1 Part3Assignment2 |
| Bretts-MacBook-Pro-2:TermProjectPart3 brettbloethner$ cd Part3Assignment1 |
| Bretts-MacBook-Pro-2:Part3Assignment1 brettbloethner$ ls
| REACNE.md | spring-mvc-webapp-1.iml -$ring-mvc-webapp-1.docx |
| pom.xml | src |
| spring-mvc-webapp-1.docx | target |
| Bretts-MacBook-Pro-2:Part3Assignment1 brettbloethner$ |
```

Build the project into a .war file and have it copied to the Tomcat web app directory by running the following maven task and your output should look similar to the below image.

mvn compile war:war

10. View the App in Chrome

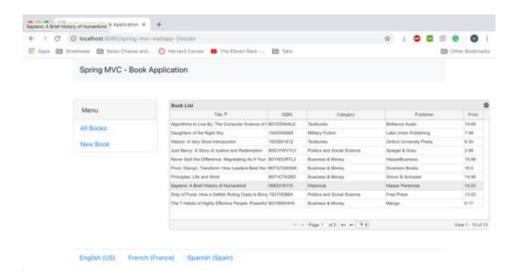
Test that Tomcat is successfully serving the application by visiting the app in google chrome. Visit the address **localhost:8080/spring-mvc-webapp-1/** in google chrome and you should come across the home page for the assignment 1 web app. It should list all of the books paginated and look similar to this.



TESTING TERM PROEJCT PART 3 ASSIGNMENT 1

1. Testing the list all books page

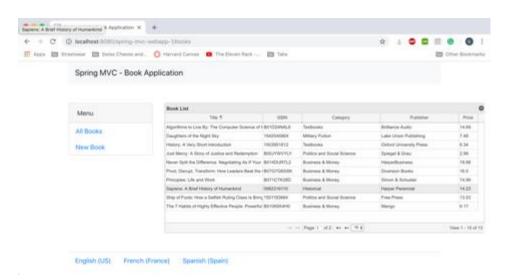
Visit the list all books page at localhost:8080/spring-mvc-webapp-1/ or localhost:8080/spring-mvc-webapp-1/books



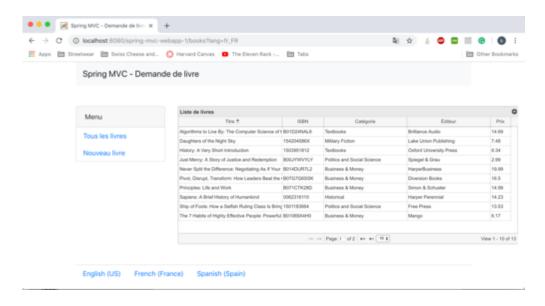
Notice how all 13 books are viewable on the home page. Use the data grid pagination feature to view the last 3 books since the data grid is set to only view 10 books in each page.

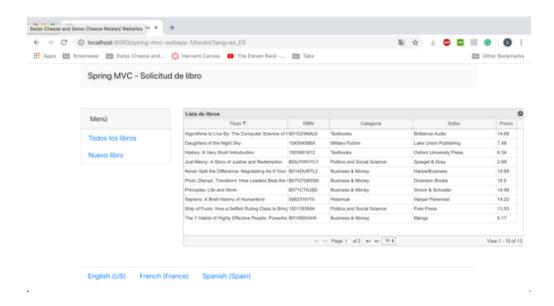
2. Test the i18n feature

Visit the list all books page at localhost:8080/spring-mvc-webapp-1/ or localhost:8080/spring-mvc-webapp-1/books



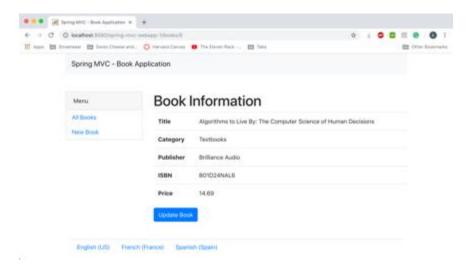
Click either "Spanish" or "French" in the web app footer. Notice how all of the text changes to that language and the url param "lang" is now set in order to activate the i18n messaging. Spanish and French are shown below.





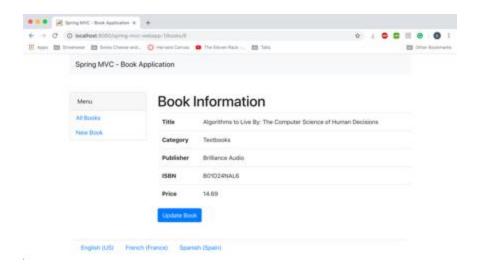
3. Test the show book page

Visit the list all books page at localhost:8080/spring-mvc-webapp-1/ or localhost:8080/spring-mvc-webapp-1/books Click on any book row in the data grid, this will bring you to the show book page for that book. Notice how the show book page shows all the details for the book and provides and Update Book button link.

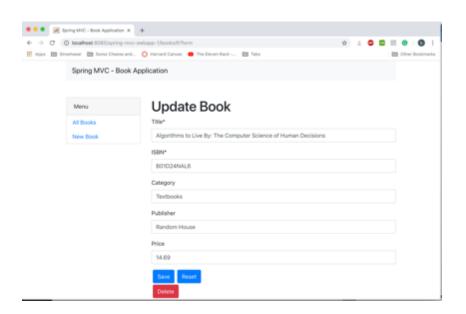


4. Test the edit book page

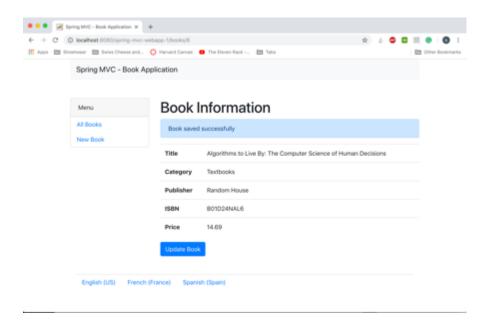
Visit the list all books page at localhost:8080/spring-mvc-webapp-1/ or localhost:8080/spring-mvc-webapp-1/books Click on any book row in the data grid, this will bring you to the show book page for that book.



Click on the **Update Book** button link. This will bring you to a form where you can change the books data and save it. Change some of the books information and press **Save**. Notice how I changed the Publisher from "Brilliance Audio" to "Random House"

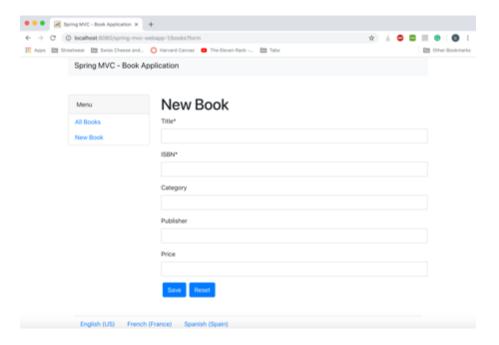


After saving, you should see the books new show page with the updated data. Along with a message showing that you successfully saved changes to this book.

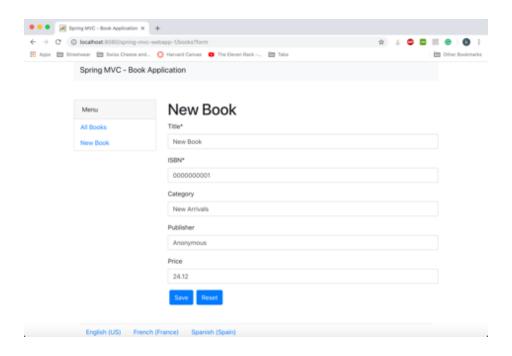


5. Test the add book page

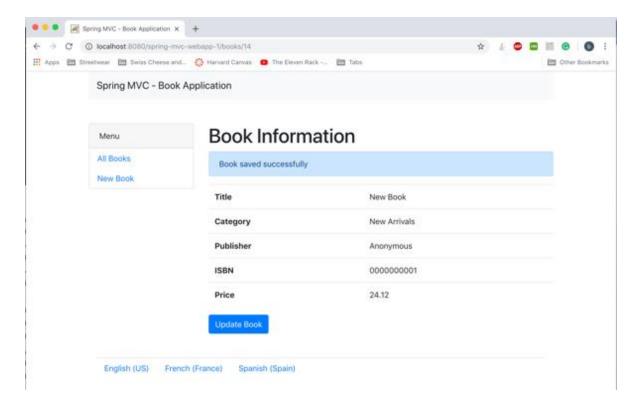
Visit the list all books page at localhost:8080/spring-mvc-webapp-1/ or localhost:8080/spring-mvc-webapp-1/books. Click on the link in the left hand sidebar that says New Book. This will bring you to a new book page with a new book form and it should look like the image below.

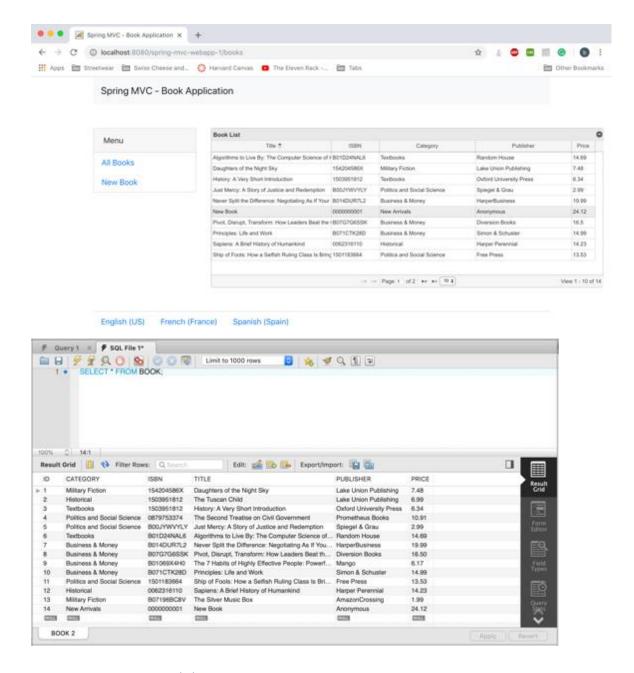


Fill in the form with information for a new book.



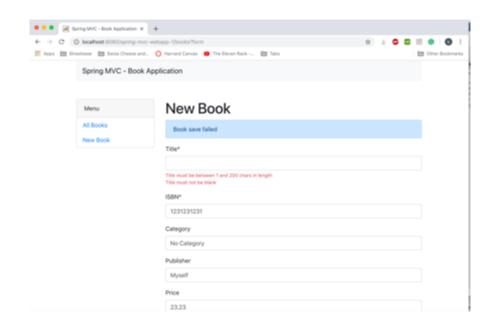
Click **Save**. Notice you're redirected to that new books show page which shows all of the new books data. Also, if you visit the book listing page, you'll see the new book in the data grid. An SQL query will also show you the new book has been added to the database.



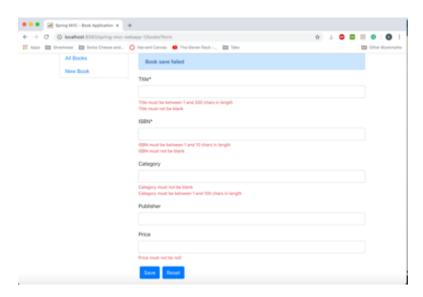


6. Test JSR-349 Bean Validation

Visit the list all books page at localhost:8080/spring-mvc-webapp-1/ or localhost:8080/spring-mvc-webapp-1/books Press the New Book link to be taken to a new book form page. Add some data into the form but leave the Title blank. Press Save. Notice how the save fails and an error is shown.



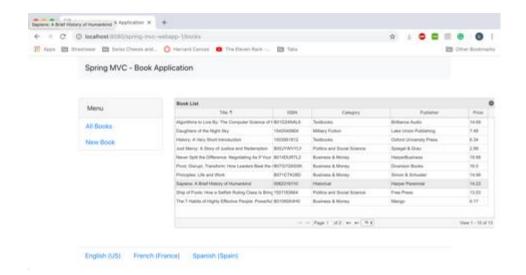
Now refresh the page and reset the form so that each field is empty, and press **Save**.



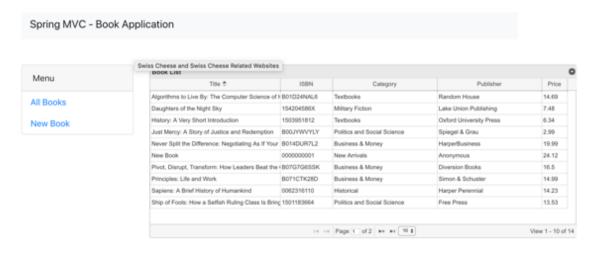
Notice now how all the possible validation errors are shown.

7. Test book list view data grid (pagination and sorting)

Visit the list all books page at localhost:8080/spring-mvc-webapp-1/ or localhost:8080/spring-mvc-webapp-1/books

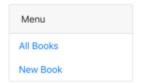


Notice the data grid. Try sorting the data grid by clicking the following parameters....



Click "Tittle" to sort by title

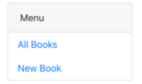
Spring MVC - Book Application



Title	ISBN *	Category	Publisher	Price
New Book	0000000001	New Arrivals	Anonymous	24.12
Sapiens: A Brief History of Humankind	0062316110	Historical	Harper Perennial	14.23
The Second Treatise on Civil Government	0879753374	Politics and Social Science	Prometheus Books	10.91
Ship of Fools: How a Selfish Ruling Class Is Bring	1501183664	Politics and Social Science	Free Press	13.53
The Tuscan Child	1503951812	Historical	Lake Union Publishing	6.99
History: A Very Short Introduction	1503951812	Textbooks	Oxford University Press	6.34
Daughters of the Night Sky	154204586X	Military Fiction	Lake Union Publishing	7.48
lust Mercy: A Story of Justice and Redemption	B00JYWVYLY	Politics and Social Science	Spiegel & Grau	2.99
The 7 Habits of Highly Effective People: Powerful	B01069X4H0	Business & Money	Mango	6.17
Never Split the Difference: Negotiating As if Your	B014DUR7L2	Business & Money	HarperBusiness	19.99

Click "ISBN" to sort by ISBN

Spring MVC - Book Application



Title	ISBN	Category	Publisher	Price
Never Split the Difference: Negotiating As If Your	B014DUR7L2	Business & Money	HarperBusiness	19.99
Pivot, Disrupt, Transform: How Leaders Beat the	B07G7G6SSK	Business & Money	Diversion Books	16.5
The 7 Habits of Highly Effective People: Powerful	B01069X4H0	Business & Money	Mango	6.17
Principles: Life and Work	B071CTK28D	Business & Money	Simon & Schuster	14.99
The Tuscan Child	1503951812	Historical	Lake Union Publishing	6.99
Sapiens: A Brief History of Humankind	0062316110	Historical	Harper Perennial	14.23
Daughters of the Night Sky	154204586X	Military Fiction	Lake Union Publishing	7.48
The Silver Music Bax	B07196BC8V	Military Fiction	AmazonCrossing	1.99
New Book	0000000001	New Arrivals	Anonymous	24.12
The Second Treatise on Civil Government	0879753374	Politics and Social Science	Prometheus Books	10.91

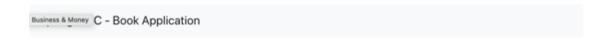
Click "Category" to sort by Category

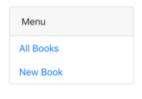
Spring MVC - Book Application



Title	ISBN	Category	Publisher 🕏	Price
The Silver Music Box	B07196BC8V	Military Fiction	AmazonCrossing	1.99
view Book	0000000001	New Arrivals	Anonymous	24.12
Pivot, Disrupt, Transform: How Leaders Beat the	B07G7G6SSK	Business & Money	Diversion Books	16.5
Ship of Fools: How a Selfish Ruling Class Is Bring	1501183664	Politics and Social Science	Free Press	13.53
Sapiens: A Brief History of Humankind	0062316110	Historical	Harper Perennial	14.23
lever Split the Difference: Negotiating As If Your	B014DUR7L2	Business & Money	HarperBusiness	19.99
Daughters of the Night Sky	154204586X	Military Fiction	Lake Union Publishing	7.48
The Tuscan Child	1503951812	Historical	Lake Union Publishing	6.99
he 7 Habits of Highly Effective People: Powerful	B01069X4H0	Business & Money	Mango	6.17
fistory: A Very Short Introduction	1503951812	Textbooks	Oxford University Press	6.34

Click "Publisher" to sort by Publisher

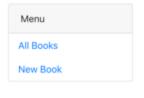




Title	ISBN	Category	Publisher	Price f
The Silver Music Box	B07196BC8V	Military Fiction	AmazonCrossing	1.99
Just Mercy: A Story of Justice and Redemption	B00JYWVYLY	Politics and Social Science	Spiegel & Grau	2.99
The 7 Habits of Highly Effective People: Powerful	B01069X4H0	Business & Money	Mango	6.17
History: A Very Short Introduction	1503951812	Textbooks	Oxford University Press	6.34
The Tuscan Child	1503951812	Historical	Lake Union Publishing	6.99
Daughters of the Night Sky	154204586X	Military Fiction	Lake Union Publishing	7.48
The Second Treatise on Civil Government	0879753374	Politics and Social Science	Prometheus Books	10.91
Ship of Fools: How a Selfish Ruling Class Is Bring	1501183664	Politics and Social Science	Free Press	13.53
Sapiens: A Brief History of Humankind	0062316110	Historical	Harper Perennial	14.23
Algorithms to Live By: The Computer Science of I	B01D24NAL6	Textbooks	Random House	14.69

Click "Price" to sort by Price

Spring MVC - Book Application

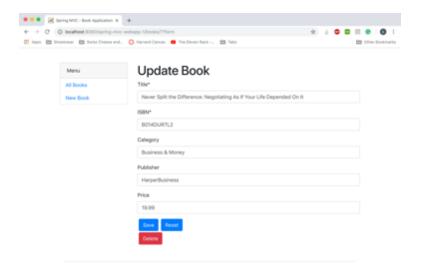




Click the right arrow at the bottom page controller to view Page 2. Picture is of page 2 of sorted by price.

8. Test Book Delete Functionality

Visit the list all books page at localhost:8080/spring-mvc-webapp-1/ or localhost:8080/spring-mvc-webapp-1/books. Click on any book row in the data grid, this will bring you to the show book page for that book. Notice how the show book page shows all the details for the book and provides an Update Book button link. Click Update Book to be taken to the update book page, notice how a Delete button is present underneath the Save and Reset buttons.



Click the **Delete** button and notice how you're redirected back to the main book listing page and a message is present confirming that the book has been deleted. An SQL query will also show the deleted book no longer exists in the database.

