Run this command java -jar .\target\book-publish-app.jar
edu.lix8.spring.hibernate.app.SpringHibernateApp

```
C:\CSCIE57\assignments\Assignment2.2>java -jar .\target\book-publish-app.jar edu.lix8.spring.hibernate.app
23:55:06,666  INFO                    org.hibernate.Version: 45 - HHH000412: Hibernate Core {[WORKING]}
23:55:06,669  INFO          org.hibernate.cfg.Environment: 211 - HHH000206: hibernate.properties not found
23:55:06,696  INFO org.hibernate.annotations.common.Version: 66 - HCANN000001: Hibernate Commons Annotations {5.0.1.Final}
23:55:07,200  INFO         org.hibernate.dialect.Dialect: 157 - HHH000400: Using dialect: org.hibernate.dialect.MySQL5Dialect
23:55:07,539  INFO internal.QueryTranslatorFactoryInitiator: 47 - HHH000397: Using ASTQueryTranslatorFactory
23:55:07,640  INFO .spring.hibernate.app.SpringHibernateApp: 24 - ============== Listing books without authors and categories ==============
23:55:07,856  INFO .spring.hibernate.app.SpringHibernateApp: 64 - Book{id=1, isbn='0764543857', title='Expert one-on-one J2EE Design and Development', price=59.99}

23:55:07,856  INFO .spring.hibernate.app.SpringHibernateApp: 65 - -----------------------------------------
23:55:07,856  INFO .spring.hibernate.app.SpringHibernateApp: 64 - Book{id=2, isbn='0321349807', title='The Java Programming Language', price=31.75}

23:55:07,856  INFO .spring.hibernate.app.SpringHibernateApp: 65 - -----------------------------------------
23:55:07,856  INFO .spring.hibernate.app.SpringHibernateApp: 64 - Book{id=3, isbn='0321349808', title='Head First Java', price=18.3}

23:55:07,856  INFO .spring.hibernate.app.SpringHibernateApp: 65 - -----------------------------------------
23:55:07,856  INFO .spring.hibernate.app.SpringHibernateApp: 64 - Book{id=4, isbn='0321349809', title='Murach Java Programming (5th Edition)', price=50.14}

23:55:07,857  INFO .spring.hibernate.app.SpringHibernateApp: 65 - -----------------------------------------
23:55:07,857  INFO .spring.hibernate.app.SpringHibernateApp: 64 - Book{id=5, isbn='0321127420', title='Patterns of Enterprise Application Architecture', price=52.49}

23:55:07,857  INFO .spring.hibernate.app.SpringHibernateApp: 65 - -----------------------------------------
23:55:07,857  INFO .spring.hibernate.app.SpringHibernateApp: 64 - Book{id=6, isbn='0321349524', title='The C Programming Language(2nd Edition)', price=31.83}
```

1. Initial content of the table

```
mysql> select * from category
    -> ;
+----+----------------+
| ID | NAME           |
+----+----------------+
|  1 | Java           |
|  2 | Design Patterns |
|  3 | C/C++          |
|  4 | Python         |
|  5 | Scala          |
|  6 | JavaScript     |
+----+----------------+
6 rows in set (0.00 sec)

mysql> select * from book;
+----+-------------+------------+------------------------------------------------+-------+
| ID | CATEGORY_ID | ISBN       | TITLE                                          | PRICE |
+----+-------------+------------+------------------------------------------------+-------+
|  1 |           1 | 0764543857 | Expert one-on-one J2EE Design and Development  | 59.99 |
|  2 |           1 | 0321349807 | The Java Programming Language                   | 31.75 |
|  3 |           1 | 0321349808 | Head First Java                                 |  18.3 |
|  4 |           1 | 0321349809 | Murach Java Programming (5th Edition)           | 50.14 |
|  5 |           2 | 0321127420 | Patterns of Enterprise Application Architecture | 52.49 |
|  6 |           3 | 0321349524 | The C Programming Language(2nd Edition)         | 31.83 |
|  7 |           3 | 0321349529 | C++ Primer(5th Edition)                         | 55.56 |
|  8 |           3 | 0321349528 | Murach C++ Programming                          |  59.5 |
|  9 |           4 | 0321349810 | Python Crash Course                             | 21.24 |
| 10 |           5 | 1935182706 | Scala in Depth                                  | 32.48 |
| 11 |           6 | 0321349819 | Eloquent JavaScript                             |    25 |
+----+-------------+------------+------------------------------------------------+-------+
11 rows in set (0.00 sec)

mysql> select * from author;
+----+------------+-----------+------------------------------------------------------------------------------------------------+
| ID | FIRST_NAME | LAST_NAME | DESCRIPTION                                                                                     |
+----+------------+-----------+------------------------------------------------------------------------------------------------+
|  1 | Rod        | Johnson   | an Australian computer specialist who created the Spring Framework and co-founded SpringSource  |
|  2 | Ken        | Arnold    | an American computer programmer well known as one of the developers of the 1980s               |
|  3 | Kathy      | Sierra    | She created the award-winning Head First programming book series that has sold over 1 million copies. |
|  4 | Joel       | Murach    | He has written extensively on a wide range of Java, .NET, web, and database technologies.       |
|  5 | Martin     | Fowler    | a British software developer, author and international public speaker on software development    |
|  6 | Brian      | Kernighan | a computer scientist who worked at Bell Labs alongside Unix creators                             |
|  7 | Stanley    | Lippman   | He has worked with Bjarne Stroustrup in Bell Laboratories during early stages of C++             |
|  8 | Eric       | Matthes   | He teaches high school math and science at a small school in southeast Alaska.                  |
|  9 | Josh       | Suereth   | a Staff Software Engineer at Google LLC                                                          |
| 10 | Marijn     | Haverbeke | a programmer and tech writer in Berlin                                                           |
| 11 | Martin     | Odersky   | a German computer scientist and professor of programming methods                                |
+----+------------+-----------+------------------------------------------------------------------------------------------------+
11 rows in set (0.00 sec)

mysql> select * from author_book;
+-----------+---------+
| AUTHOR_ID | BOOK_ID |
+-----------+---------+
|         1 |       1 |
|         2 |       2 |
|         3 |       3 |
|         4 |       4 |
|         5 |       5 |
|         6 |       6 |
|         4 |       7 |
|         7 |       8 |
|         8 |       9 |
|         9 |      10 |
|        11 |      10 |
|        10 |      11 |
+-----------+---------+
12 rows in set (0.00 sec)
```

## 2. find all books without authors and categories

```
23:25:32,117  INFO .spring.hibernate.app.SpringHibernateApp:  25 - ============== Listing books without authors and categories ==============
23:25:32,236  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=1, isbn='0764543857', title='Expert one-on-one J2EE Design and Development', price=59.99}

23:25:32,236  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,237  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=2, isbn='0321349807', title='The Java Programming Language', price=31.75}

23:25:32,237  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,237  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=3, isbn='0321349808', title='Head First Java', price=18.3}

23:25:32,238  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,238  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=4, isbn='0321349809', title='Murach Java Programming (5th Edition)', price=50.14}

23:25:32,238  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,239  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=5, isbn='0321127420', title='Patterns of Enterprise Application Architecture', price=52.49}

23:25:32,239  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,240  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=6, isbn='0321349524', title='The C Programming Language(2nd Edition)', price=31.83}

23:25:32,240  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,240  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=7, isbn='0321349529', title='C++ Primer(5th Edition)', price=55.56}

23:25:32,240  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,241  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=8, isbn='0321349528', title='Murach C++ Programming', price=59.5}

23:25:32,241  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,241  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=9, isbn='0321349810', title='Python Crash Course', price=21.24}

23:25:32,241  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,241  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=10, isbn='1935182706', title='Scala in Depth', price=32.48}

23:25:32,241  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
23:25:32,242  INFO .spring.hibernate.app.SpringHibernateApp:  69 - Book{id=11, isbn='0321349819', title='Eloquent JavaScript', price=25.0}

23:25:32,242  INFO .spring.hibernate.app.SpringHibernateApp:  70 - ------------------------------------------
```

## 3. find all books with authors and categories.

```
12:20:35,126  INFO .spring.hibernate.app.SpringHibernateApp:  28 - ============== Listing books with authors and categories ==============
12:20:35,168  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=1, isbn='0764543857', title='Expert one-on-one J2EE Design and Development', price=59.99}

12:20:35,174  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,176  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=1, first_name='Rod', last_name='Johnson', description='an Australian computer specialist who created the Spring Framework and co-founded SpringSource'}
12:20:35,176  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,176  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=2, isbn='0321349807', title='The Java Programming Language', price=31.75}

12:20:35,176  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,176  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=2, first_name='Ken', last_name='Arnold', description='an American computer programmer well known as one of the developers of the 1980s'}

12:20:35,176  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,176  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=3, isbn='0321349808', title='Head First Java', price=18.3}

12:20:35,177  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,177  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=3, first_name='Kathy', last_name='Sierra', description='She created the award-winning Head First programming book series that has sold over 1 million copies.'}
12:20:35,177  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,177  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=4, isbn='0321349809', title='Murach Java Programming (5th Edition)', price=50.14}

12:20:35,177  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,177  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=4, first_name='Joel', last_name='Murach', description='He has written extensively on a wide range of Java, .NET, web, and database technologies.'}
12:20:35,177  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,177  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=5, isbn='0321127420', title='Patterns of Enterprise Application Architecture', price=52.49}

12:20:35,178  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Design Patterns', id=2}
12:20:35,178  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=5, first_name='Martin', last_name='Fowler', description='a British software developer, author and international public speaker on software development'}
12:20:35,178  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,178  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=6, isbn='0321349524', title='The C Programming Language(2nd Edition)', price=31.83}

12:20:35,178  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='C/C++', id=3}
12:20:35,178  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=6, first_name='Brian', last_name='Kernighan', description='a computer scientist who worked at Bell Labs alongside Unix creators'}
12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=7, isbn='0321349529', title='C++ Primer(5th Edition)', price=55.56}

12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='C/C++', id=3}
12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=4, first_name='Joel', last_name='Murach', description='He has written extensively on a wide range of Java, .NET, web, and database technologies.'}
12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=8, isbn='0321349528', title='Murach C++ Programming', price=59.5}

12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='C/C++', id=3}
12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=7, first_name='Stanley', last_name='Lippman', description='He has worked with Bjarne Stroustrup in Bell Laboratories during early stages of C++'}
12:20:35,179  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=9, isbn='0321349810', title='Python Crash Course', price=21.24}

12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Python', id=4}
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=8, first_name='Eric', last_name='Matthes', description='He teaches high school math and science at a small school in southeast Alaska.'}

12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=10, isbn='1935182706', title='Scala in Depth', price=32.48}

12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Scala', id=5}
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=9, first_name='Josh', last_name='Suereth', description='a Staff Software Engineer at Google LLC'}
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=11, first_name='Martin', last_name='Odersky', description='a German computer scientist and professor of programming methods'}
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=11, isbn='0321349819', title='Eloquent JavaScript', price=25.0}

12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='JavaScript', id=6}
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=10, first_name='Marijn', last_name='Haverbeke', description='a programmer and tech writer in Berlin'}
12:20:35,180  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,181  INFO .spring.hibernate.app.SpringHibernateApp:  32 - ============== Listing a book with authors and category by book id ==============
12:20:35,191  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=10, isbn='1935182706', title='Scala in Depth', price=32.48}

12:20:35,193  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Scala', id=5}
12:20:35,194  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=9, first_name='Josh', last_name='Suereth', description='a Staff Software Engineer at Google LLC'}
12:20:35,194  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=11, first_name='Martin', last_name='Odersky', description='a German computer scientist and professor of programming methods'}
12:20:35,194  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
```

## 4. find a book with authors and category by book's ID.

```
12:20:35,181  INFO .spring.hibernate.app.SpringHibernateApp:  32 - ============== Listing a book with authors and category by book id ==============
12:20:35,191  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=10, isbn='1935182706', title='Scala in Depth', price=32.48}

12:20:35,193  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Scala', id=5}
12:20:35,194  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=9, first_name='Josh', last_name='Suereth', description='a Staff Software Engineer at Google LLC'}
12:20:35,194  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=11, first_name='Martin', last_name='Odersky', description='a German computer scientist and professor of programming methods'}
12:20:35,194  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
```

5. find all books by author id. Below are all books ay author id = 4

```
12:20:35,194  INFO .spring.hibernate.app.SpringHibernateApp:  35 - -------------- Listing all books with author id --------------
12:20:35,218  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=4, isbn='0321349809', title='Murach Java Programming (5th Edition)', price=50.14}

12:20:35,218  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,219  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=4, first_name='Joel', last_name='Murach', description='He has written extensively on a wide range of Java, .NET, web, and database techn
ologies.'}
12:20:35,219  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,219  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=7, isbn='0321349529', title='C++ Primer(5th Edition)', price=55.56}

12:20:35,219  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='C/C++', id=3}
12:20:35,219  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=4, first_name='Joel', last_name='Murach', description='He has written extensively on a wide range of Java, .NET, web, and database techn
ologies.'}
12:20:35,219  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
```

6. Create a new book with a new author(s) not persisted yet in your database. The book should belong to one of the category already persisted in your database. Save the book and the author(s) in the database.The screenshot below shows the saved book **Modern Java in Action**

```
12:20:35,219  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,219  INFO .spring.hibernate.app.SpringHibernateApp:  39 - -------------- Create a new book with new authors not yet persisted --------------
12:20:35,282  INFO B.spring.hibernate.dao.PublishingDaoImpl:  62 - Book saved with id: 12
12:20:35,403  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=1, isbn='0764543857', title='Expert one-on-one J2EE Design and Development', price=59.99}

12:20:35,403  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,404  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=1, first_name='Rod', last_name='Johnson', description='an Australian computer specialist who created the Spring Framework and co-founded
SpringSource'}
12:20:35,405  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,405  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=2, isbn='0321349807', title='The Java Programming Language', price=31.75}

12:20:35,405  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,405  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=2, first_name='Ken', last_name='Arnold', description='an American computer programmer well known as one of the developers of the 1980s'}

12:20:35,406  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,406  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=3, isbn='0321349808', title='Head First Java', price=18.3}

12:20:35,406  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,406  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=3, first_name='Kathy', last_name='Sierra', description='She created the award-winning Head First programming book series that has sold o
ver 1 million copies.'}
12:20:35,406  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,406  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=4, isbn='0321349809', title='Murach Java Programming (5th Edition)', price=50.14}

12:20:35,407  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,407  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=4, first_name='Joel', last_name='Murach', description='He has written extensively on a wide range of Java, .NET, web, and database techn
ologies.'}
12:20:35,407  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,408  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=5, isbn='0321127420', title='Patterns of Enterprise Application Architecture', price=52.49}

12:20:35,408  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Design Patterns', id=2}
12:20:35,408  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=5, first_name='Martin', last_name='Fowler', description='a British software developer, author and international public speaker on softwa
re development'}
12:20:35,408  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,408  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=6, isbn='0321349524', title='The C Programming Language(2nd Edition)', price=31.83}

12:20:35,409  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='C/C++', id=3}
12:20:35,409  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=6, first_name='Brian', last_name='Kernighan', description='a computer scientist who worked at Bell Labs alongside Unix creators'}
12:20:35,410  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,410  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=7, isbn='0321349529', title='C++ Primer(5th Edition)', price=55.56}

12:20:35,410  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='C/C++', id=3}
12:20:35,410  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=4, first_name='Joel', last_name='Murach', description='He has written extensively on a wide range of Java, .NET, web, and database techn
ologies.'}
12:20:35,410  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,410  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=8, isbn='0321349528', title='Murach C++ Programming', price=59.5}

12:20:35,410  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='C/C++', id=3}
12:20:35,410  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=7, first_name='Stanley', last_name='Lippman', description='He has worked with Bjarne Stroustrup in Bell Laboratories during early stages
of C++'}
12:20:35,411  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,411  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=9, isbn='0321349810', title='Python Crash Course', price=21.24}

12:20:35,411  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Python', id=4}
12:20:35,411  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=8, first_name='Eric', last_name='Matthes', description='He teaches high school math and science at a small school in southeast Alaska.'}

12:20:35,411  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,411  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=10, isbn='1935182706', title='Scala in Depth', price=32.48}

12:20:35,411  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Scala', id=5}
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=9, first_name='Josh', last_name='Suereth', description='a Staff Software Engineer at Google LLC'}
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=11, first_name='Martin', last_name='Odersky', description='a German computer scientist and professor of programming methods'}
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=11, isbn='0321349819', title='Eloquent JavaScript', price=25.0}

12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='JavaScript', id=6}
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=10, first_name='Marijn', last_name='Haverbeke', description='a programmer and tech writer in Berlin'}
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  66 - Book{id=12, isbn='0321349812', title='Modern Java in Action', price=48.18}

12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  68 - Category{name='Java', id=1}
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  70 - Author{id=12, first_name='Raoul-Gabriel', last_name='Urma', description='a PhD candidate in Computer Science at the University of Cambridge. He is
co-author of the book Java 8 in Action'}
12:20:35,412  INFO .spring.hibernate.app.SpringHibernateApp:  71 - ------------------------------------------
```

7. Below you see the tables after saving the new book with the author. Notice that the new book **Modern Java in Action** is added to the Book table and its author **Raoul-Gabriel Urma** is added to author table.

```
mysql> select * from category;
+----+-----------------+
| ID | NAME            |
+----+-----------------+
|  1 | Java            |
|  2 | Design Patterns |
|  3 | C/C++           |
|  4 | Python          |
|  5 | Scala           |
|  6 | JavaScript      |
+----+-----------------+
6 rows in set (0.00 sec)

mysql> select * from book;
+----+-------------+------------+-------------------------------------------------+-------+
| ID | CATEGORY_ID | ISBN       | TITLE                                           | PRICE |
+----+-------------+------------+-------------------------------------------------+-------+
|  1 |           1 | 0764543857 | Expert one-on-one J2EE Design and Development   | 59.99 |
|  2 |           1 | 0321349807 | The Java Programming Language                   | 31.75 |
|  3 |           1 | 0321349808 | Head First Java                                 |  18.3 |
|  4 |           1 | 0321349809 | Murach Java Programming (5th Edition)           | 50.14 |
|  5 |           2 | 0321127420 | Patterns of Enterprise Application Architecture | 52.49 |
|  6 |           3 | 0321349524 | The C Programming Language(2nd Edition)         | 31.83 |
|  7 |           3 | 0321349529 | C++ Primer(5th Edition)                         | 55.56 |
|  8 |           3 | 0321349528 | Murach C++ Programming                          |  59.5 |
|  9 |           4 | 0321349810 | Python Crash Course                             | 21.24 |
| 10 |           5 | 1935182706 | Scala in Depth                                  | 32.48 |
| 11 |           6 | 0321349819 | Eloquent JavaScript                             |    25 |
| 12 |           1 | 0321349812 | Modern Java in Action                           | 48.18 |
+----+-------------+------------+-------------------------------------------------+-------+
12 rows in set (0.00 sec)

mysql> select * from author;
+----+--------------+-----------+-----------------------------------------------------------------------------------------------------------------------------+
| ID | FIRST_NAME   | LAST_NAME | DESCRIPTION                                                                                                                  |
+----+--------------+-----------+-----------------------------------------------------------------------------------------------------------------------------+
|  1 | Rod          | Johnson   | an Australian computer specialist who created the Spring Framework and co-founded SpringSource                               |
|  2 | Ken          | Arnold    | an American computer programmer well known as one of the developers of the 1980s                                            |
|  3 | Kathy        | Sierra    | She created the award-winning Head First programming book series that has sold over 1 million copies.                        |
|  4 | Joel         | Murach    | He has written extensively on a wide range of Java, .NET, web, and database technologies.                                    |
|  5 | Martin       | Fowler    | a British software developer, author and international public speaker on software development                                |
|  6 | Brian        | Kernighan | a computer scientist who worked at Bell Labs alongside Unix creators                                                         |
|  7 | Stanley      | Lippman   | He has worked with Bjarne Stroustrup in Bell Laboratories during early stages of C++                                         |
|  8 | Eric         | Matthes   | He teaches high school math and science at a small school in southeast Alaska.                                               |
|  9 | Josh         | Suereth   | a Staff Software Engineer at Google LLC                                                                                      |
| 10 | Marijn       | Haverbeke | a programmer and tech writer in Berlin                                                                                       |
| 11 | Martin       | Odersky   | a German computer scientist and professor of programming methods                                                            |
| 12 | Raoul-Gabriel | Urma     | a PhD candidate in Computer Science at the University of Cambridge. He is co-author of the book Java 8 in Action             |
+----+--------------+-----------+-----------------------------------------------------------------------------------------------------------------------------+
12 rows in set (0.00 sec)

mysql> select * from author_book;
+-----------+---------+
| AUTHOR_ID | BOOK_ID |
+-----------+---------+
|         1 |       1 |
|         2 |       2 |
|         3 |       3 |
|         4 |       4 |
|         5 |       5 |
|         6 |       6 |
|         4 |       7 |
|         7 |       8 |
|         8 |       9 |
|         9 |      10 |
|        11 |      10 |
|        10 |      11 |
|        12 |      12 |
+-----------+---------+
13 rows in set (0.00 sec)
```

8. Delete the saved book and author(s) from the database. You will not see **Modern Java in Action** and its author  **Raoul-Gabriel Urma** in the screenshot below.
Run **java -jar .\target\book-publish-app-delete-book.jar**
**edu.lix8.spring.hibernate.app.SpringHibernateAppDeleteBook**

```
12:27:01,473  INFO .spring.hibernate.app.SpringHibernateApp:  20 - ============== Delete the saved book and authors from database ==============
12:27:01,588  INFO 8.spring.hibernate.dao.PublishingDaoImpl:  69 - Book deleted with id: 12
12:27:01,637  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=1, isbn='0764543857', title='Expert one-on-one J2EE Design and Development', price=59.99}

12:27:01,644  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='Java', id=1}
12:27:01,646  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=1, first_name='Rod', last_name='Johnson', description='an Australian computer specialist who created the Spring Framework and co-founded
 SpringSource'}
12:27:01,646  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,646  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=2, isbn='0321349807', title='The Java Programming Language', price=31.75}

12:27:01,646  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='Java', id=1}
12:27:01,646  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=2, first_name='Ken', last_name='Arnold', description='an American computer programmer well known as one of the developers of the 1980s'}

12:27:01,647  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,647  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=3, isbn='0321349808', title='Head First Java', price=18.3}

12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='Java', id=1}
12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=3, first_name='Kathy', last_name='Sierra', description='She created the award-winning Head First programming book series that has sold o
ver 1 million copies.'}
12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=4, isbn='0321349809', title='Murach Java Programming (5th Edition)', price=50.14}

12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='Java', id=1}
12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=4, first_name='Joel', last_name='Murach', description='He has written extensively on a wide range of Java, .NET, web, and database techn
ologies.'}
12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=5, isbn='0321127420', title='Patterns of Enterprise Application Architecture', price=52.49}

12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='Design Patterns', id=2}
12:27:01,648  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=5, first_name='Martin', last_name='Fowler', description='a British software developer, author and international public speaker on softwa
re development'}
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=6, isbn='0321349524', title='The C Programming Language(2nd Edition)', price=31.83}

12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='C/C++', id=3}
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=6, first_name='Brian', last_name='Kernighan', description='a computer scientist who worked at Bell Labs alongside Unix creators'}
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=7, isbn='0321349529', title='C++ Primer(5th Edition)', price=55.56}

12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='C/C++', id=3}
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=4, first_name='Joel', last_name='Murach', description='He has written extensively on a wide range of Java, .NET, web, and database techn
ologies.'}
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=8, isbn='0321349528', title='Murach C++ Programming', price=59.5}

12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='C/C++', id=3}
12:27:01,649  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=7, first_name='Stanley', last_name='Lippman', description='He has worked with Bjarne Stroustrup in Bell Laboratories during early stages
of C++'}
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=9, isbn='0321349810', title='Python Crash Course', price=21.24}

12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='Python', id=4}
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=8, first_name='Eric', last_name='Matthes', description='He teaches high school math and science at a small school in southeast Alaska.'}

12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=10, isbn='1935182706', title='Scala in Depth', price=32.48}

12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='Scala', id=5}
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=9, first_name='Josh', last_name='Suereth', description='a Staff Software Engineer at Google LLC'}
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=11, first_name='Martin', last_name='Odersky', description='a German computer scientist and professor of programming methods'}
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  30 - Book{id=11, isbn='0321349819', title='Eloquent JavaScript', price=25.0}

12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  32 - Category{name='JavaScript', id=6}
12:27:01,650  INFO .spring.hibernate.app.SpringHibernateApp:  34 - Author{id=10, first_name='Marijn', last_name='Haverbeke', description='a programmer and tech writer in Berlin'}
12:27:01,651  INFO .spring.hibernate.app.SpringHibernateApp:  35 - ------------------------------------------
```

9.  Finally check each table using sql statement. You will not see **Modern Java in Action** from the book table. And you will not see author **Raoul-Gabriel Urma** in the screenshot below.

```
mysql> select * from category;
+----+----------------+
| ID | NAME           |
+----+----------------+
|  1 | Java           |
|  2 | Design Patterns |
|  3 | C/C++          |
|  4 | Python         |
|  5 | Scala          |
|  6 | JavaScript     |
+----+----------------+
6 rows in set (0.00 sec)

mysql> select * from book;
+----+-------------+------------+-----------------------------------------------+-------+
| ID | CATEGORY_ID | ISBN       | TITLE                                         | PRICE |
+----+-------------+------------+-----------------------------------------------+-------+
|  1 |           1 | 0764543857 | Expert one-on-one J2EE Design and Development | 59.99 |
|  2 |           1 | 0321349807 | The Java Programming Language                  | 31.75 |
|  3 |           1 | 0321349808 | Head First Java                                |  18.3 |
|  4 |           1 | 0321349809 | Murach Java Programming (5th Edition)          | 50.14 |
|  5 |           2 | 0321127420 | Patterns of Enterprise Application Architecture | 52.49 |
|  6 |           3 | 0321349524 | The C Programming Language(2nd Edition)        | 31.83 |
|  7 |           3 | 0321349529 | C++ Primer(5th Edition)                        | 55.56 |
|  8 |           3 | 0321349528 | Murach C++ Programming                         |  59.5 |
|  9 |           4 | 0321349810 | Python Crash Course                            | 21.24 |
| 10 |           5 | 1935182706 | Scala in Depth                                 | 32.48 |
| 11 |           6 | 0321349819 | Eloquent JavaScript                            |    25 |
+----+-------------+------------+-----------------------------------------------+-------+
11 rows in set (0.00 sec)

mysql> select * from author;
+----+------------+------------+------------------------------------------------------------------------------------+
| ID | FIRST_NAME | LAST_NAME  | DESCRIPTION                                                                         |
+----+------------+------------+------------------------------------------------------------------------------------+
|  1 | Rod        | Johnson    | an Australian computer specialist who created the Spring Framework and co-founded SpringSource |
|  2 | Ken        | Arnold     | an American computer programmer well known as one of the developers of the 1980s    |
|  3 | Kathy      | Sierra     | She created the award-winning Head First programming book series that has sold over 1 million copies. |
|  4 | Joel       | Murach     | He has written extensively on a wide range of Java, .NET, web, and database technologies. |
|  5 | Martin     | Fowler     | a British software developer, author and international public speaker on software development |
|  6 | Brian      | Kernighan  | a computer scientist who worked at Bell Labs alongside Unix creators                |
|  7 | Stanley    | Lippman    | He has worked with Bjarne Stroustrup in Bell Laboratories during early stages of C++ |
|  8 | Eric       | Matthes    | He teaches high school math and science at a small school in southeast Alaska.      |
|  9 | Josh       | Suereth    | a Staff Software Engineer at Google LLC                                             |
| 10 | Marijn     | Haverbeke  | a programmer and tech writer in Berlin                                             |
| 11 | Martin     | Odersky    | a German computer scientist and professor of programming methods                   |
+----+------------+------------+------------------------------------------------------------------------------------+
11 rows in set (0.00 sec)

mysql> select * from author_book;
+-----------+---------+
| AUTHOR_ID | BOOK_ID |
+-----------+---------+
|         1 |       1 |
|         2 |       2 |
|         3 |       3 |
|         4 |       4 |
|         5 |       5 |
|         6 |       6 |
|         4 |       7 |
|         7 |       8 |
|         8 |       9 |
|         9 |      10 |
|        11 |      10 |
|        10 |      11 |
+-----------+---------+
12 rows in set (0.00 sec)
```