DB Project 2: Hibernate

Due: Dec 11, 2019

# Creating relational database using ORM (Object Relation Mapping)

Consider the following schemas:

Publisher (name, phone, city), PK: name.

Book (ISBN, title, year, published\_by, previous\_edition, price), PK: ISBN, FK: published\_by refs Publisher, previous\_edition refs Book.

Author (SSN, first\_name, last\_name, address, income), PK: SSN.

Writes (aSSN, bISBN), PK: (aSSN, bISBN), FK: aSSN refs Author, bISBN refs Book.

Editor (SSN, first\_name, last\_name, address, salary, works\_for, book\_count), PK: SSN, FK: works\_for refs Publisher.

Edits (eSSN, bISBN), PK: (eSSN, bISBN), FK: eSSN refs Editor, bISBN refs Book.

1. Design an ER diagram based on the given schemas (draw it in a Microsoft Word file and convert the file to PDF once you are done).
2. In your Java project, create necessary Java Persistent Classes (Annotated Java Beans) to implement the ER diagram.
3. In MySQL workbench, create a DB and name it as BookManager using DDL.
4. In your Java project, populate the database using Hibernate APIs we discussed. Data are given in the following table.

Note: do not copy the following SQL to workbench!!! The project requires you populate DB using Java statements.

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| INSERT INTO Publisher(NAME,phone,city) VALUES  ("McGraw Hill", "8175689542", "Fort Worth"),  ("Pearson", "8175689666", "OKC"),  ("Addison Wesley", "8175689789", "Dallas"),  ("O Reiley", "8885961258", "Chicago"),  ("Oxford Press", "123456789", "London"),  ("ABC", "123456789", "Wichita Falls"),  ("Springer", "9852365", "New York");  INSERT INTO Book(ISBN, title, YEAR, published\_by, previous\_edition, price) VALUES  ("9780073376", "OO Software Engineering", 2014, "McGraw Hill", NULL, 102.5),  ("0806666666", "Fundamentals of DB 1", 1992, "ABC", NULL, 82.5),  ("0805317481", "Fundamentals of DB 2", 1994, "ABC", "0806666666", 87.5),  ("0805317554", "Fundamentals of DB 3", 1999, "ABC", "0805317481", 12.5),  ("0321122267", "Fundamentals of DB 4", 2003, "Addison Wesley", "0805317554", 15.5),  ("0321369572", "Fundamentals of DB 5", 2008, "Addison Wesley", "0321122267", 162.5),  ("0136086209", "Fundamentals of DB 6", 2009, "Pearson", "0321369572", 172.5),  ("0133970779", "Fundamentals of DB 7", 2015, "Pearson", "0136086209", 98.3),  ("0806666611", "Software Requirements", 2013, "Springer", NULL, 99.5),  ("0806666612", "UML Modeling", 2000, "O Reiley", NULL, 89.5),  ("0806666614", "Machine Learning 1", 2000, "Addison Wesley", NULL, 109.5),  ("0806666613", "Machine Learning 2", 2008, "Addison Wesley", "0806666614", 109.5),  ("0806666620", "Big Bang Theory", 1975, "Oxford Press", NULL, 19.5),  ("0806666622", "Java Programming", 2008, "Pearson", NULL, 59.5);  INSERT INTO Author(SSN, first\_name, last\_name, address, income) VALUES  ("123456789", "John", "Smith", "address 1", 20000.5),  ("987654321", "Harry", "Potter", "address 2", 25000.5),  ("333444555", "Josh", "Doe", "address 3", 20400.5),  ("555666888", "Ian", "Goodfellow", "address 4", 70000.5),  ("999111555", "Andrew", "Ng", "address 5", 90000.5),  ("222333111", "Peter", "Doe", "address 6", 80000.5),  ("654987321", "Tom", "Chandler", "address 7", 60000.5);  INSERT INTO Writes(aSSN, bISBN) VALUES  ("123456789", "9780073376"),  ("123456789", "0133970779"),  ("123456789", "0136086209"),  ("987654321", "0321369572"),  ("333444555", "0321122267"),  ("333444555", "0805317554"),  ("555666888", "0805317481"),  ("555666888", "0806666666"),  ("999111555", "0806666611"),  ("999111555", "0806666612"),  ("999111555", "0806666613"),  ("222333111", "0806666614"),  ("654987321", "0806666620"),  ("654987321", "0806666622"),  ("123456789", "0806666622"),  ("222333111", "0806666622"),  ("987654321", "0806666622"),  ("555666888", "0321122267"),  ("654987321", "0321122267"),  ("999111555", "0321122267"),  ("222333111", "0805317554");  INSERT INTO Editor (SSN, first\_name, last\_name, address, salary, works\_for, book\_count) VALUES  ("913746825", "Ming", "Yao", "address 11", 52369.5, "McGraw Hill", 8),  ("520898745", "Tim", "Duncan", "address 11", 52369.5, "Addison Wesley", 9),  ("313164649", "Allen", "Iverson", "address 11", 59369.5, "Pearson", 0),  ("198503719", "Ray", "Allen", "address 11", 52369.5, "ABC", 1),  ("333366996", "Kobe", "Bryant", "address 11", 52369.5, "Oxford Press", 5),  ("123456789", "John", "Smith", "address 1", 3000, "McGraw Hill", 1),  ("987654321", "Harry", "Potter", "address 2", 3000, "O Reiley", 2),  ("555666888", "Ian", "Goodfellow", "address 4", 3000, "Springer", 7),  ("222333111", "Peter", "Doe", "address 6", 3000, "Oxford Press", 3),  ("999111555", "Andrew", "Ng", "address 5", 3000, "Addison Wesley", 5);  INSERT INTO Edits(eSSN, bISBN) VALUES  ("555666888", "9780073376"),  ("555666888", "0133970779"),  ("555666888", "0136086209"),  ("999111555", "0321369572"),  ("913746825", "0321122267"),  ("520898745", "0805317554"),  ("222333111", "0805317481"),  ("987654321", "0806666666"),  ("999111555", "0806666611"),  ("313164649", "0806666612"),  ("555666888", "0806666613"),  ("123456789", "0806666614"),  ("222333111", "0806666620"),  ("999111555", "0806666622"),  ("999111555", "0806666666"),  ("222333111", "0806666666"),  ("313164649", "0321122267"),  ("999111555", "0133970779"); |

The project will be graded based on this rubric:

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| ER diagram | 20 pts |
| Java Persistent Classes | 30 pts |
| Code to populate DB | 40 pts |
| Comments | 10 pts |

What to turn in?

Before you export and turn in the project on TCU Online, please make sure you change the DB URL, Username and password back to mine so I can grade. Then export your java project in a zip file.

You need to upload two items on TCU Online, a pdf that contains the ER, a zip file of your project.