

# Final Project

CS3500

Fall 2017

Please design and create a Database Management System for an online book store in your mysql account on storm.cis.fordham.edu.

- A. A customer of the store should register to purchase a book. To register, customers should provide information of full name, gender, birth date, email address, delivery address, contact phone number(s). The customer also should provide one or more payment methods, such as debit card(s), credit card(s), bank account(s). Debit card and credit card should have information of card holder, card number, expiration date, contact phone number, and billing address. Each bank account should have account holder info, account type (checking or saving), account number and bank name. After registration, each customer will have a unique customerid, username and password.
- B. The books of the store are divided into several sections, such as Sciences, Arts, Children, and so on. Each book belongs to a section, has a title, author(s), ISBN, price, edition, year and publisher. For each book, keep track of its current inventory. Every author has full name and an author could have written one or more books.
- C. Customer can purchase one or more books in different quantities, and all books the customer purchases are put into his/her shopping cart. Based on the quantity and price of books in the shopping cart of that day, the bill will be generated when the customer checks out. Each bill belongs to a customer and associates with a shopping cart and a payment method is required to settle the bill.

The following information is some instances of customers, books and so on.

## **Books**

Book ISBN: 0-8053-1755-4

Title: Fundamentals of Database Systems, 3<sup>rd</sup> edition

Authors: Ramez A. Elmasri and Shamkant Navathe

Year and Publisher: 2000, Addison Wesley

Price: \$100.00

Section: Sciences

Inventory: 20

Book ISBN: 978-0-12-374856-0

Title: Data Mining, Practical Machine Learning Tools and Techniques,  
3<sup>rd</sup> edition

Authors: Ian H. Witten, Eibe Frank, and Mark Hall

Year and Publisher: 2011, Elsevier

Price: \$120.00

Section: Sciences

Inventory: 25

Book ISBN: 0-1153-2555-5

Title: Writing Skills

Authors: Matt Florence

Year and Publisher: 2010, Addison Wesley

Price: \$30.00

Section: Arts

Inventory: 10

Book ISBN: 978-0-07-246563-1

Title: Database Management Systems, 3<sup>rd</sup> edition

Authors: Raghu Ramakrishnan and Johannes Gehrke

Year and Publisher: 2003, McGraw-Hill

Price: \$110.00

Section: Sciences

Inventory: 15

**Customers:**

Customerid: 00001  
Username: xxyy  
Password: 0808  
Name: Tom Hunks  
Birth date: 12/1/1990  
Gender: M  
Email address: thunks@yahoo.com  
Delivery address: 1100 Grand Road, New York, NY 10001  
Phone number: 212-400-0001 (Home), 212-100-2222 (Cell)  
Payment method:

## Credit card

Holder: Tom Hunks  
Card #: 9999 9999 8888 8888  
Expiration Date: 08/17  
Phone Number: 212-400-0001  
Billing Address: 1100 Grand Road, New York, NY 10001

## Bank Account:

Holder: Tom Hunks  
Account #: 1112223  
Account Type: Checking  
Bank Name: Chase

Books in his shopping cart on 11/24/17:

1 copy of "*Data Mining, Practical Machine Learning Tools and Techniques*"

2 copies of "*Database Management Systems*"

1 copy of "*Writing Skills*"

\*He would like to pay with his checking account.

Customerid: 00002  
Username: xzzz  
Password: 11223  
Name: Tom Cruise  
Birth date: 10/1/1991  
Gender: M  
Email address: tcruise@yahoo.com  
Delivery address: 441 East Fordham Road, Bronx, NY 10458  
Phone number: 718-817-3333 (Cell)  
Payment method:  
    Credit card  
        Holder: Tom Cruise  
        Card #: 2222 4444 5555 6666  
        Expiration Date: 12/14  
        Phone Number: 718-817-3333  
        Billing Address: 441 East Fordham Road, Bronx, NY 10458

Books in his shopping cart on 11/23/17:

1 copy of "*Data Mining, Practical Machine Learning Tools and Techniques*"

1 copy of "*Database Management Systems*"

1 copy of "*Writing Skills*"

\*He would like to pay with his credit card.

Customerid: 00003  
Username: abcde  
Password: xyz123  
Name: Tina Fei  
Birth date: 12/1/1956  
Gender: F  
Email address: tfei11@yahoo.com  
Delivery address: 442 Fordham Road, Bronx, NY 10458  
Phone number: 817-718-0001 (Work), 212-100-2234 (Cell)  
Payment method:

Debit card

Holder: Tina Fei  
Card #: 1234 1234 5678 5678  
Expiration Date: 10/18  
Phone Number: 817-718-0001  
Billing Address: 442 Fordham Road, Bronx, NY10458

Bank Account:

Holder: Tom Fei  
Account #: 12667  
Account Type: Checking  
Bank Name: Capital One

Books in her shopping cart on 12/1/17:

1 copy of "*Data Mining, Practical Machine Learning Tools and Techniques*"

1 copy of "*Database Management Systems*"

1 copy of "*Writing Skills*"

1 copy of "*Fundamentals of Database Systems*"

\*She would like to pay with her debit card.

Customerid: 00004  
Username: iama  
Password: 34ii  
Name: Rice Brown  
Birth date: 12/1/1970  
Gender: F  
Email address: rbrown1999@hotmail.com  
Delivery address: 383 56<sup>th</sup> Street, New York, NY 10002  
Phone number: 212-0001-7788 (Cell)  
Payment method:

Credit card

Holder: Rice Brown  
Card #: 1122 3344 5566 7788  
Expiration Date: 1/16  
Phone Number: 212-0001-7788  
Billing Address: 38 56<sup>th</sup> Street, New York, NY 10002

Books in her shopping cart on 11/24/17:

- 1 copy of "*Data Mining, Practical Machine Learning Tools and Techniques*"
- 1 copy of "*Database Management Systems*"
- 2 copies of "*Writing Skills*"
- 1 copy of "*Fundamentals of Database Systems*"

\*She would like to pay with her credit card.

Customerid: 00005  
Username: lisaw  
Password: 8877  
Name: Lisa Warren  
Birth date: 12/1/1972  
Gender: F  
Email address: [lisawarren@gmail.com](mailto:lisawarren@gmail.com)  
Delivery address: 1 Fordham Road, Bronx, NY 10458  
Phone number: 212-300-1199 (Cell), 212-300-7777 (Home)  
Payment method:  
Credit card:  
Holder: Lisa Warren  
Card #: 1111 2222 3333 4444  
Expiration Date: 1/17  
Phone Number: 212-300-1199  
Billing Address: 1 Fordham Road, Bronx, NY 10458  
Bank Account:  
Holder: Lisa Warren  
Account #: 9922882  
Account Type: Checking  
Bank Name: Chase

\* She does not have any book in her cart.

Submission:

1. ER Diagram of the database you design for this book store.
2. The RM of the database.
3. Create the database in MySQL server at storm.cis.fordham.edu.
4. Perform the following queries on the database you create and script the query results.
  - 4.1. Is there any customer who does not purchase any books at all? If there is, list names of them.
  - 4.2. Who have bought the book - "Writing Skills"?
  - 4.3. Who have bought more than 2 different books?
  - 4.4.
    - 4.4.1. Which book is the most popular book among all customers? Please list its title and number of copies are sold.
    - 4.4.2. Which book is the most popular book among female customers?
  - 4.5. How many customers would like to use credit cards as payment method?
  - 4.6. In which zipcode, this book store is very popular? (it does not matter whether the customer has bought or not)
  - 4.7. Among all customers, whose purchase amount is the highest?



FUNDAMENTALS OF. Fourth Edition DATABASE SYSTEMS . Ramez Elmasri. Department of Computer Science Oracle Database 11g: SQL Fundamentals I. 499 Pages Â· 2009 Â· 2.12 MB Â· 6,841 Downloads. Database SQL Language Reference 11g, Release 1 (11.1) ep\_cover.ppt [Read-Only] The Limits of Organic Life in Planetary Systems. 117 Pages Â· 2007 Â· 1.29 MB Â· 7,338 Downloads Â· New!Â Database Systems : Design, Implementation, and Management, Ninth Edition. Carlos Coronel, Steven Databa Fundamentals of accounting and auditing - icsi. 408 Pages Â· 2012 Â· 3.24 MB Â· 1,991 Downloads. Dec 31, 2011 Fundamentals of Accounting, and. Part-B. Fundamentals of Auditing. The institute FUNDAMEN 1. FUNDAMENTALS OF Database Systems SIXTH EDITION. 2. This page intentionally left blank. 3. FUNDAMENTALS OF Database Systems SIXTH EDITION Ramez Elmasri Department of Computer Science and Engineering The University of Texas at ArlingtonÂ Where those designations appear in this book, and the publisher was aware of a trademark claim, the designations have been printed in initial caps or all caps. Library of Congress Cataloging-in-Publication Data Elmasri, Ramez. Fundamentals of database systems / Ramez Elmasri, Shamkant B. Navathe.â€6th ed. p. cm. Includes bibliographical references and index. ISBN-13: 978-0-136-08620-8 1. Database management.