BOOKSTORE

Course   :   Database Systems (CS 510)

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Business Rules & Assumptions

- There's only one bookstore.

- Bookstore buys books from different publishers.

- One book can be published only by one publisher

- Assume each book has only one Author

- Many customers can buy many books.

- Books can be of types: (textbook, novel, comic, children book or cookbook)

- Customers who have an online account have the customer_ID in the customer table.

- One customer can have multiple phone numbers.

- Through one card many transactions can be made.

- Books can be purchased from store directly or online. The method of payment can be any one of the three types: cash or store credit or credit card.

Database Design - ERD Diagram
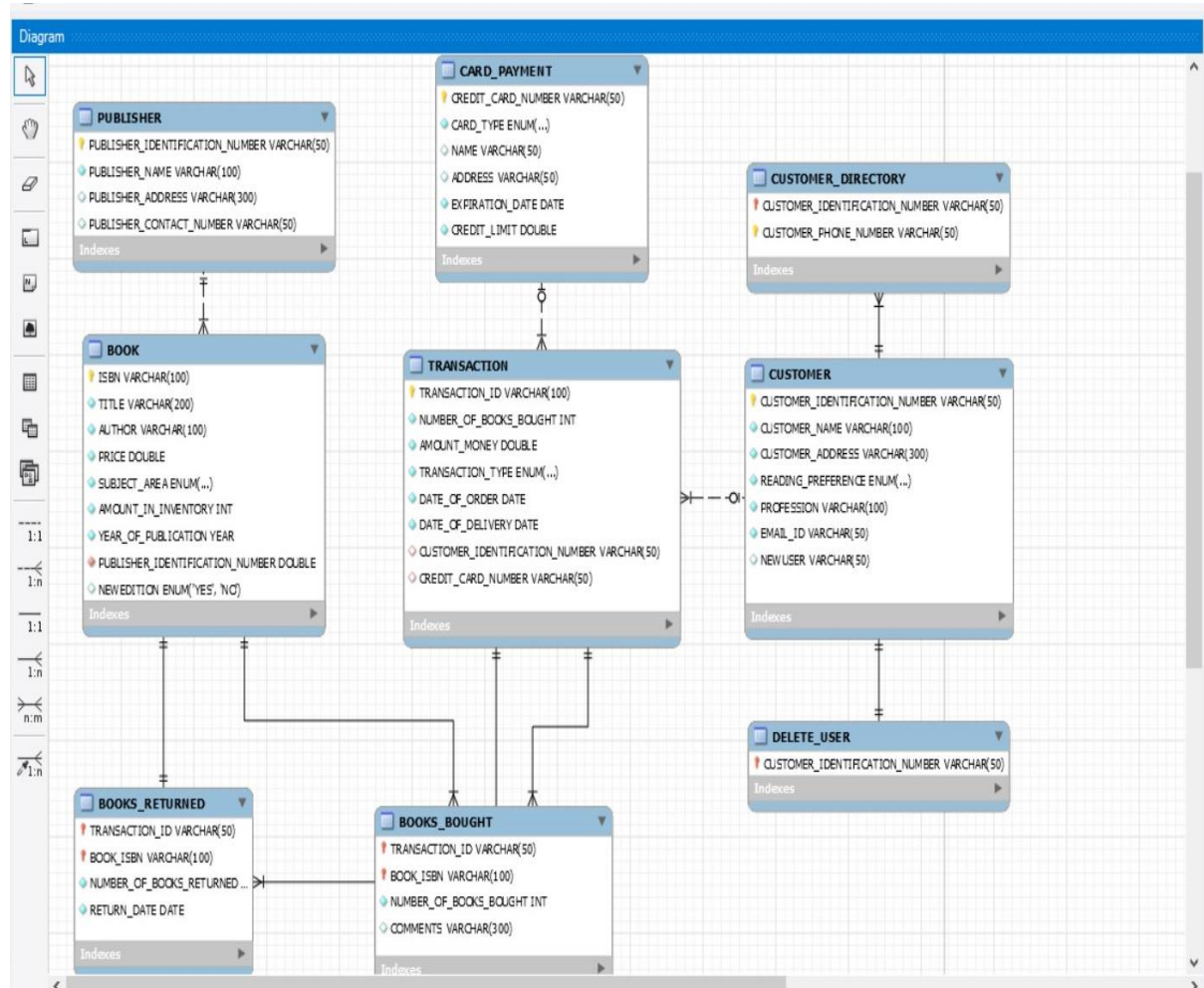
Queries

1. **Every holiday season, the bookstore sends coupons to the top 3 of its customers. Customers that have spent the most during the current year make the top of the list. Generate a list with names and addresses of these customers.**

select c.CUSTOMER_IDENTIFICATION_NUMBER,CUSTOMER_NAME,
EMAIL_ID,sum(AMOUNT_MONEY) as AMOUNT_SPENT
from transaction t,customer c where t.CUSTOMER_IDENTIFICATION_NUMBER
=c.CUSTOMER_IDENTIFICATION_NUMBER group by
CUSTOMER_IDENTIFICATION_NUMBER order by amount_spent desc limit 3;

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

CUSTOMER_IDENTIFICATION_NUMBER	CUSTOMER_NAME	EMAIL_ID	AMOUNT_SPENT
10101	Sita	sita@gmail.com	22500
10109	Anwar	anw@gmail.com	6000
10107	Shwetha	Shwe@gmail.com	3500

2. College professors are targeted when advertising new textbooks. List all customers who are part of faculty.

select * from customer where PROFESSION = 'faculty';

CUSTOMER_IDENTIFICATION_NUMBER	CUSTOMER_NAME	CUSTOMER_ADDRESS	READING_PREFERENCE	PROFESSION	EMAIL_ID	NEWUSER
10102	Sheela	Bangalore	TEXTBOOK	faculty	shee@gmail.com	NULL
10108	Swapna	Kashmir	COMIC	faculty	Swa@gmail.com	ves
10109	Anwar	Chennai	NOVEL	Faculty	anw@gmail.com	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL

3. Students are the main customers for textbooks. The bookstore informs the students about promotions on textbooks, sends out coupons, and advertises new textbook editions. List all customers of the bookstore who are currently students in the nearby university

select * from customer where PROFESSION = 'student';

CUSTOMER_IDENTIFICATION_NUMBER	CUSTOMER_NAME	CUSTOMER_ADDRESS	READING_PREFERENCE	PROFESSION	EMAIL_ID	NEWUSER
10103	Archana	Hyderabad	COOKBOOK	Student	arch@gmail.com	NULL
10107	Shwetha	Kolkata	NOVEL	Student	Shwe@gmail.com	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL

4. **Developing efficient search engines facilitates the process of retrieving the necessary information from the database. Create queries that do the following:**

 a. List all the books published by an author.

select * from book where Author='JKRowling';

ISBN	TITLE	AUTHOR	AMOUNT_IN_INVENTORY	PRICE	SUBJECT_AREA	YEAR_OF_PUBLICATION	PUBLISHER_IDENTIFICATION_NUMBER	NEWf
E12454	Harry Potter	JKRowling	50	55	NOVEL	2012	P103	NULL
F56754	Fantastic Beasts & where to find them	JKRowling	32	25	NOVEL	2015	P103	NULL
K15345	Shiva Trilogy - The immortals of Meluha	Amish Tripathy	40	55	NOVEL	2018	P103	YES
L65453	Sita : Warrior of Mithila	Amish Tripathy	25	25	NOVEL	2018	P103	YES
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL NULL	NULL

b. List all the books in a given subject area.

select * from book where SUBJECT_AREA='novel';

ISBN	TITLE	AUTHOR	AMOUNT_IN_INVENTORY	PRICE	SUBJECT_AREA	YEAR_OF_PUBLICATION	PUBLISHER_
E12454	Harry Potter	JKRowling	50	55	NOVEL	2012	P103
F56754	Fantastic Beasts & where to find them	JKRowling	32	25	NOVEL	2015	P103
NULL	NULL	NULL	NULL	NULL	NULL		NULL NULL

c. List the books that are sold out the most.

select b.TITLE, sum(bb.number_of_books_bought) as Number_of_books_sold

from books_bought as bb,book as b where bb.BOOK_ISBN=b.ISBN

group by ISBN order by Number_of_books_sold desc;

TITLE	Number_of_books_sold
Database Svstems	18
Harrv Potter	15
Tenali Raman Adventures	15
Continental Recipes	12
Fantastic Beasts & where to find them	10
Java Fundamentals	10

d. List the most popular authors.

select b.author, sum(bb.number_of_books_bought) as Number_of_books_sold

from books_bought as bb,book as b where bb.BOOK_ISBN=b.ISBN

group by AUTHOR order by Number_of_books_sold desc;

author	Number_of_books_sold
JKRowling	25
Carlos Coronel	18
Javaprada	15
Krishnaveni	12
Malik	10

e. List the month's/year's Bestseller.

select b.TITLE, sum(bb.number_of_books_bought) as Number_of_books_sold, t.DATE_OF_ORDER

from books_bought as bb,book as b,transaction as t

where bb.BOOK_ISBN=b.ISBN and bb.transaction_id=t.transaction_id

and t.DATE_OF_ORDER between '2018-01-01' and '2018-12-12'

group by ISBN order by Number_of_books_sold desc;

TITLE	Number_of_books_sold	DATE_OF_ORDER
Database Systems	18	2018-04-01
Harry Potter	15	2018-04-01
Tenali Raman Adventures	15	2018-04-05
Continental Recipes	12	2018-09-11
Fantastic Beasts & where to find them	10	2018-08-01
Java Fundamentals	10	2018-04-01

f. List the number of copies sold for books in a specific Subject area / Category

select b.SUBJECT_AREA, sum(bb.number_of_books_bought) as
Number_of_books_sold

from books_bought as bb,book as b where bb.BOOK_ISBN=b.ISBN

group by SUBJECT_AREA order by Number_of_books_sold desc;

SUBJECT_AREA	Number_of_books_sold
TEXTBOOK	28
NOVEL	25
COMIC	15
COOKBOOK	12

5. MAIL NEW RELEASE INFORMATION TO CUSTOMERS

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create view view1 as select
c.CUSTOMER_IDENTIFICATION_NUMBER,c.CUSTOMER_NAME,c.READING_
PREFERENCE,c.EMAIL_ID
from customer as c where c.READING_PREFERENCE in
(select SUBJECT_AREA from book where NEWEDITION='yes') order by
c.READING_PREFERENCE;

create view view2 as select ISBN,SUBJECT_AREA from book where
NEWEDITION='yes' and
SUBJECT_AREA in (select READING_PREFERENCE from customer) order by
SUBJECT_AREA;

select v1.CUSTOMER_IDENTIFICATION_NUMBER,v1.CUSTOMER_NAME,
v1.EMAIL_ID, v2.ISBN,v2.SUBJECT_AREA from view1 v1,view2 v2
where v1.READING_PREFERENCE=v2.SUBJECT_AREA order by
SUBJECT_AREA ,CUSTOMER_NAME;
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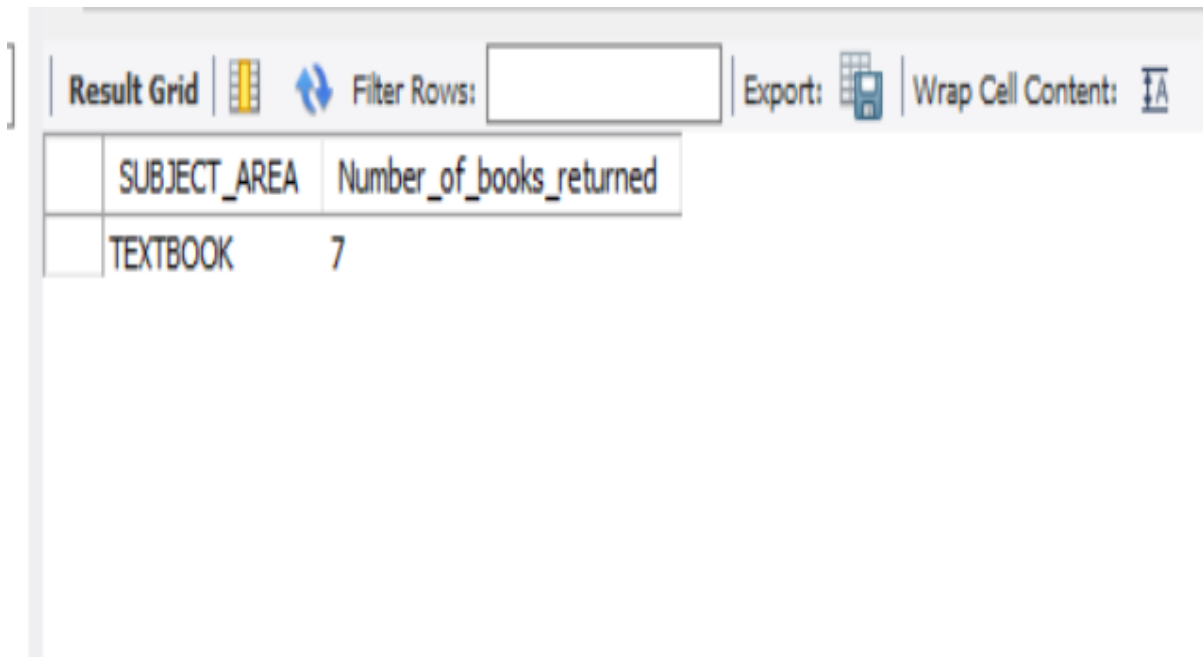
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

CUSTOMER_IDENTIFICATION_NUMBER	CUSTOMER_NAME	EMAIL_ID	ISBN	SUBJECT_AREA
10102	Sheela	shee@gmail.com	I46343	TEXTBOOK
10107	Shwetha	Shwe@gmail.com	K15345	NOVEL
10107	Shwetha	Shwe@gmail.com	L65453	NOVEL
10101	Sita	sita@gmail.com	K15345	NOVEL
10101	Sita	sita@gmail.com	L65453	NOVEL
10104	Hafsa	haf@gmail.com	H23552	COMIC
10108	Swapna	Swa@gmail.com	H23552	COMIC
10105	Priya	pri@gmail.com	J35464	CHILDRENBOOK
10103	Archana	arch@gmail.com	G35454	COOKBOOK

6. SALES DATA ON HOW MANY BOOKS ON SOME CATEGORY WERE RETURNED

select b1.SUBJECT_AREA,sum(br.number_of_books_returned) as Number_of_books_returned

from books_returned br,book as b1

where b1.isbn=br.book_isbn group by b1.SUBJECT_AREA order by Number_of_books_returned desc;

	SUBJECT_AREA	Number_of_books_returned
	TEXTBOOK	7

7. SALES DATA ON HOW MANY BOOKS ARE BELOW A CERTAIN NUMBER IN INVENTORY:

TO MAKE DECISION WHETHER TO REPLENISH STOCK

select * from book where AMOUNT_IN_INVENTORY<25;

ISBN	TITLE	AUTHOR	AMOUNT_IN_INVENTORY	PRICE	SUBJECT_AREA	YEAR_OF_PUBLICATION	PUBLISHER_IDENTIFICATION_NUMBER	NEWEDITION
A10123	Java Fundamentals	Malik	20	50	TEXTBOOK	2012	P101	NULL
D33482	English Alphabets	Dr.Suess	20	10	CHILDRENBOOK	2007	P101	NULL
G35454	Chicken Recipes	VriavaKumar	20	20	COOKBOOK	2018	P104	YES
J35464	English Words	Dr.Suess	20	10	CHILDRENBOOK	2018	P101	YES
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL NULL	NULL

Web Extension

The Bookstore has an online portal where Subscribed users can view all their transaction details and can access the available books in the bookstore. New users can Sign-up for Online account on the Home Page. The New User enters details and submits. The request will be given to Admin User (Bookstore Owner). Admin has the right to choose whether the User should be given Online access or not. Admin Users can view all Customers details while customers can see only their transaction details. Both Admin and Customers can view all Books details. Customers also have the option to unsubscribe from the online bookstore. Admin User views unsubscribed users and has the power to revoke access from users. Admin User also can use the portal as a Decision Support Tool by facilitating view of sales data on how many books of a particular author or particular category (subject area) were sold out and also how many books of certain category were returned. This enables the Bookstore owner to decide what new books to order for. Bookstore also selects it's top 3 customers based on the amount they have spent in buying books from bookstore and sends out coupons to them. The Bookstore Owner can also identify potential customers of new books and generate their contact information permitting admin to send monthly notices to them.