Project Step 2 Final Version: ERD & Schema

Group 7: Kimchi Taco
Junhyeok Jeong
Joelle Perez

Feedback by the peer reviewer

We have 4 reviews from other students on Piazza

James Belknap, section 400

1. **Does the overview describe what problem is to be solved by a website with DB back end?**
   - Yes the overview did a good job describing what the problem is. It is going to be a website to purchase books, and uses a database to populate the books information with price. So it acts as a bookstore. I do like how the overview explained a walkthrough for the user visiting the site. Though after reading the shopping cart entity I have become confused. So, it's just an order history? If they decide to buy a book will they be directed to amazon, since you are using amazonBooks as a database? If the site is actually selling books, the shoppingCart entity description "saves the books ordered by the user" to me doesn't reflect that.

2. **Does the overview list specific facts?**
   - Yes, the overview lists that they will be using python scrappy, which will help them get the information for their database from amazon books. This information is used directly with a user being able to see this information when looking up books, or looking at the book lists. A question that arose when I read it was who/where the book lists were coming from? Is the user supposed to populate the booklist for future purchases, are the book lists coming from you guys, or are the booklists coming from amazon best

sellers in categories? Also is the site carrying out the purchase or is the purchase happening through amazon?

3. **Are at least four entities described and does each one represent a single idea to be stored a s a list?**
   - Yes they have 5 entities, and each entity corresponds to its own table/list. The entities are users, shopping carts, books, authors, and publishers.

4. **Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?**
   - Yes ,the outline does describe the purpose of each entity, as well as their attributes. Though the shopping car entity confuses me because the description makes it seem like an order history. Also, I think this would be a M:M relationship with books. Books can be a part of many different order histories/shopping carts, and a shopping cart can have many books. I think maybe this relationship could be explored better. If implemented this would also need a third schema table to showcase the M:M relationship. All the attributes have a data type, which I think is important and nice to see. I also feel like the outline only describes the relationships one way, but not the other way around. I think including it will help visualize things better.

5. **Are 1:M relationships correctly formulated? Is there at least one M:M relationship?**
   - Yes, they have 1 M:M relationship between authors and books. Though in the outline they only describe the M:M when in comes to authors writing several books. They don't explore the M:M relationship between books and authors. They also don't show a 3rd table in the schema linking the M:M relationship, which is needed for a M:M relationship to be

represented properly. I stated earlier, but I think a M:M relationship should be explored between books and shopping_cart.

6. **Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?**
   - Yes they do having consistency with their naming. All their entities are properly capitalized and plural. Although their shopping cart entity does not follow proper naming requirements. Their shouldn't be a space. It should either be Shopping_carts or shoppingCarts. Their attributes are also all consistent. They are singular and do not have spacing unlike the entity names. They however also do not follow proper naming requirements in that they are not lowercase. This is a problem we ran into during our first grading. This can also be seen in the attributes in the schema.

Name: Darwin Yee, Section: 401

1. **Does the overview describe what problem is to be solved by a website with DB back end? Does the overview list specific facts?**
   - The overview has enough details about the problem and an overview of the functions of the Database for the bookstore. But as our grader suggested, a specific fact about how many people the website will be serving may be needed.

2. **Are at least four entities described and does each one represent a single idea to be stored as a list?**
   - It has 5 entities and each represents a single idea.

3. **Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?**
   - The function of the Shopping Carts is a little confusing to me. It doesn't work like an ordinary shopping cart from conventional websites. It may be better to rename it to OrderHistory.

- For the Books table, isn't ISBN unique for each book? I think you can use ISBN as the PK for Books instead of Order_ID.

4. **Are 1:M relationships correctly formulated? Is there at least one M:M relationship?**
   - There is one M:M relationship between Authors and Books. The 1:M relationships are correctly formulated.
   - According to the class lecture, the Schema should have arrows pointing from a FK to the PK of another table.
   - An extra table, "Authors_Books", may be needed for the ER and the Schema to correctly represent the M:M relationship.

5. **Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?**
   - It would be better to change the "Shopping carts" to "Shopping_carts" for consistency.

Name: David Lee, Section: 401

1. **Does the overview describe what problem is to be solved by a website with DB back end?**
   - The overview was able to describe the requirements for the project properly by displaying a need for a basic search/purchase system for books within an online bookstore. Being a simple point of sales system, requiring a login based on customer data, it is able to serve as a database that tracks the outbound of sales.

2. **Does the overview list specific facts?**
   - As stated in the outline, we can clearly define a single customer that can have multiple shopping carts that contain multiple book orders, as well as associating books to their respective author and publisher information. One problem I had difficulty comprehending is the scale of the project in terms of user count as well as an issue with inventory management. Does the store have a warehouse with an unlimited quantity of products (books)? In my personal opinion, a proper method of tracking inventory inbound could improve this system.

3. **Are at least four entities described and does each one represents a single idea to be stored as a list?**

- The outline clearly defines each entity's function via five different tables. (Users, Shopping carts, Books, Authors, Publishers)

4. **Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?**
   - The entities and attributes are defined clearly with their purposes and relationships. The primary keys and foreign keys relationship could have been defined in the outline (before the diagrams). It is stated that multiple attributes follow a VARCHAR data type. As an addendum, with VARCHAR not having defined its string length, it may cause an error at both table creation time as well as associating data during joins (due to data being stored in different data sizes). The size of the data type should be clearly defined. The shopping cart entity seems to be static and not dynamic as seen in normal e-commerce systems.

5. **Are 1:M relationships correctly formulated? Is there at least one M:M relationship?**
   - There exists an M:M relationship between Books and Authors. With an M:M relationship, it would be proper to implement a joint table, Books_Authors.
   - There exists a 1:M relationship between Users & Shopping carts, Shopping carts & Books and Publishers & Books. One confusing aspect I see is between Shopping carts and Books. It seems that Books are uniquely stored in shopping carts when it is possible by logic that the same type of book can be associated with multiple shopping carts and users. A key to defining the same book in different carts (when the store has more than one of the same books) could be a convention used to improve the system.

6. **Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?**
   - The entity names follow a capitalization rule that is uniform in the outline, with it being plural as required by our lectures; however, in the diagram, there are attributes that start with a lower case (not uniform in the diagram). I would have preferred all attribute names to be lowercased and entity names are capitalized or vice-versa (for distinction - personal preference). The name of the Shopping carts entity should be changed so that space is not used within the name.

name : Martin Delgado, Section: ???

1. **Does the overview describe what problem is to be solved by a website with DB back end?**
    - Yes the overview did a good job describing what the problem is. It is going to be a website to purchase books, and uses a database to populate the books information with price. So it acts as a bookstore. I do like how the overview explained a walkthrough for the user visiting the site. Though after reading the shopping cart entity I have become confused. So, it's just an order history? If they decide to buy a book will they be directed to amazon, since you are using amazonBooks as a database? If the site is actually selling books, the shoppingCart entity description "saves the books ordered by the user" to me doesn't reflect that.

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I think maybe this relationship could be explored better. If implemented this would also need a third schema table to showcase the M:M relationship. All the attributes have a data type, which I think is important and nice to see. I also feel like the outline only describes the relationships one way, but not the other way around. I think including it will help visualize things better.

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Actions based on the feedback
List briefly the actions that you chose to take based on the above feedback. If you decided not to act on a specific suggestion, you need to describe in detail your reasoning.
1. In the overview, the reviewers were confused by 'One-user interaction'. Our team's intention of the term was that our online bookstore will provide single-user interface like checking logged-in user information and shopping cart like normal online shopping malls (Amazon, ebay). We changed the term and put specific example to make future reviewers understand.

2. In the 'Project Outline and Database Outline', a reviewer can't understand the description of "Shopping_Carts" entity because it says "saves the books ordered by the user". We noticed that is a problem. Therefore, we needed to change it.
3. In the ER diagram and schema, a reviewer mentioned that we didn't use the proper naming requirements for the attributes. Thus, we changed them to lowercase names.
4. We're disregarding changing the shopping cart and books relationship to an M:M because we only want one shopping cart per user rather than many shopping carts.
5. Reviewers suggested to add more specific information of website like main customer and sales.
6. We set Primary Keys and Foreign Keys based on the suggestions from reviewers because it could make well-structured database and prevent collision.

Upgrades to the Draft version

If you are making any changes to the files based on your own changed design decisions, they should be listed under this section.

1. In the overview, we changed "from login screen to our bookstore web-app with one-user interface."
2. We changed the description of "Shopping_Carts" entity like this: "saves the user's chosen books before purchases those."
3. Changed the attributes names to lowercase in our ER diagram and schema.
4. Add more specific explanation of our web-app "Beaver Books"
5. Set PKs and FKs on attributes and removed useless attributes.

Fixes based on Feedback from Step 1:

All char type constraints changed from char(225) to varchar, and using Amazon Scraper to extract information (prices, ranks, reviews, etc.) of books.

Overview

Our project is an online bookstore "Beaver Books". The "Beaver Books" usually have about 30,000 sales for year by Oregon State University students and Corvallis people. Our web-app formulated book databases from Amazon Books. The website sequence is mainly from login screen to bookstore web-app with one-user interface. For example, a user logged in successfully, then the user can search and buy books from the book list. In the end, the user can interact with the shopping cart before purchasing. To populate the bookstore's book DB and book search-bar, we will use 'Python Scrapy'

to get the book information like ISBN, author, publisher, year, and price from Amazon Books.

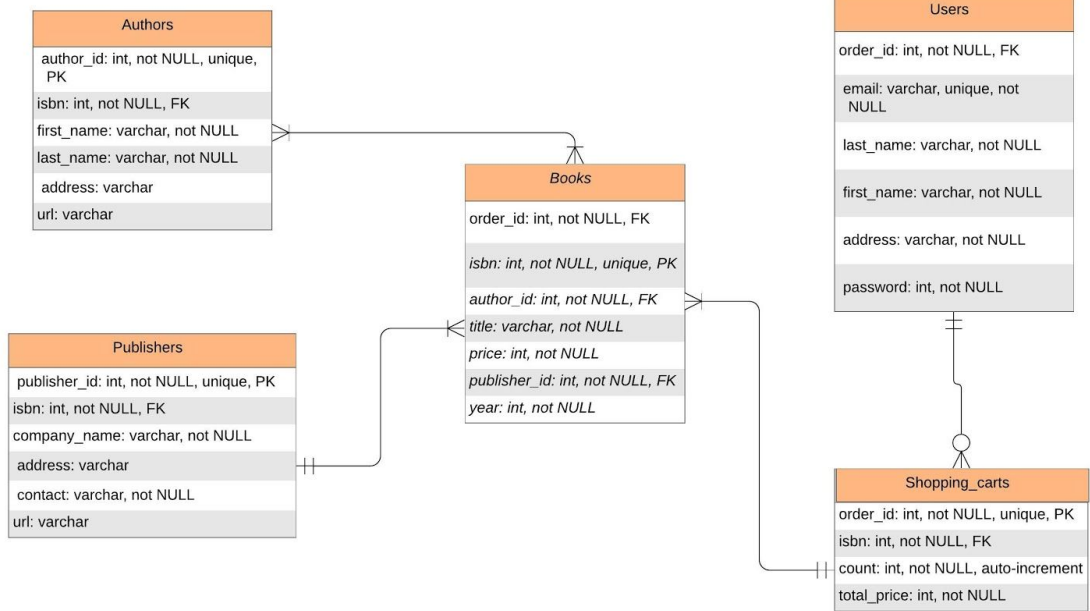## **Project Outline and Database Outline - Updated Version:**

- Users: saves the user information who uses our website.
    - order_id: int, not NULL, FK
    - email: varchar, unique; only one email per user, not NULL
    - last_name: varchar, not NULL
    - first_name: varchar, not NULL
    - address: varchar, not NULL
    - password: int, not NULL
    - <u>relationship</u>: a 1:M relationship between User and Shopping Cart is implemented with Email to find their orders.

- Shopping_cart: saves the user's chosen books before purchases those.
    - order_id: int, not NULL, unique, PK
    - isbn: int, not NULL, FK
    - count: int, not NULL, auto-increment
    - total_price: int, not NULL
    - <u>relationship</u>: a 1:M relationship between Shopping Cart, Book, and User is implemented with Order_ID, Customer_email, and ISBN to order books for certain users.

- Books: saves the details of the book.
    - order_id: int, not NULL, FK
    - isbn: int, not NULL, unique, PK
    - author_id: int, not NULL, FK
    - title: varchar, not NULL
    - price: int, not NULL
    - publisher_id: int, not NULL, FK
    - year: int, not NULL
    - <u>relationship</u>: a M:1 relationship between Book, Shopping Cart, Author, and Publisher is implemented with Author_name, Publisher_name, and ISBN to find the right book.

- Authors: keeps the information about the author.
    - author_id: int, not NULL, unique, PK
    - isbn: int, not NULL, FK

- first_name: varchar, not NULL
- last_name: varchar, not NULL
- address: varchar
- url: varchar
- <u>relationship</u>: a M:M relationship between Author and Book is implemented with Name to find books under that author.

- Publishers: keeps the information about the publisher.
  - publisher_id: int, not NULL, unique, PK
  - isbn: int, not NULL, FK
  - company_name: varchar, not NULL
  - address: varchar
  - contact: varchar, not NULL
  - url: varchar
  - <u>relationship</u>: a 1:M relationship between Publisher and Book is implemented with Name to find books under that publisher.

Entity-Relationship Diagram:

Project Step 2 ER Diagram Final ver.

Group 7 : Kimchi Taco

Authors

author_id: int, not NULL, unique, PK

isbn: int, not NULL, FK

first_name: varchar, not NULL

last_name: varchar, not NULL

address: varchar

url: varchar

Users

order_id: int, not NULL, FK

email: varchar, unique, not NULL

last_name: varchar, not NULL

first_name: varchar, not NULL

address: varchar, not NULL

password: int, not NULL

Books

order_id: int, not NULL, FK

isbn: int, not NULL, unique, PK

author_id: int, not NULL, FK

title: varchar, not NULL

price: int, not NULL

publisher_id: int, not NULL, FK

year: int, not NULL

Publishers

publisher_id: int, not NULL, unique, PK

isbn: int, not NULL, FK

company_name: varchar, not NULL

address: varchar

contact: varchar, not NULL

url: varchar

Shopping_carts

order_id: int, not NULL, unique, PK

isbn: int, not NULL, FK

count: int, not NULL, auto-increment

total_price: int, not NULL

Schema:

Users

order_id
email
last_name
first_name
address
password

Shopping cart

order_id
isbn
count
total_price

book_author

author_id	isbn

Books

order_id
isbn
author_id
title
price
publisher_id
year

Authors

author_id
isbn
first_name
last_name
address
url

Publishers

publisher_id
isbn
company_name
address
contact
url