Final Report
Group 1

Team Member Contributions:

Tyler Burkhart - Database Management
Caitlin Jones - Database Management
Logan Shelby - Web Application Development
Bryan Willis - Web Application Development

       We worked in modules for this project. The first module is the database itself and the second module is the website. Tyler and Caitlin took charge of creating, populating, and modifying the database as necessary. Logan and Bryan were proactive in creating the various PHP documents for the website and uploading them to WebHost. If the website module team encountered an error that could only be solved by modifying the database, the database team would evaluate and make the change. Anytime a change was needed in the database, the website development team was informed in case they needed to make changes in the website or would prefer the change not be made.

Database Design & Assumptions:

       Our database consists of 6 tables: Keywords, Books, Orders, Reviews, Users, and Authors. We used 000WebHost to host our website and database. Our primary keys are ISBN and UserID. As you can see from the database schema section, the ISBN and UserID are also foreign keys in several tables. We assumed that all data that would be inserted fits in each corresponding column, for instance a name is not longer than 256 characters. We also assumed that author names would only be referenced by last name and wouldn't be multivalued. Shipping address and billing addresses are commonly the same, but we assume that they could be different.

Schema

Table: Author

Column	Type	Key
Author	varchar	No
ISBN	varchar	Foreign

Table: Review

Column	Type	Key
Comment	text	no
Score	int	no
ISBN	varchar	foreign
UserID	int	foreign

Table: Books

Column	Type	Key
PublishDate	Year	No
Publisher	varchar	No
Language	varchar	No
QtyStock	int	No
Price	decimal	No
Subject	varchar	No
ISBN	varchar	Primary
Title	varchar	No
Summary	varchar	No

Table: Keywords

Column	Type	Key
Keyword	varchar	No
ISBN	varchar	Foreign

Table: User

Column	Type	Key
Type	varchar	no
Gender	char	no
Password	varchar	no
FirstName	varchar	no
MiddleName	varchar	no
LastName	varchar	no
Email	varchar	no
Age	int	no
UserID	int	primary

Table: Orders

Column	Type	Key
Date	datetime	no
Qty	int	no
Cost	decimal	no
Status	varchar	no
CardNum	bigint	no
BillStr	varchar	no
BillCity	varchar	no
BillState	varchar	no
BillZIP	int	no
ShipStr	varchar	no
ShipCity	varchar	no
ShipState	varchar	no
ShipZIP	int	no
Email	varchar	no
ISBN	varchar	foreign
UserID	int	foreign

ER Diagram
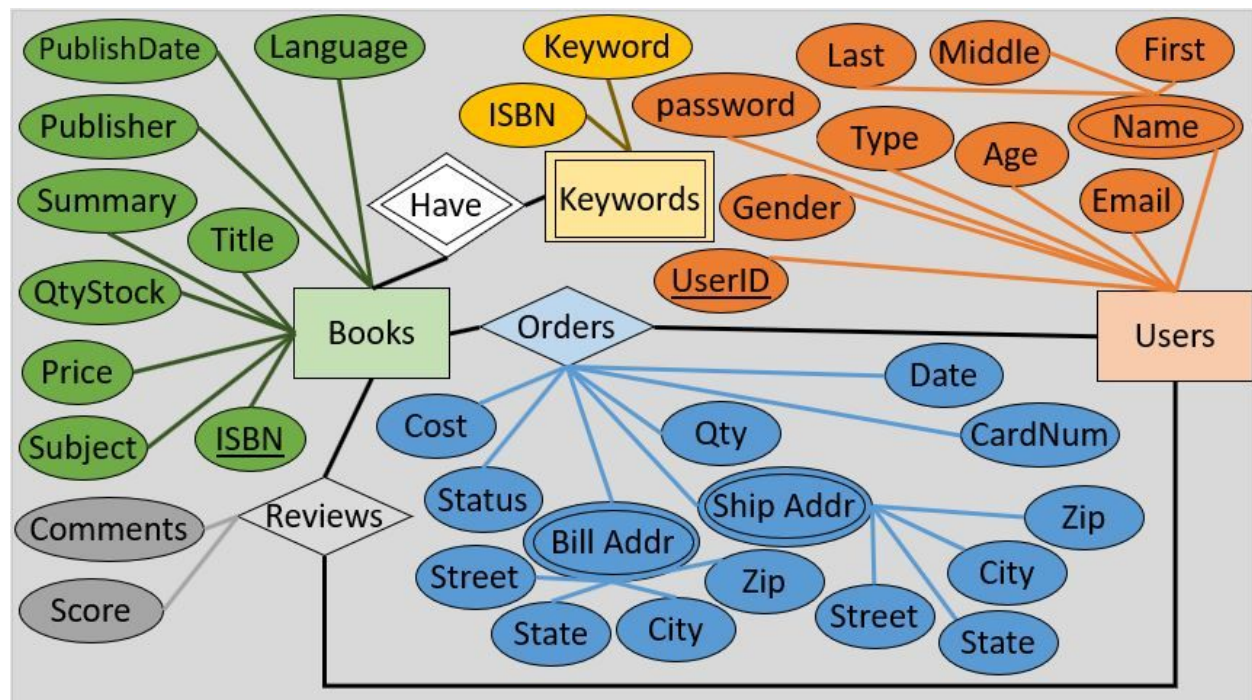
Normal Forms

All relations are in 3NF because they meet the qualifications of 2NF and all the attributes are determined only by the candidate key.

Testing

In order to test our website, we did repetition testing. We would code a feature, then test whether it performed the way we expected. If it didn't we tweaked it until it did, then move on to the next feature.

Experiences and Challenges

We faced a few challenges while using WebHost. We found that it wasn't very reliable, but for being both free to use and everyone had access to it, it was a decent resource. In the future, if we had to do this project over again, we would have still used an online resource like WebHost, but perhaps a more reliable one. The phpMyAdmin resource it contained made making and modifying the database quick and easy. We were able to modify the database through text boxes and drop down menus, as well as being able to write queries. It also has a convenient import and export button in case we had to restore the database from a SQL dump.

Since none of us knew PHP, learning about what we needed to implement a full website was difficult. When you have to load all of the PHP files to WebHost in order to test them, time becomes an issue that has to be strictly paired with patience.

Website Functionalities

All of the minimal functionalities have been met for this project. A report with screenshots is provided below showing completion of each required functionality. We have also managed to get 2 bonus functionalities completed, one being the wish list (same function as a shopping cart) and being hosted on a server for public use (host is 000webhost). A clickable link is here Or copy this into your web browser: https://dabestdb.000webhostapp.com/405G/indexdb.php

1. Allowing a user to register

Website side of showing successful registry

Before registering user logan shelby (database end)

After registering user logan shelby (database end)

2. Allowing the assignment of users to managers on the website

Before assigning Logan Shelby as a manager (website end)
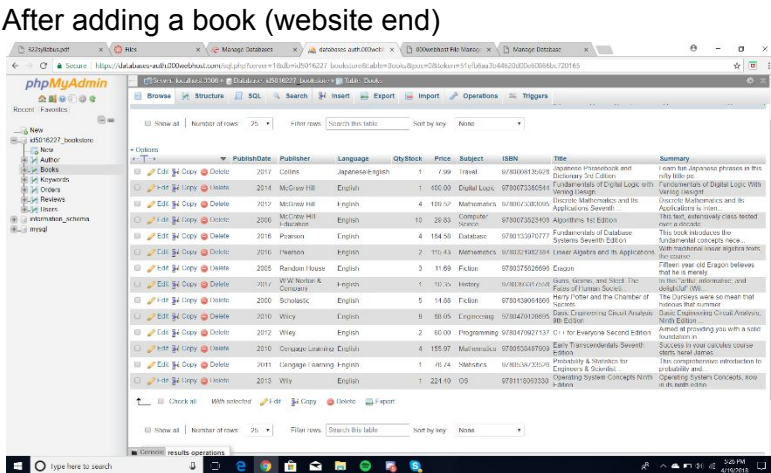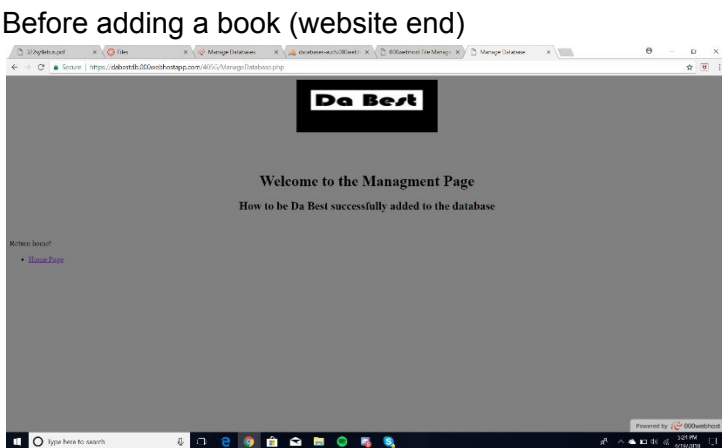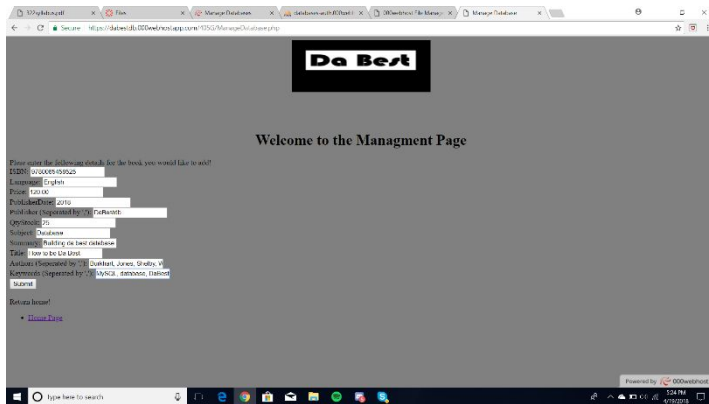
After assigning Logan Shelby as a manager (website end)

Before the assignment of Logan Shelby as a manager (database end)

After the assignment of Logan Shelby as a manager (database end)

3. Allowing a manager to add, update, and delete books; categorize books into one or more subjects; and add, update, and delete book keywords.

Before adding a book (website end)

After adding a book (website end)

Before adding a book (database end)
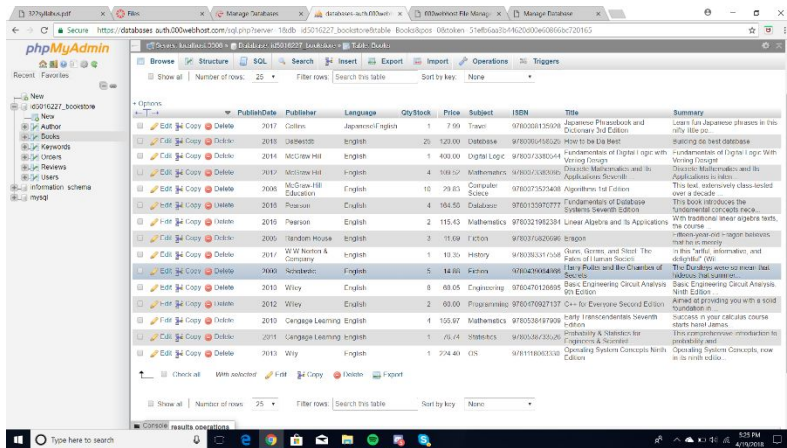
After adding a book (database end)

Deleting a book:
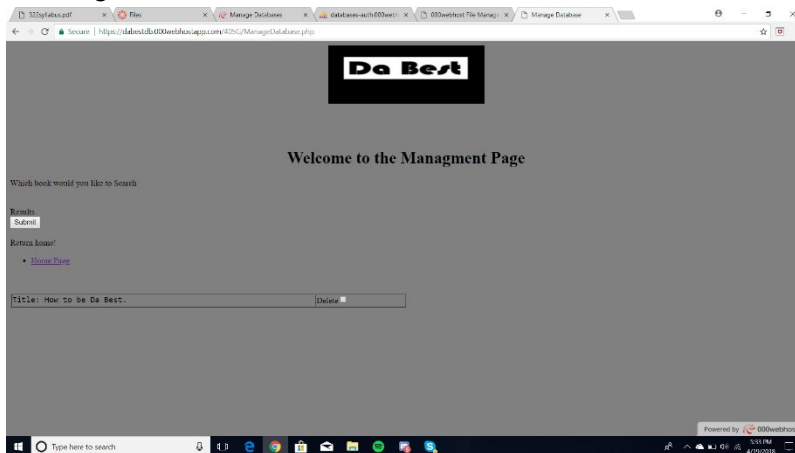
Before deleting my added book from above (website end)
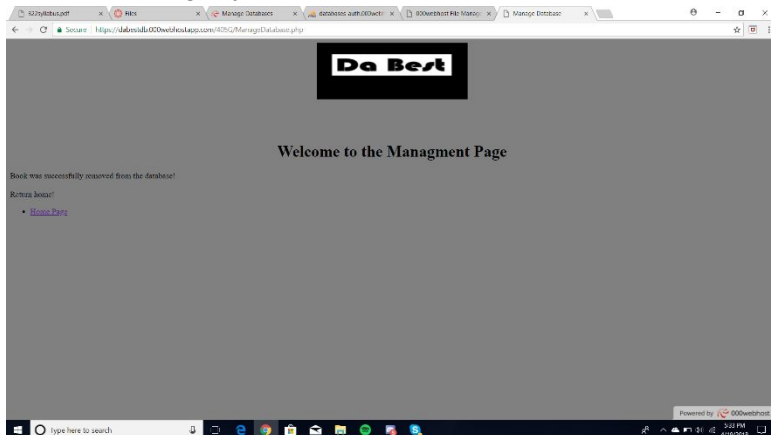
After deleting my added book from above (website end)
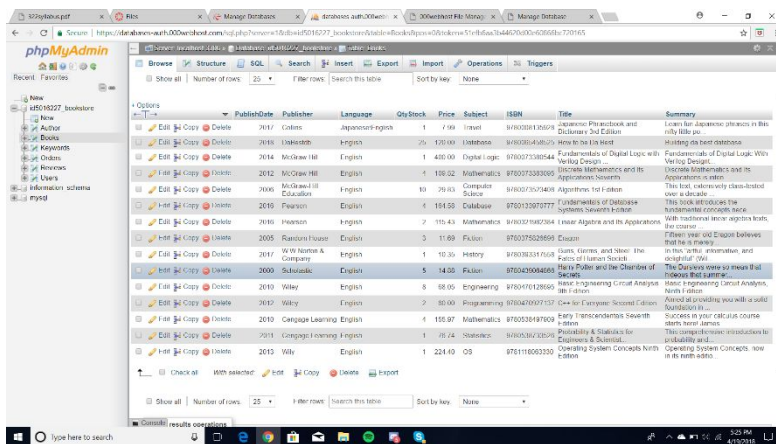
Before deleting my added book from above (database end)
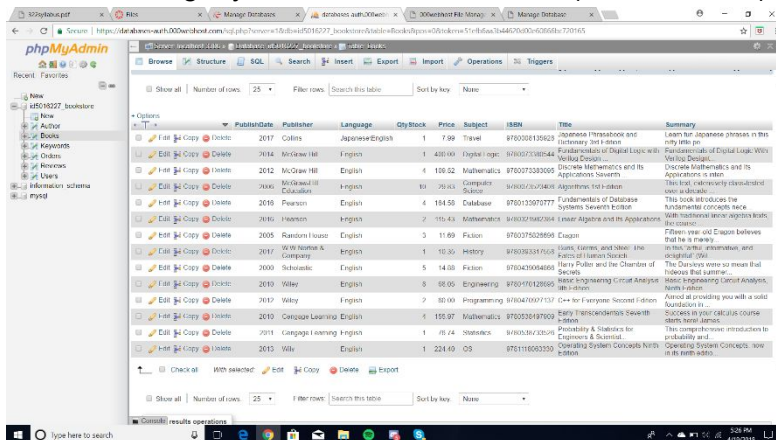
After deleting my added book from above (database end)

4. Allowing a user to find books using faceted search (search by title, author, subject, keyword, date published, and price range)
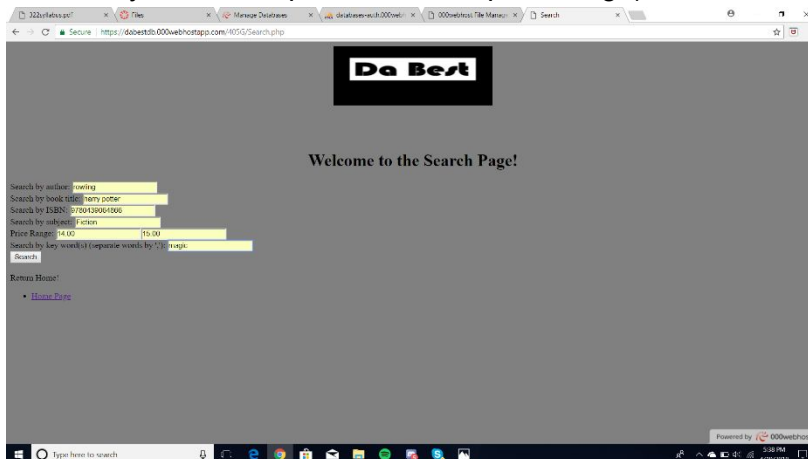
Before search for the book Harry Potter
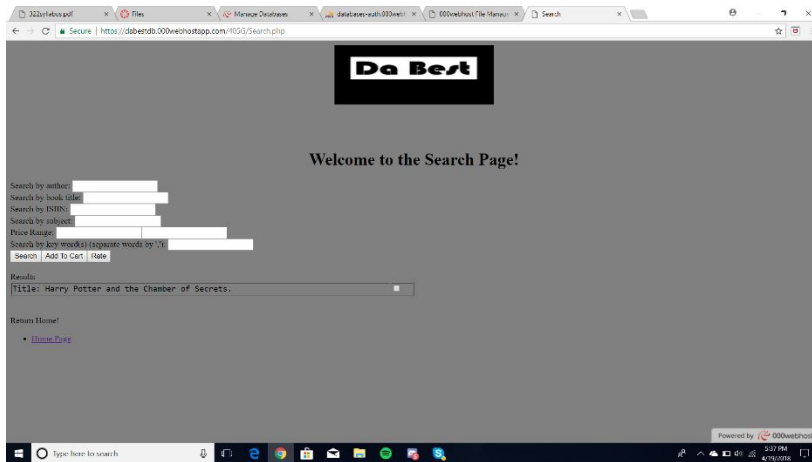
After search for the book Harry Potter

5. Allowing a registered user to order books
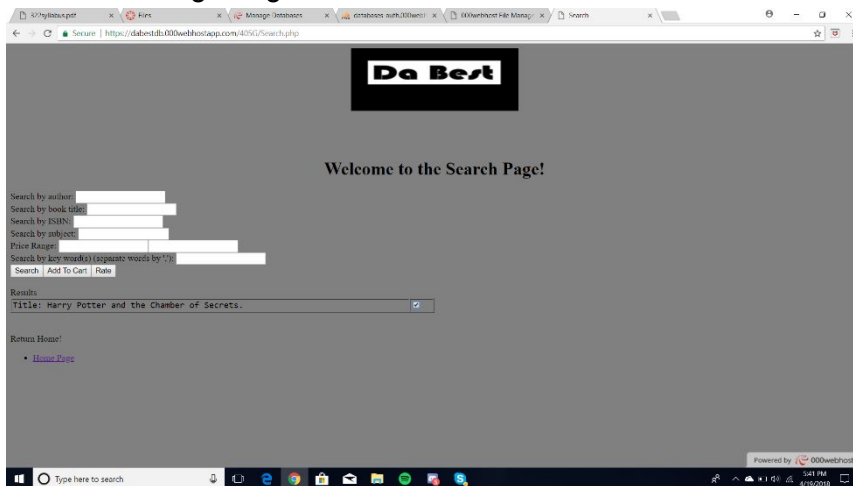
Before ordering, I had to search for Harry Potter
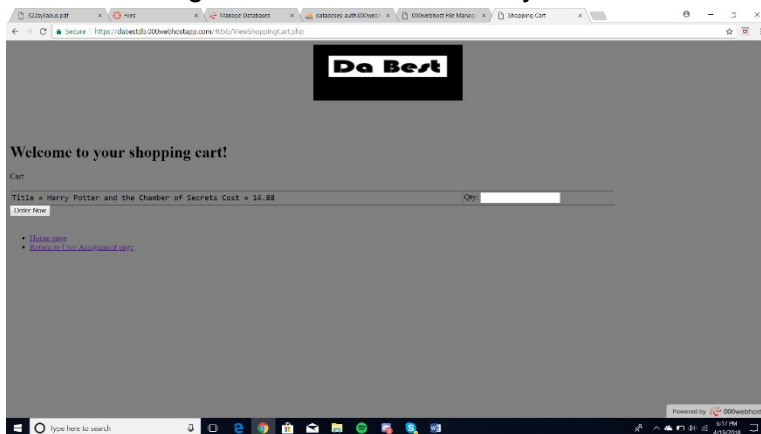
Before ordering the book, it was put in my shopping cart (BONUS: Also a wish-list functionality)
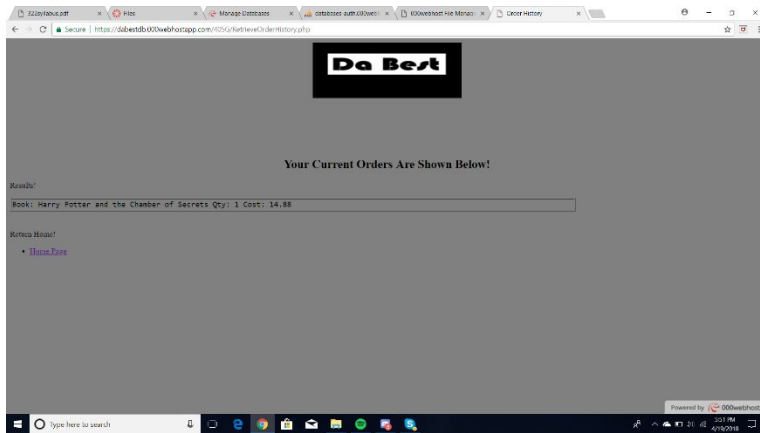
After ordering it from my shopping cart, here is my order for Harry Potter
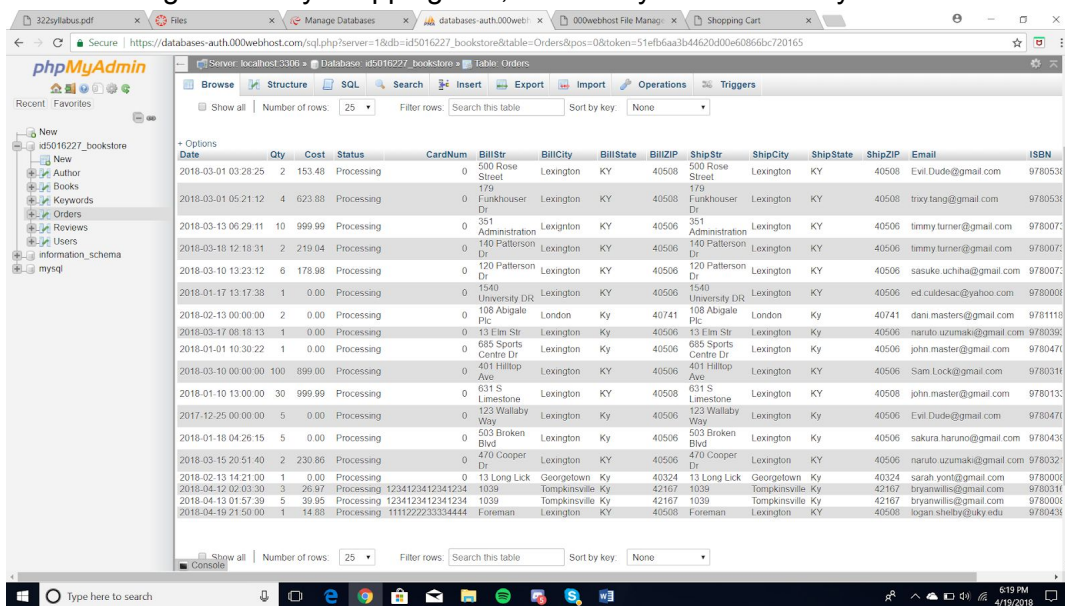
In the database, we see that the order is successfully shown in the back-end!

6. Allowing a registered user to rate and comment on books
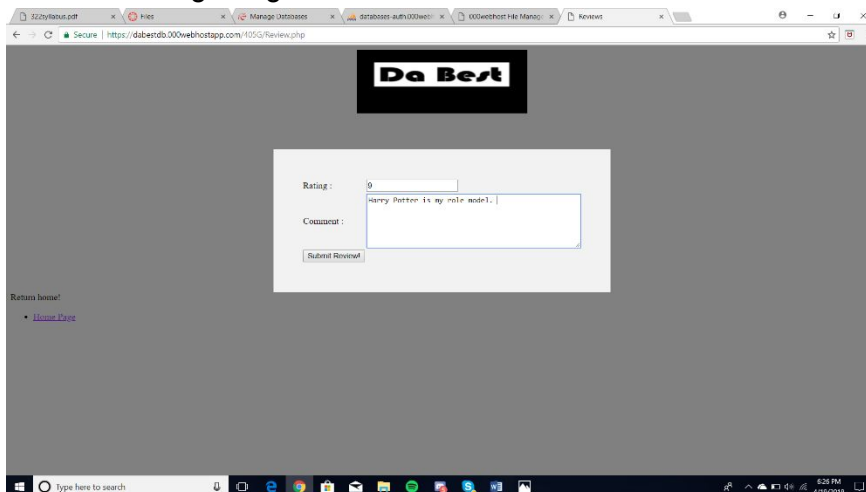
Before rating Harry Potter (website end)
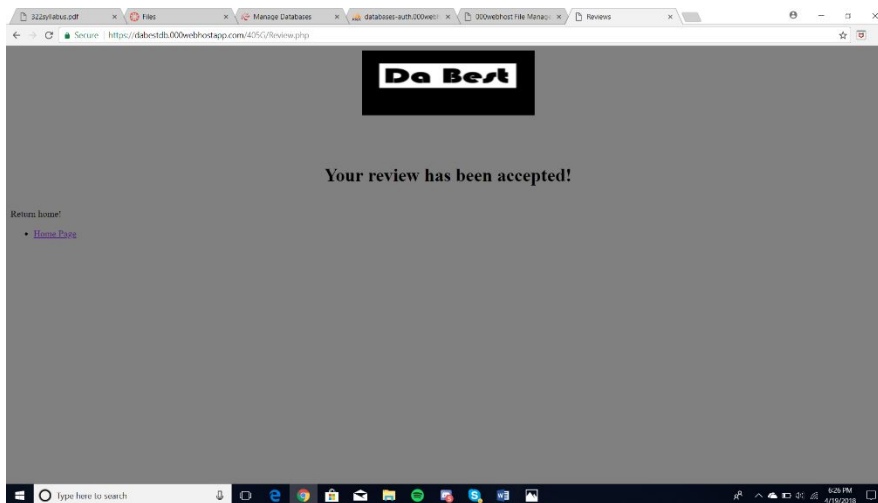
After rating Harry Potter (website end)
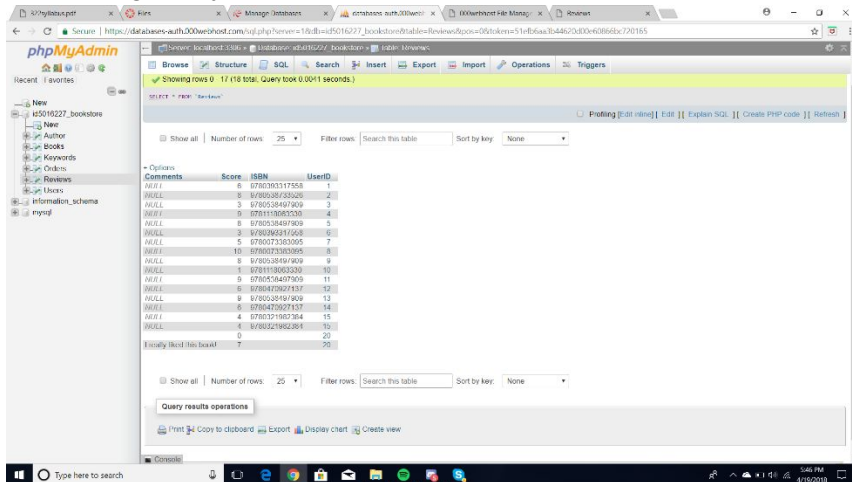
Before rating Harry Potter (database end)
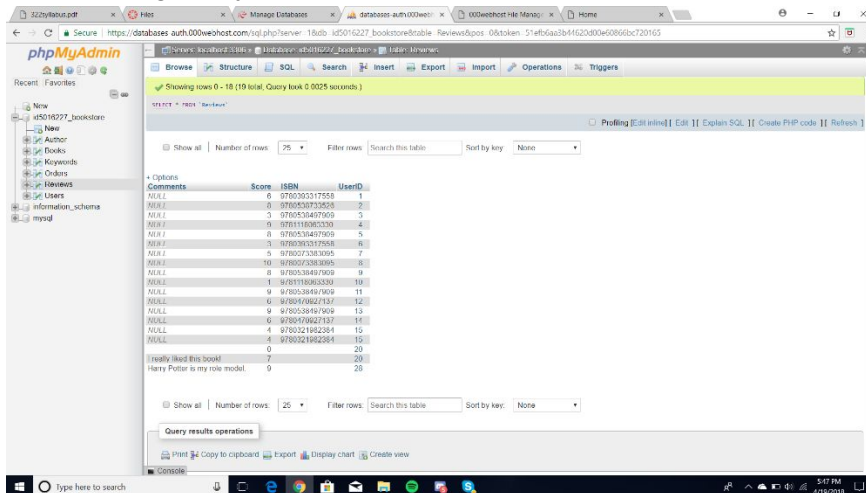
After rating Harry Potter (database end)

7. Allowing a registered user to view their order history (this is mainly shown in 5)
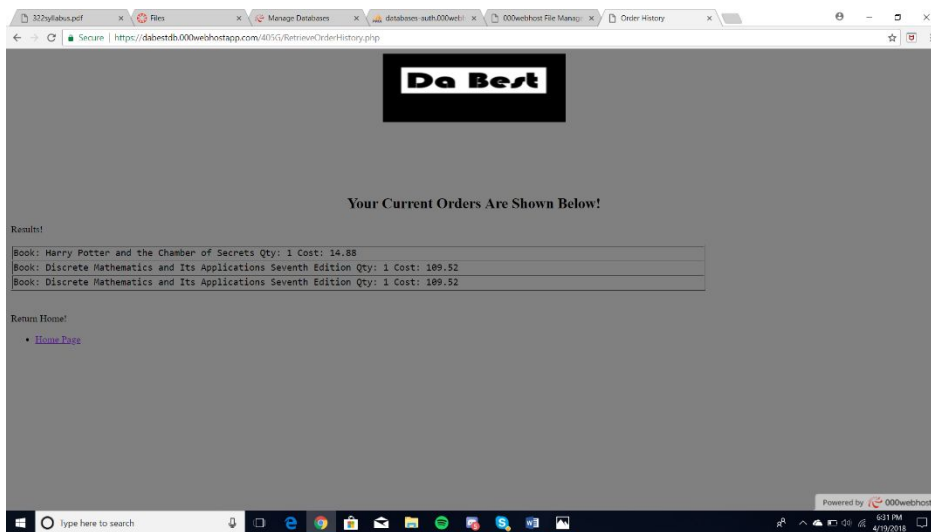
Ordered a few more books (website end)

Ordered a few more books (database end)