

URL: <http://classwork.engr.oregonstate.edu:60728/>

Project Step 4

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Sean & Sean Books: A Bookstore Run By Seans

Executive Summary

I (Sean Brady) used AI to write the Models, Routes and Controllers based on the MVC architecture from CS290. I started by writing 1 manually, the authors model, routes and controller, and then I prompted cursor to generate the rest based on my schema. It did well and saved a lot of time. I then reviewed the code and refined it for our use case. The code it gave first worked but lacked coherent user friendly error messages. For example, a 40X error wasn't very helpful when inserting a duplicate entry in an intersection table which had to be added later. I tried to have cursor setup the front end with shaden, but it failed to follow the docs and make a working project. I setup the front end manually. I then searched for a navbar to base the navbar for the website off of, I used that navbar as the base for the bookStore navbar. I also used chatGPT to generate the book store logo as I'm an engineer, not an artist. It took many refinements to get a logo that I was satisfied with. While AI helped fix the date picker bug where a user could select multiple dates, it broke the view book and update book views at the same time. I had to tell it that the date was the source of the issue. I also used AI to clean up my DML and PL SQL as I had lots of dead code left inside.

In this course, I learned that AI is good if you have good directions and a clear goal. For example, the MVC architecture for the backend worked because I knew I wanted that and not a bunch of slop in 1 file. AI was also good at creating custom components like my searchable select that I hadn't thought of. My experience in this class aligns with the trend of the industry, we are switching from SWEs being coders to SWEs being architects and decision makers.

The primary feedback we received over the course of this project was in regards to specific details, particularly within our schema creation. I (Sean Miller) was completely new to the idea of schemas and the implementation of them took some trial and error. Through helpful feedback, we managed to create what I consider to be a streamlined and well-crafted schema. Part of my favorite feedback was my interactions with my partner, Sean David Brady. Being a more experienced software engineer than myself, watching him work through the process of creating a robust database with a clean frontend was an incredibly helpful learning experience for me, including the opportunities I had to work through this large base of code for debugging or even simple comprehension.

Project Overview

With the abundance of books in publication, careful organization is required in order to maintain stock and track down difficult-to-discover reading material. *Sean & Sean Books* is a growing bookstore chain, which sold 8,000 books last year and is seeking to sell an additional 2,000 this year, with issues managing the essential data needed so that their business can flourish as their customer base expands. They currently have 220 customers in their database and seek to double that figure this year while maintaining an ease of accessing various information about those customers. Some copies of books sold out because inventory wasn't being correctly tracked in a timely manner, and *Sean and Sean Books* wants to avoid that in the future. We seek to simplify the processes and synthesize the data into easily accessible and useful information so that *Sean & Sean Books* can focus on their passion for spreading good literature to those around the globe.

Database Outline

Here are the entities that will be put in place to make a functioning database. All RELATIONSHIPS are not attributes.

Customers: Tracks the details of customers with whom we do business

- *customerID*: int, auto_increment, unique, not null, PK
- *firstName*: varchar(100), not null
- *lastName*: varchar(100), not null
- *email*: varchar(255),
- *phoneNumber*: char(10)
- **RELATIONSHIPS:** 1:M → **Orders**

Books: Tracks the details of various books

- *bookID*: int, auto_increment, unique, not null, PK
- *publicationDate*: date, not null
- *isbn-10*: int
- *isbn-13*: int
- *inStock*: tinyint, not null
- *price*: decimal, not null
- *inventoryQty*: int,
- *title*: varchar, not null
- *publisherID*: int, not null, FK from **Publishers**
- **RELATIONSHIPS:** M:M → **Orders**, M:M → **SLOCs**, M:M → **Authors**, M:M → **Genres**

Orders: Tracks the details of customer orders

- *orderID*: int, auto_increment, unique, not null, PK
- *orderDate*: date, not null
- *orderTime* : time, not null
- *total*: decimal(10,2), not null
- *taxRate*: decimal(6,4)
- *customerID*: int, not null FK from **Customers**
- *salesRateID*: int, not null FK from **SalesRateLocations**
- RELATIONSHIPS: M:M → **Books**, M:1 → **SalesRateLocation**, M:1 → **Customers**

SalesRateLocations: Tracks the tax rates in states and counties

- *salesRateID*: int, auto_increment, not null, unique, PK
- *taxRate*: decimal(6, 4), not null
- *county*: varchar(45), not null
- *state*: varchar(45), not null
- RELATIONSHIPS: 1:M → **Orders**

Intersection Tables

OrderItems: Intersection table for the M:M relationship between **Orders** and **Books**

- *orderItemID*: int, auto_increment, unique, not null, PK
- *orderID*: int, not null, FK from **Orders**
- *bookID*: int, not null, FK from **Books**
- *quantity*: int, not null
- *individualPrice*: decimal(10,2), not null → Price for one book
- *subtotal*: decimal(10,2), not null → *individualPrice* x *quantity*
- RELATIONSHIPS: M:1 → **Books**, M:1 → **Orders**

BookLocations: Intersection table for the M:M relation for **Books**

- *bookID*: int, not null, FK,PK from **Books**
- *slocID*: int, not null, FK,PK from **SLOCS**
- RELATIONSHIPS: M:1 → **Books**, M:1 → **SLOCS**

BookGenres: Intersection table for the M:M relationship between **Books** and **Genres**

- *genreID*: int, not null, FK,PK from **Genres**
- *bookID*, int, not null, FK, PKfrom **Books**
- RELATIONSHIPS: M:1 → **Books** M:1 → **Genres**

BookAuthors: Intersection table for the M:M relationship between **Books** and **Authors**

- *authorID*: int, not null, FK,PK from Authors
- *bookID*, int, not null, FK,PK from Books

- RELATIONSHIPS: M:1 → **Books** M:1 → **Authors**

Category Tables

Genres: Tracks the different genre types a book can have as a category table

- *genreID*: int, auto_increment, not null, unique, PK
- *genreName*: varchar, not null
- RELATIONSHIPS: M:M → **Books**

Authors: Tracks the different authors types a book can have as a category table

- *authorID*: int, auto_increment, not null, unique, PK
- *firstName*: varchar(80), not null
- *middleName*: varchar(80),
- *lastName*: varchar(80),
- *fullName*: varchar(243), not null,
- RELATIONSHIPS: M:M → **Books**

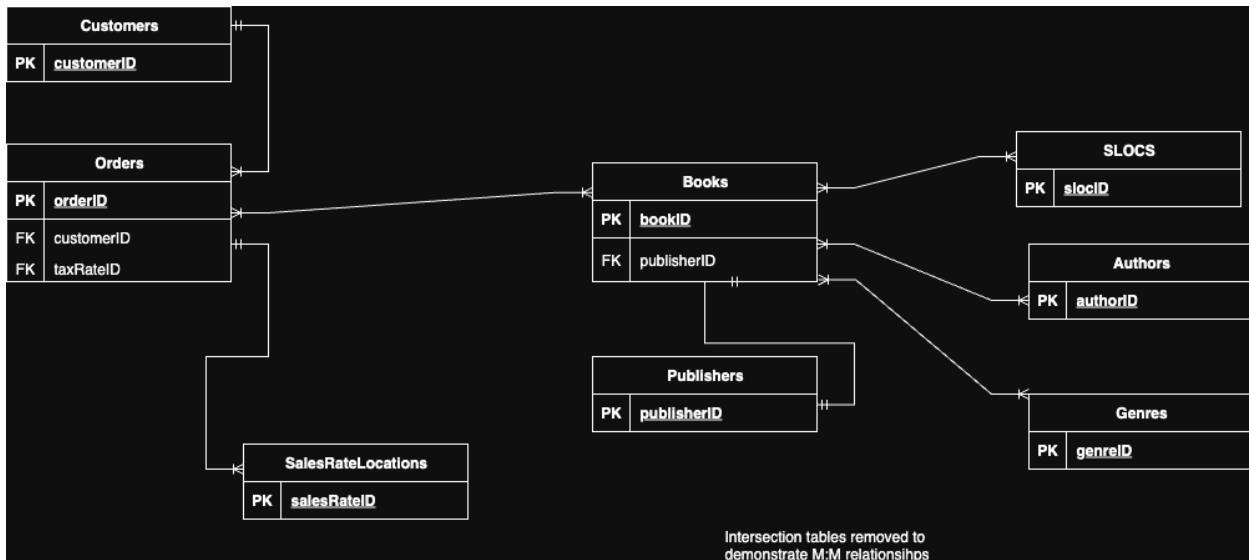
Publishers: Tracks the different publishers a book can have as a category table

- *publisherID*: int, auto_increment, not null, unique, PK
- *publisherName*: varchar, not null
- RELATIONSHIPS: 1:M → **Books**

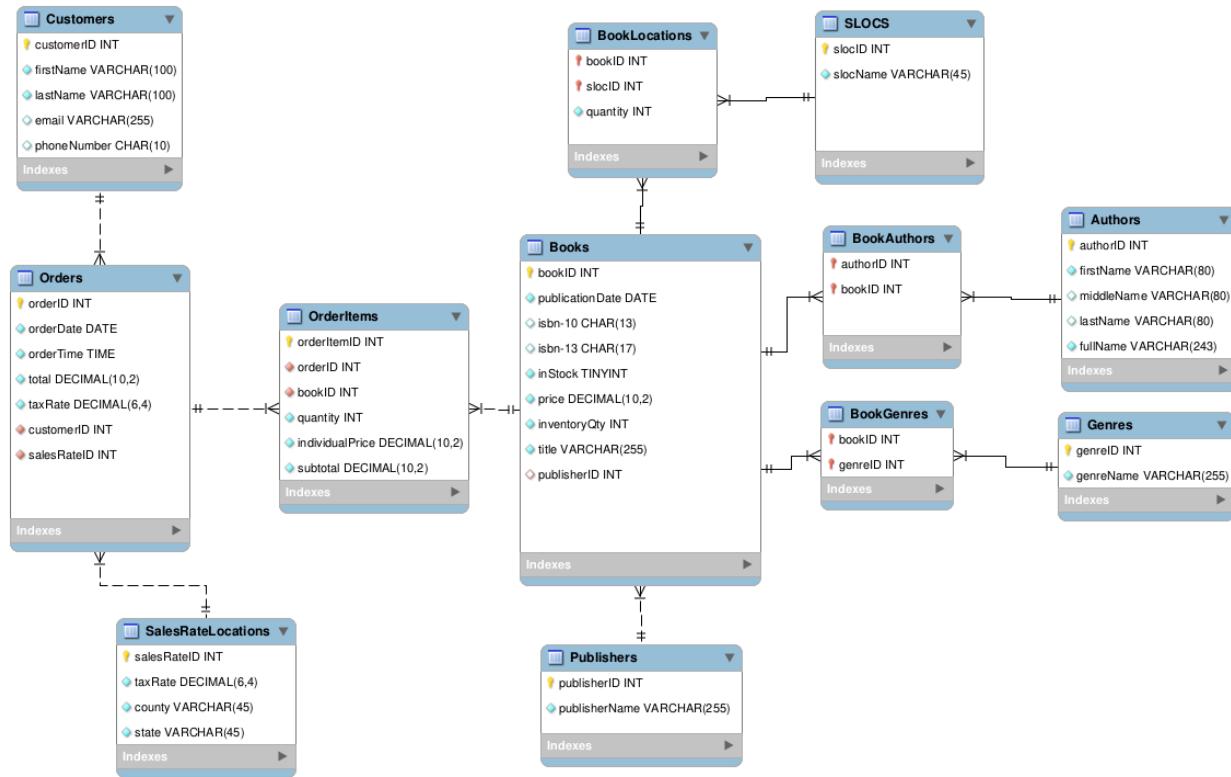
SLOCs: Tracks the storage locations as a category table

- *slocID*: int, auto_increment, not null, PK
- *slocName*: varchar(45), not null
- RELATIONSHIPS: M:M → **Books**

Entity Relationship Diagram



Schema Diagram



Example Data

Customers

- firstName = ‘Reggie’, lastName = ‘Reggerson’, email = ‘regreg@reg.com’, phoneNumber = 3333888902
- firstName = ‘Gail’, lastName = ‘Nightingstocks’, email = ‘gailsmail@gmail.com’’, phoneNumber = 2295730384
- firstName = ‘Filipe’, lastName = ‘Redsky’, email = ‘filipe@hotmail.com’’, phoneNumber = 5649836590

Orders

- orderDate = Oct. 01, 2025, orderTime = 21:12:11, total = \$45.61, taxRate = *select statement to find taxRate for Polk, IA*, customerId = *select statement to find customerId for Reg*, salesRateID = *select statement to find salesRateID for Polk, IA*
- orderDate = Nov. 05, 2025, orderTime = 23:01:42, total = \$61.21, taxRate = *select statement to find taxRate for Jerome, ID*, customerId = *select statement to find customerId for Gail*, salesRateID = *select statement to find salesRateID for Jerome, ID*

- orderDate = Dec. 09, 2025, orderTime = 08:24:24, total = \$112.09, taxRate = *select statement to find taxRate for San Francisco, CA*, customerID = *select statement to find customerID for Filipe*, salesRateID = *select statement to find salesRateID for San Francisco, CA*

SalesRateLocations

- taxRate = 4.2, county = ‘Polk’, state = ‘Iowa’
- taxRate = 5.1, county = ‘Jerome’, state = ‘Idaho’,
- taxRate = 8.625, county = ‘San Francisco’, state = ‘California’

OrderItems

- orderID = *select statement for proper order*, bookID = *select statement for Beloved*, quantity = 2, individualPrice = *select statement for Beloved price*, subtotal = *calculation from qty x individualPrice*
- orderID = *select statement for proper order*, bookID = *select statement for Inherent Vice*, quantity = 1, individualPrice = *select statement for Inherent Vice price*, subtotal = *calculation from qty x individualPrice*
- orderID = *select statement for proper order*, bookID = *select statement for Good Omens*, quantity = 3, individualPrice = *select statement for Good Omens price*, subtotal = *calculation from qty x individualPrice*

Books

- publicationDate = Aug. 4, 2008, isbn-10 = 143126850, isbn-13 = 978143126850, inStock = 5, price = \$15.99, inventoryQty = 5, title = ‘Inherent Vice’, publisherID = *select statement to find publisherID for Penguin Books*
- publicationDate = Sept. 1, 1978, isbn-10 = 1400033416, isbn-13 = 9781400033416, inStock = 7, price = \$17.99, inventoryQty = 7, title = ‘Beloved’, publisherID = *select statement to find publisherID for Vintage International*
- publicationDate = Nov. 8, 1984, isbn-10 = 0670691992, isbn-13 = 9780670691999, inStock = 1, price = \$18.99, inventoryQty = 6, title = ‘The Talisman’, publisherID = *select statement to find publisherID for Viking Press*
- publicationDate = Nov. 28, 2006, isbn-10 = 0060853980, isbn-13 = 9780060853983, inStock = 1, price = \$16.99, inventoryQty = 8, title = ‘Good Omens’, publisherID = *select statement to find publisherID for William Morrow*

Publishers

- publisherName = ‘Penguin Books’
- publisherName = ‘Vintage International’
- publisherName = ‘Viking Press’
- publisherName = ‘William Morrow’

BookLocations

- bookID = *select statement to find bookID for Beloved*, slocID = *select statement to find slocID for Orchard*, quantity = 8

- bookID = *select statement to find bookID for Inherent Vice*, slocID = *select statement to find slocID for SunWillow*, quantity = 12
- bookID = *select statement to find bookID for Good Omens*, slocID = *select statement to find slocID for Whiskey Pines*, quantity = 3

SLOCs

- slocName = ‘Orchard’
- slocName = ‘Sunwillow’
- slocName = ‘Whiskey Pines’

BookAuthors

- authorID = *select statement to find authorID for Morrison*, bookID = *select statement to find bookID for Beloved*
- authorID = *select statement to find authorID for Pynchon*, bookID = *select statement to find bookID for Inherent Vice*
- authorID = *select statement to find authorID for Gaiman*, bookID = *select statement to find bookID for Good Omens*

BookGenres

- genreID = *select statement to find genreID for Historical Fiction*, bookID = *select statement to find bookID for Beloved*
- genreID = *select statement to find genreID for Postmodern Fiction*, bookID = *select statement to find bookID for Inherent Vice*
- genreID = *select statement to find genreID for Science Fiction*, bookID = *select statement to find bookID for Good Omens*

Authors

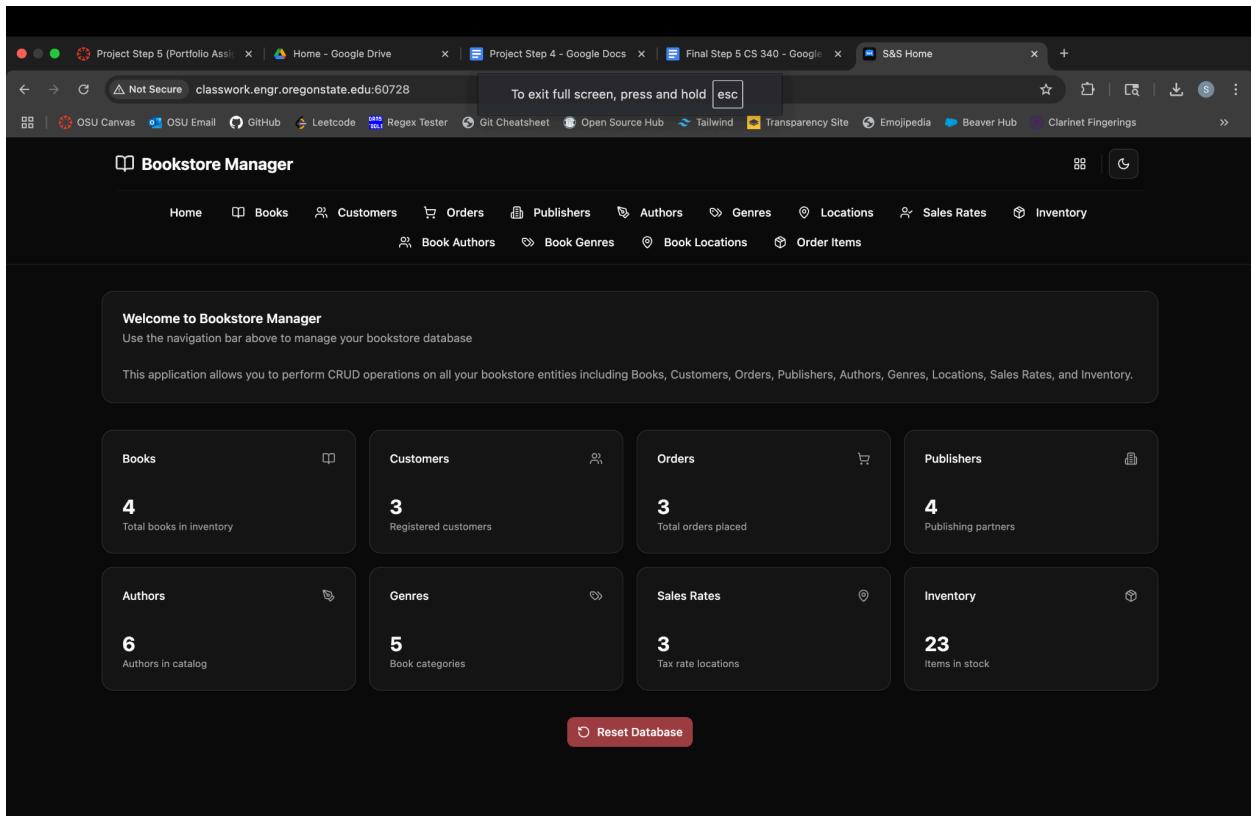
- firstName = ‘Toni’, lastName = ‘Morrison’
- firstName = ‘Thomas’, lastName = ‘Pynchon’
- firstName = ‘Stephen’, middleName = ‘Edwin’, lastName = ‘King’
- firstName = ‘Peter’, lastName = ‘Straub’
- firstName = ‘Neil’, middleName = ‘Richard’, lastName = ‘Gaiman’
- firstName = ‘Terry’, lastName = ‘Pratchett’

Genres

- genreName = ‘Historical Fiction’
- genreName = ‘Postmodern Fiction’
- genreName = ‘Horror Fiction’,
- genreName = ‘Science Fiction’,
- genreName = ‘Fantasy Fiction’

Screen Captures

Home Page



The screenshot shows a web browser window titled "Bookstore Manager" with a dark theme. The navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, and Inventory, along with sub-links for Book Authors, Book Genres, Book Locations, and Order Items. A message box at the top says "Welcome to Bookstore Manager" and "Use the navigation bar above to manage your bookstore database". Below this, a message states: "This application allows you to perform CRUD operations on all your bookstore entities including Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, and Inventory." The main content area displays eight cards with statistics: Books (4, Total books in inventory), Customers (3, Registered customers), Orders (3, Total orders placed), Publishers (4, Publishing partners), Authors (6, Authors in catalog), Genres (5, Book categories), Sales Rates (3, Tax rate locations), and Inventory (23, Items in stock). A red "Reset Database" button is located at the bottom center.

Entity	Count	Description
Books	4	Total books in inventory
Customers	3	Registered customers
Orders	3	Total orders placed
Publishers	4	Publishing partners
Authors	6	Authors in catalog
Genres	5	Book categories
Sales Rates	3	Tax rate locations
Inventory	23	Items in stock

Books Page (READ)

The screenshot shows a web browser window titled "S&S Books" with the URL "classwork.engr.oregonstate.edu:60728/books". The page is titled "Bookstore Manager" and features a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, and Inventory. Below the navigation bar are sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

The main content area is titled "Books Management" and includes a "View Options" dropdown set to "List Books". A search bar and a "Customize Columns" button are also present. The central part of the page displays a table of four books:

ID	Title	Publisher	Authors	Genres	Price	Stock	Actions
1	Inherent Vice Aug 4, 2009	Penguin Books	Thomas Pynchon	Postmodern Fiction	\$15.99	In Stock	...
2	Beloved Sep 1, 1987	Vintage International	Toni Morrison	Historical Fiction	\$17.99	In Stock	...
3	The Talisman Nov 8, 1984	Viking Press	Peter Straub Stephen Edwin King	Fantasy Fiction Horror Fiction	\$18.99	Out of Stock	...
4	Good Omens Nov 28, 2006	William Morrow	Neil Richard Gaiman	Science Fiction	\$16.99	In Stock	...

Books Page (CREATE)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Books". The page content is a "Bookstore Manager" application. At the top, there's a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, Book Authors, and Book Genres. Below the navigation is a dropdown menu for "View Options" and a "Create Book" button. A "Back to Books" link is also present. The main area is titled "Add New Book" and contains the following fields:

- Title:** A text input field with placeholder text "Enter book title".
- Publication Date:** A date picker field with placeholder text "Pick a date".
- ISBN-10:** A text input field containing "ISBN-10".
- ISBN-13:** A text input field containing "ISBN-13".
- Publisher:** A dropdown menu labeled "Select a publisher".
- Price:** A text input field containing "0.00".
- Inventory Quantity:** A note stating "Inventory will be calculated from book locations" followed by a warning icon and the text "Quantity is automatically calculated from BookLocations table".

At the bottom of the form is a "Create Book" button. To the right of the form, there's a small screenshot of a database table titled "Books" with columns like "Title", "Author", "Publisher", etc.

Books Page (UPDATE 1)

The screenshot shows a web browser window with multiple tabs open, including 'Project Step 5 (Portfolio Assi...', 'Home - Google Drive', 'Project Step 4 - Google Docs', 'Final Step 5 CS 340 - Google', and 'S&S Books'. The 'S&S Books' tab is active, displaying the 'Bookstore Manager' interface.

The main navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, Book Authors, and Book Genres. Below this is a secondary navigation bar with Book Details, Book Locations, Order Items, Storage Locations, and a search icon.

The central area is titled 'Book Details' and contains the following fields:

- Edit Book**: A note stating "Update book information. Inventory quantities are managed through BookLocations."
- Book ID**: Input field containing "1".
- Title**: Input field containing "Inherent Vice".
- Publication Date**: Input field containing "August 4th, 2009".
- ISBN-10**: Input field containing "0143126850".
- ISBN-13**: Input field containing "9780143126850".
- Publisher**: Input field containing "Penguin Books".
- Price**: Input field containing "15.99".
- Inventory Quantity**: A note stating "12 copies available" followed by "Quantity is automatically calculated from BookLocations table".

At the bottom are two buttons: "Update Book" and "Delete Book".

Books Page (UPDATE 2)

The screenshot shows a web-based application titled "Bookstore Manager" with a dark theme. The top navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, Book Authors, and Book Genres. Below the navigation is a sub-menu with Book Locations and Order Items.

Book Authors
Authors associated with this book

Book Authors
Authors for this book (1 total)

Author	Book	Actions
Thomas Pynchon	Inherent Vice	

+ Add Author to Book

Book Genres
Genres associated with this book

Book Genres
Genres for this book (1 total)

Genre	Book	Actions
Postmodern Fiction	Inherent Vice	

+ Add Genre to Book

Customers Page (READ)

The screenshot shows a web-based application titled "Bookstore Manager" with a dark theme. The top navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, Book Authors, and Book Genres. Below the navigation is a sub-navigation bar with links for Book Locations and Order Items.

The main content area displays two sections: "Book Authors" and "Book Genres".

Book Authors: This section lists the authors associated with the book "Inherent Vice". It includes a search bar, a table header with columns for Author, Book, and Actions, and a single row showing Thomas Pynchon as the author. The "Actions" column contains icons for viewing, editing, and deleting.

Author	Book	Actions
Thomas Pynchon	Inherent Vice	

Book Genres: This section lists the genres associated with the book "Inherent Vice". It includes a search bar, a table header with columns for Genre, Book, and Actions, and a single row showing Postmodern Fiction as the genre. The "Actions" column contains icons for viewing, editing, and deleting.

Genre	Book	Actions
Postmodern Fiction	Inherent Vice	

Customers Page (CREATE)

The screenshot shows a web browser window with multiple tabs open at the top. The active tab is titled "S&S Customers". The main content area is titled "Bookstore Manager" and "Customers Management". A sub-menu dropdown is open under "View Options" with the option "Create Customer" highlighted. Below this, a button labeled "← Back to Customers" is visible. A large, rounded rectangular form is centered on the page, titled "Add New Customer". It has two rows of input fields: "First Name" and "Last Name" (each with a placeholder "Enter first name" or "Enter last name"), and "Email" and "Phone Number" (each with a placeholder "Enter email address" or "Enter phone number"). Below these fields is a note: "Customer's email address (optional)" and "Customer's phone number (optional)". At the bottom of the form is a blue "Create Customer" button.

Customers Page (UPDATE)

The screenshot shows a web browser window with multiple tabs open, including "Project Step 5 (Portfolio Assi...", "Home - Google Drive", "Project Step 4 - Google Docs", "Final Step 5 CS 340 - Google Doc", and "S&S Customers". The main content area is titled "Bookstore Manager" and displays a navigation bar with links to Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, and Inventory. Below the navigation bar, there are sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

The main form is titled "Customer Details" and has a sub-header "Edit customer information". It contains fields for Customer ID (value: 1), First Name (Reggie), Last Name (Reggerson), Email (regreg@reg.com), and Phone Number (3333888902). There are also optional fields for Customer's email address and phone number. At the bottom of the form are two buttons: "Update Customer" (in white) and "Delete Customer" (in red).

Orders Page (READ)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Orders". The page itself is titled "Bookstore Manager" and has a sub-section titled "Orders Management". It features a search bar and a table listing three orders:

ID	Customer	Date & Time	Total	Location	Actions
#3	Filipe Redsky	Dec 9, 2025 08:24 AM	\$112.09 Tax: 8.630%	San Francisco, California	...
#1	Reggie Reggerson	Oct 1, 2025 09:12 PM	\$45.61 Tax: 4.200%	Polk, Iowa	...
#2	Gail Nightingstocks	Oct 1, 2025 09:12 PM	\$61.21 Tax: 5.100%	Jerome, Idaho	...

At the top of the page, there is a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

Orders Page (CREATE)

The screenshot shows a web browser window with multiple tabs open at the top. The active tab is titled "S&S Orders". The page content is for "Bookstore Manager" and specifically "Orders Management". A "View Options" dropdown menu is open, showing "Create Order" as the selected option. Below this is a "Back to Orders" button. The main area contains a form titled "Add New Order" with the sub-instruction "Add a new order to your bookstore database". The form fields include:

- Order Date: A date input field with the placeholder "mm/dd/yyyy".
- Order Time: A time input field with the placeholder "--:-- --".
- Total Amount: An input field containing the value "0".
- Tax Rate (%): An input field containing the value "0".
- Customer: A dropdown menu labeled "Select a customer".
- Sales Rate Location: A dropdown menu labeled "Select a location".

At the bottom of the form is a "Create Order" button.

Orders Page (UPDATE)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Orders". The page itself is titled "Orders Management" and features a sub-section titled "Order Details".

View Options: A dropdown menu set to "Edit Order".

Order ID: 3

Order Date: mm/dd/yyyy (input field)

Order Time: 08:24:24 AM

Total Amount: 112.09

Tax Rate (%): 0.0863

Customer: Filipe Redsky - filipe@hotmail.com

Sales Rate Location: San Francisco, California - 8.6300%

Buttons: "Update Order" (white button) and "Delete Order" (red button).

Publishers Page (READ)

The screenshot shows a web browser window titled "S&S Publishers" with a dark-themed interface. The top navigation bar includes links for Home, Books, Customers, Orders, Publishers (selected), Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

The main content area is titled "Publishers Management". It features a "View Options" dropdown set to "List Publishers". A search bar is present above a table. The table has columns for ID, Publisher Name, and Actions. The data is as follows:

ID	Publisher Name	Actions
2	Penguin Books	
3	Viking Press	
1	Vintage International	
4	William Morrow	

A button "+ Add Publisher" is located in the top right corner of the table area.

Publishers Page (CREATE)

The screenshot shows a web-based application titled "Bookstore Manager". The main navigation bar includes links for Home, Books, Customers, Orders, Publishers (selected), Authors, Genres, Locations, Sales Rates, and Inventory. Below this, there are sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

The central area is titled "Publishers Management" and features a "View Options" dropdown menu with "Create Publisher" selected. A "Back to Publishers" button is also present.

A modal window titled "Add New Publisher" is open, prompting the user to "Add a new publisher to your bookstore database". It contains a "Publisher Name" field with placeholder text "Enter publisher name" and a descriptive note "The name of the publishing company". A "Create Publisher" button is at the bottom of the modal.

Publishers Page (UPDATE)

The screenshot shows a web browser window with multiple tabs open, including "Project Step 5 (Portfolio Assi...", "Home - Google Drive", "Project Step 4 - Google Docs", "Final Step 5 CS 340 - Google Sheets", and "S&S Publishers". The main content area is titled "Bookstore Manager" and "Publishers Management". A dropdown menu "View Options" is open, showing "Edit Publisher". Below it, a "Back to Publishers" link is visible. The central part of the screen is a modal dialog titled "Edit Publisher" with the sub-instruction "Update publisher information". It contains two input fields: "Publisher ID" with the value "2" and "Unique identifier for this publisher" and "Publisher Name" with the value "Penguin Books" and the sub-instruction "The name of the publishing company". At the bottom of the modal are two buttons: "Update Publisher" (in white) and "Delete Publisher" (in red).

Authors Page (READ)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Authors". The page itself is a dark-themed interface for managing bookstore data. At the top, there's a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, and Inventory. Below this, a secondary navigation bar includes Book Authors, Book Genres, Book Locations, and Order Items. The main content area is titled "Authors Management" and features a "View Options" dropdown set to "List Authors". A search bar allows users to "Search authors by name...". The central part of the page is a table listing six authors:

ID	Name	Actions
1	Toni Morrison	...
2	Thomas Pynchon	...
3	Stephen Edwin King	...
4	Peter Straub	...
5	Neil Richard Gaiman	...
6	Terry Pratchett	...

A button labeled "+ Add Author" is located in the top right corner of the table area.

Authors Page (CREATE)

The screenshot shows a web browser window with multiple tabs open, including "Project Step 5 (Portfolio Assi...", "Home - Google Drive", "Project Step 4 - Google Docs", "Final Step 5 CS 340 - Google Sheets", and "S&S Authors". The main content area is titled "Bookstore Manager" and "Authors Management". A dropdown menu under "View Options" shows "Create Author". Below it is a "Back to Authors" link. A modal dialog box is open, titled "Add New Author", with the sub-instruction "Add a new author to your bookstore database". It contains three input fields: "First Name" (with placeholder "Enter first name" and note "Required"), "Middle Name" (with placeholder "Enter middle name (option)" and note "Optional"), and "Last Name" (with placeholder "Enter last name" and note "Optional"). A "Create Author" button is at the bottom of the modal.

Authors Page (UPDATE)

The screenshot shows a web browser window with multiple tabs open, including "Project Step 5 (Portfolio Assi...", "Home - Google Drive", "Project Step 4 - Google Docs", "Final Step 5 CS 340 - Google Doc", and "S&S Authors". The main content area is titled "Bookstore Manager" and "Authors Management". A sub-menu bar includes "Home", "Books", "Customers", "Orders", "Publishers", "Authors", "Genres", "Locations", "Sales Rates", and "Inventory", with "Edit Author" currently selected. Below this is a detailed "Edit Author" form for an author with ID 1, named Toni Morrison. The form fields are labeled "First Name" (Toni), "Middle Name" (Enter middle name (option)), and "Last Name" (Morrison). Status indicators show "Required" for First Name, "Optional" for Middle Name, and "Optional" for Last Name. Buttons for "Update Author" and "Delete Author" are at the bottom.

View Options

Edit Author

← Back to Authors

Edit Author
Update author information

Author ID
1
Unique identifier for this author

First Name	Middle Name	Last Name
Toni	Enter middle name (option)	Morrison

Required Optional Optional

Update Author Delete Author

Genres Page (READ)

The screenshot shows a web-based application titled "Bookstore Manager" with a dark theme. The top navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

The main content area is titled "Genres Management". It features a "View Options" dropdown set to "List Genres". A search bar is present above a table. The table has columns for ID, Genre Name, and Actions. The data is as follows:

ID	Genre Name	Actions
5	Fantasy Fiction	
2	Historical Fiction	
3	Horror Fiction	
1	Postmodern Fiction	
4	Science Fiction	

A button labeled "+ Add Genre" is located in the top right corner of the table area.

Genres Page (CREATE)

The screenshot shows a web browser window with multiple tabs open, including "Project Step 5 (Portfolio Assi...", "Home - Google Drive", "Project Step 4 - Google Docs", "Final Step 5 CS 340 - Google Doc", and "S&S Genres". The main content area is titled "Bookstore Manager" and displays a navigation bar with links to Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

The central area is titled "Genres Management" and features a "View Options" dropdown menu with "Create Genre" selected. Below this is a "Back to Genres" link. A modal dialog box is open, titled "Add New Genre", with the sub-instruction "Add a new genre to your bookstore database". It contains a "Genre Name" field with placeholder text "Enter genre name" and a descriptive note "The name of the book genre". At the bottom of the modal is a "Create Genre" button.

Genres Page (UPDATE)

The screenshot shows a web browser window for the "Bookstore Manager" application. The URL in the address bar is `classwork.engr.oregonstate.edu:60728/genres`. The page title is "Genres Management". A dropdown menu "Edit Genre" is open, showing options "View Options" and "Edit Genre". Below the dropdown is a "Back to Genres" button. The main content area contains a form titled "Edit Genre" with the sub-instruction "Update genre information". The form fields are: "Genre ID" (input value: 5), "Genre Name" (input value: Fantasy Fiction), and a description "The name of the book genre". At the bottom of the form are two buttons: "Update Genre" (white background) and "Delete Genre" (red background).

Locations Page (READ)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Locations". The page itself is titled "Bookstore Manager" and has a sub-section titled "Locations Management". A dropdown menu "View Options" is set to "List Locations". Below this, a section titled "Storage Locations" displays three entries: "Orchard", "Sunwillow", and "Whiskey Pines". Each entry has an "Actions" column with icons for edit and delete.

ID	Location Name	Actions
#1	Orchard	
#2	Sunwillow	
#3	Whiskey Pines	

Locations Page (CREATE)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Locations". The page itself is titled "Bookstore Manager" and has a dark theme. In the top navigation bar, there are links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items. Below the navigation, a section titled "Locations Management" contains a "View Options" dropdown set to "Create Location". A large, rounded rectangular form is centered on the page. It has a heading "Add New Storage Location" with a circular icon containing a checkmark. Below this, a sub-instruction "Add a new storage location to your bookstore database" is displayed. The main input field is labeled "Location Name" and contains the placeholder "Enter location name". Below the input field is a descriptive text: "The name of the storage location". At the bottom of the form is a button labeled "Create Location".

Locations Page (UPDATE)

The screenshot shows a web browser window with multiple tabs open, including "Project Step 5 (Portfolio Assi...", "Home - Google Drive", "Project Step 4 - Google Docs", "Final Step 5 CS 340 - Google Sheets", and "S&S Locations". The main content area is titled "Bookstore Manager" and "Locations Management". A dropdown menu "View Options" is set to "Edit Location". A modal dialog box is open, titled "Edit Storage Location", with the sub-instruction "Update storage location information". It contains two fields: "Location ID" with value "1" and "Location Name" with value "Orchard". At the bottom of the modal are two buttons: "Update Location" (white background) and "Delete Location" (red background).

Sales Rate Page (READ)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Sales Rates". The URL in the address bar is "classwork.engr.oregonstate.edu:60728/sales-rates". The page itself is titled "Bookstore Manager" and features a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

The main content area is titled "Sales Rates Management" and includes a "View Options" dropdown set to "List Sales Rates". Below this is a section titled "Sales Rate Locations" with a sub-instruction "Manage your bookstore's sales tax rates by location (3 total)". A search bar is present above a table.

The table has columns for ID, Location, Tax Rate, and Actions. It contains three rows of data:

ID	Location	Tax Rate	Actions
3	San Francisco, California	8.6300%	
2	Jerome, Idaho	5.1000%	
1	Polk, Iowa	4.2000%	

A button labeled "+ Add Sales Rate Location" is located in the top right corner of the table area.

Sales Rate Page (CREATE)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Sales Rates". The page itself is titled "Sales Rates Management" and features a dark-themed interface. At the top, there's a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and several sub-links like Book Authors, Book Genres, Book Locations, and Order Items. Below the navigation, there's a "View Options" dropdown set to "Create Sales Rate". A "Back to Sales Rates" link is also present. The main content area is a form titled "Add New Sales Rate Location" with the sub-instruction "Add a new sales rate location to your bookstore database". The form fields are: "County" (input field placeholder "Enter county"), "State" (input field placeholder "Enter state"), and "Tax Rate (%)" (input field placeholder "0.00"). Below the form is a "Create Sales Rate Location" button.

Sales Rate Page (UPDATE)

The screenshot shows a web browser window with a dark-themed interface. The address bar displays "Not Secure classwork.engr.oregonstate.edu:60728/sales-rates". The page title is "S&S Sales Rates". Below the title, the navigation menu includes "Home", "Books", "Customers", "Orders", "Publishers", "Authors", "Genres", "Locations", "Sales Rates", "Inventory", "Book Authors", "Book Genres", "Book Locations", and "Order Items".

The main content area is titled "Sales Rates Management". It features a "View Options" dropdown set to "Edit Sales Rate" and a "Back to Sales Rates" link. A modal dialog box is open, titled "Edit Sales Rate Location", with the sub-instruction "Update sales rate location information". The modal contains the following fields:

- Sales Rate ID:** Input field containing "3".
Unique identifier for this sales rate location.
- County:** Input field containing "San Francisco".
The county for this location.
- State:** Input field containing "California".
The state for this location.
- Tax Rate (%):** Input field containing "8.6300".
The tax rate for this location.

At the bottom of the modal are two buttons: "Update Sales Rate Location" (in white text) and "Delete Sales Rate Location" (in red text).

Inventory Page Overview

The screenshot shows the 'Bookstore Manager' application interface, specifically the 'Book Inventory Management' section. At the top, there's a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, and Inventory. Below the navigation is a sub-navigation bar with links for Book Authors, Book Genres, Book Locations, and Order Items.

The main content area features a title 'Book Inventory Management' and a subtitle 'Manage your bookstore inventory and track book quantities'. A 'Select View' dropdown is set to 'Book Inventory Overview'.

Below this, there are four summary cards:

- Total Books**: 4 Unique book titles
- Total Inventory**: 23 Total book copies
- Low Stock**: 2 Books with ≤ 3 copies
- Total Value**: \$386.77 Inventory value

Two larger sections follow:

- Stock Status**: Current inventory levels
 - In Stock: 3
 - Out of Stock: 1
 - Low Stock (≤3 copies): 2
- Location Breakdown**: Books by storage location
 - Orchard: 1 books (8 copies)
 - Sunwillow: 1 books (12 copies)
 - Whiskey Pines: 1 books (3 copies)

Inventory Page (CREATE)

The screenshot shows a web browser window with multiple tabs open at the top. The active tab is titled "S&S Inventory". The main content area displays the "Bookstore Manager" interface, specifically the "BOOK INVENTORY MANAGEMENT" section. A sub-section titled "Book Inventory Management" is shown, with the sub-instruction "Add or update book inventory information".

The form fields include:

- Book Title:** Enter book title (text input field)
- Price:** Price (text input field, currently 0.00)
- Total Inventory Quantity:** 0 (text input field)
- Publication Date:** mm/dd/yyyy (date input field)
- ISBN-10:** 978-0-000-00000-0 (text input field)
- ISBN-13:** 978-0-000-00000-0-0 (text input field)
- Publisher:** Select a publisher (dropdown menu)
- In Stock:** Yes (dropdown menu)
- Storage Location:** Storage Location (dropdown menu) and Quantity at Location (text input field, currently 0)

At the bottom of the form are two buttons: "Save Inventory" and "Reset Form".

Inventory Page List

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Inventory". The URL in the address bar is "classwork.engr.oregonstate.edu:60728/inventory". The page itself is a dark-themed interface for managing bookstore inventory. At the top, there's a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, and Inventory. Below this, a secondary navigation bar includes Book Authors, Book Genres, Book Locations, and Order Items. A main title "Book Inventory Management" is displayed, followed by a subtitle "Manage your bookstore inventory and track book quantities". A "Select View" dropdown menu is set to "Book Inventory List". The central feature is a table titled "Book Inventory Management" with the following columns: Book Title, Publisher, ISBN-10, Price, Total Qty, Location Qty, Stock Status, and Actions. The table contains five rows of data:

Book Title	Publisher	ISBN-10	Price	Total Qty	Location Qty	Stock Status	Actions
Inherent Vice	Penguin Books	0143126850	\$15.99	12	12	In Stock	...
Beloved	Vintage International	1400033416	\$17.99	8	8	In Stock	...
The Talisman	Viking Press	0670691992	\$18.99	0	0	Out of Stock	...
Good Omens	William Morrow	0060853980	\$16.99	3	3	Low Stock	...

Inventory Page Analytics

The screenshot shows a web browser window with multiple tabs open, including "Project Step 5 (Portfolio Assi...", "Home - Google Drive", "Project Step 4 - Google Docs", "Final Step 5 CS 340 - Google Doc", and "S&S Inventory". The main content area is titled "Bookstore Manager" and displays "Book Inventory Management". A sub-section titled "Inventory Analytics" provides a "Detailed analysis of your book inventory". It includes two tables: "Stock Levels" and "Publisher Distribution".

Stock Levels

Stock Level	Description
High Stock	>7 copies
Medium Stock	4-7 copies
Low Stock	1-3 copies
Out of Stock	

Publisher Distribution

Publisher	Count	Books
Penguin Books	2	1 books
Vintage International	0	1 books
Viking Press	1	1 books
William Morrow	1	1 books

Book Authors Page (READ)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Book Authors". The URL in the address bar is "Not Secure classwork.engr.oregonstate.edu:60728/book-authors". The page itself is a dark-themed interface for managing book author relationships. At the top, there's a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, Book Authors (which is the current page), Book Genres, Book Locations, and Order Items. Below the navigation is a section titled "Book Authors Management" with the subtitle "Manage the relationships between books and authors". A dropdown menu labeled "View:" is set to "List Book Authors". The main content area is titled "All Book Authors" and contains a sub-section for "Book Authors" (with a note that there are 5 total). It features a search bar and two buttons: "+ Add Author to Book" and "Add Author". A table lists five entries, each showing an author's name, the book they are associated with, and an "Actions" column with three icons (a person icon, a pencil icon, and a trash bin icon). The table rows are:

Author	Book	Actions
Toni Morrison	Beloved	[person icon] [pencil icon] [trash bin icon]
Neil Richard Gaiman	Good Omens	[person icon] [pencil icon] [trash bin icon]
Thomas Pynchon	Inherent Vice	[person icon] [pencil icon] [trash bin icon]
Stephen Edwin King	The Talisman	[person icon] [pencil icon] [trash bin icon]
Peter Straub	The Talisman	[person icon] [pencil icon] [trash bin icon]

Book Authors Page (CREATE)

The screenshot shows a web browser window for the 'S&S Book Authors' application. The URL is classwork.engr.oregonstate.edu:60728/book-authors. The page title is 'Bookstore Manager'. The navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, Book Authors, Book Genres, Book Locations, and Order Items. A dropdown menu 'View:' is set to 'Create Book Author'. A 'Back to Book Authors' button is visible. The main content area is titled 'Create Book Author' and contains the sub-section 'Add Book Author'. It says 'Add an author to this book'. There are two dropdown menus: 'Book' (set to 'Inherent Vice') and 'Author' (set to 'Select an author'). A large button at the bottom right says 'Add Author to Book'.

Book Author Page (UPDATE)

The screenshot shows a web browser window titled "S&S Book Authors". The address bar indicates the URL is classwork.engr.oregonstate.edu:60728/book-authors. The page title is "Bookstore Manager" and the sub-section is "Book Authors Management". A sub-header states "Manage the relationships between books and authors". A dropdown menu labeled "View:" is set to "Edit Book Author". Below it is a button labeled "← Back to Book Authors". A modal dialog box is open, titled "Edit Book Author", with the sub-instruction "Modify the author for this book". It contains two dropdown menus: "Book" (set to "Beloved") and "Author" (set to "Select an author"). At the bottom of the modal are two buttons: "Update Book Author" and a red "Delete" button.

Book Genres Page (READ)

The screenshot shows a web-based application titled "Bookstore Manager" with a dark-themed interface. The main title is "Book Genres Management" with the subtitle "Manage the relationships between books and genres". A dropdown menu "View:" is set to "List Book Genres".

The central area displays a table titled "All Book Genres" showing five entries:

Genre	Book	Actions
Historical Fiction	Beloved	
Science Fiction	Good Omens	
Postmodern Fiction	Inherent Vice	
Horror Fiction	The Talisman	
Fantasy Fiction	The Talisman	

At the top of the table, there are buttons for "+ Add Genre to Book" and "Add Genre". A search bar "Search book genres..." is located above the table.

Below the table, a section titled "Book Genres" lists "All book-genre relationships in the system".

The top navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, Book Authors, Book Genres, Book Locations, and Order Items.

The browser's address bar shows the URL "classwork.engr.oregonstate.edu:60728/book-genres".

Book Genre Page (CREATE)

The screenshot shows a web browser window for the "S&S Book Genres" application. The URL is classwork.engr.oregonstate.edu:60728/book-genres. The page title is "Bookstore Manager". The navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items.

The main content area is titled "Book Genres Management" with the subtitle "Manage the relationships between books and genres". A dropdown menu "View:" is set to "Create Book Genre". Below it is a button "← Back to Book Genres".

The central feature is a form titled "Create Book Genre" with the subtitle "Add a new genre to a book". It contains two dropdown menus: "Book" (selected value: Beloved) and "Genre" (selected value: Postmodern Fiction). At the bottom of the form is a large blue button labeled "Add Genre to Book".

Book Genre Page (UPDATE)

The screenshot shows a web-based application titled "Bookstore Manager" with a dark theme. The top navigation bar includes links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and a dropdown for Book Authors, Book Genres, Book Locations, and Order Items. The main title is "Book Genres Management" with the subtitle "Manage the relationships between books and genres". A dropdown menu "View: Edit Book Genre" is open. Below it is a button "← Back to Book Genres". A modal window titled "Edit Book Genre" is displayed, asking "Modify the genre for this book". It contains two dropdown menus: "Book" (set to "Beloved") and "Genre" (set to "Select a genre"). At the bottom of the modal are buttons for "Update Book Genre" (disabled), "Delete" (disabled), and a small trash icon.

Book Locations Page (READ)

The screenshot shows a web browser window titled "S&S Book Locations". The URL in the address bar is "classwork.engr.oregonstate.edu:60728/book-locations". The page title is "Bookstore Manager" and the main section title is "Book Locations Management". A sub-section title "All Book Locations" is visible. The main content area displays a table of book storage locations:

Location	Quantity	Actions
Orchard	8	
Whiskey Pines	3	
Sunwillow	12	

There are also buttons for "Add Book Location", "Add Location to Book", and "Add Location". A search bar at the top says "Search book locations...".

Book Locations Page (CREATE)

The screenshot shows a web browser window titled "S&S Book Locations" with the URL "classwork.engr.oregonstate.edu:60728/book-locations". The page is part of the "Bookstore Manager" application. At the top, there is a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items. A dropdown menu labeled "View:" is set to "Create Book Location". Below the navigation, a button labeled "← Back to Book Locations" is visible. The main content area is titled ">Create Book Location" and contains the sub-tutorial "Add Book Location". It includes a sub-instruction "Add a location to this book". There are three input fields: "Book" (dropdown menu showing "Beloved"), "Location" (dropdown menu showing "Sunwillow"), and "Quantity" (text input field showing "5"). At the bottom of the form is a large, light-colored button with the text "Add Location to Book".

Book Locations Page (UPDATE)

The screenshot shows a web browser window with multiple tabs open. The active tab is titled "S&S Book Locations". The URL in the address bar is "Not Secure classwork.engr.oregonstate.edu:60728/book-locations". The page itself is a dark-themed interface for managing book locations. At the top, there's a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, and sub-links for Book Authors, Book Genres, Book Locations, and Order Items. Below the navigation, a section titled "Book Locations Management" is displayed, with a subtitle "Manage the storage locations and quantities for books". A dropdown menu labeled "View: Edit Book Location" is shown. A button labeled "Back to Book Locations" is also present. The main content area features a form titled "Edit Book Location" with the subtitle "Modify the location for this book". The form has three fields: "Book" (dropdown menu showing "Beloved"), "Location" (dropdown menu showing "Orchard"), and "Quantity" (text input field showing "8"). At the bottom of the form are two buttons: "Update Book Location" and "Delete".

Order Items Page (READ)

The screenshot shows a web browser window titled "S&S Order Items" with the URL "classwork.engr.oregonstate.edu:60728/order-items". The page is part of the "Bookstore Manager" application. At the top, there is a navigation bar with links for Home, Books, Customers, Orders, Publishers, Authors, Genres, Locations, Sales Rates, Inventory, Book Authors, Book Genres, Book Locations, and Order Items. Below the navigation bar, the title "Order Items Management" is displayed, followed by the subtitle "Manage the items within orders". A dropdown menu labeled "View: List Order Items" is open. The main content area is titled "All Order Items" and contains a table with three rows of data. The table has columns for Book, Customer, Quantity, Price, Order Date, and Actions. The data is as follows:

Book	Customer	Quantity	Price	Order Date	Actions
Good Omens	Filipe Redsky	3	\$16.99	12/9/2025	
Beloved	Reggie Reggerson	2	\$17.99	10/1/2025	
Inherent Vice	Gail Nightingstocks	1	\$15.99	10/1/2025	

At the top right of the table, there are buttons for "Add Order Item", "Add Item to Order", and "Create Order". A search bar at the top of the table area contains the placeholder text "Search order items...".

Order Items Page (CREATE)

The screenshot shows a web browser window with the URL <https://classwork.engr.oregonstate.edu:60728/order-items>. The page title is "Bookstore Manager". The main content area is titled "Create Order Item" and contains a sub-section "Add New Order Item". It includes fields for "Order ID" (set to 1), "Book" (a dropdown menu showing "Select a book"), "Quantity" (set to 1), and "Price per Unit" (set to 0.00). A note below states "Total for this item (quantity x price) - calculated automatically". At the bottom is a "Create Order Item" button.

Project Step 5 (Portfolio Assi... | Home - Google Drive | Project Step 4 - Google Docs | Final Step 5 CS 340 - Google Sheets | S&S Order Items

Not Secure classwork.engr.oregonstate.edu:60728/order-items

OSU Canvas OSU Email GitHub Leetcode Regex Tester Git Cheatsheet Open Source Hub Tailwind Transparency Site Emojipedia Beaver Hub Clarinet Fingerings

Bookstore Manager

Home Books Customers Orders Publishers Authors Genres Locations Sales Rates Inventory Book Authors Book Genres Book Locations Order Items

Create Order Item
Add a new item to an order

Select Order
Order #1 - \$45.61

Add New Order Item
Add a new item to order #1

Order ID
1
The order this item belongs to

Book
Select a book
Select the book for this order item

Quantity
1
Price per Unit
0.00

Subtotal
0.00
Total for this item (quantity x price) - calculated automatically

Create Order Item

Order Items Page (UPDATE)

The screenshot shows a web browser window with a dark theme. The address bar displays "Not Secure classwork.engr.oregonstate.edu:60728/order-items". The page title is "Bookstore Manager". The main content area is a form titled "Edit Order Item" with the sub-instruction "Update order item information".

Order Item ID: 3 (Unique identifier for this order item)

Order ID: 3 (The order this item belongs to)

Book: Good Omens - \$16.99 (Select the book for this order item)

Quantity: 3 **Price per Unit:** 16.99

Subtotal: 50.97 (Total for this item (quantity x price) - calculated automatically)

Buttons: "Update Order Item" (white button) and "Delete Order Item" (red button with trash icon).

Citations

1. <https://app.diagrams.net/>. Used 7/26/25. **Draw.io**. Application used for creating the Entity-Relationship Diagram.
2. MySQL Workbench forward engineering feature utilized to create initial DDL.sql document. Used 7/26/25.