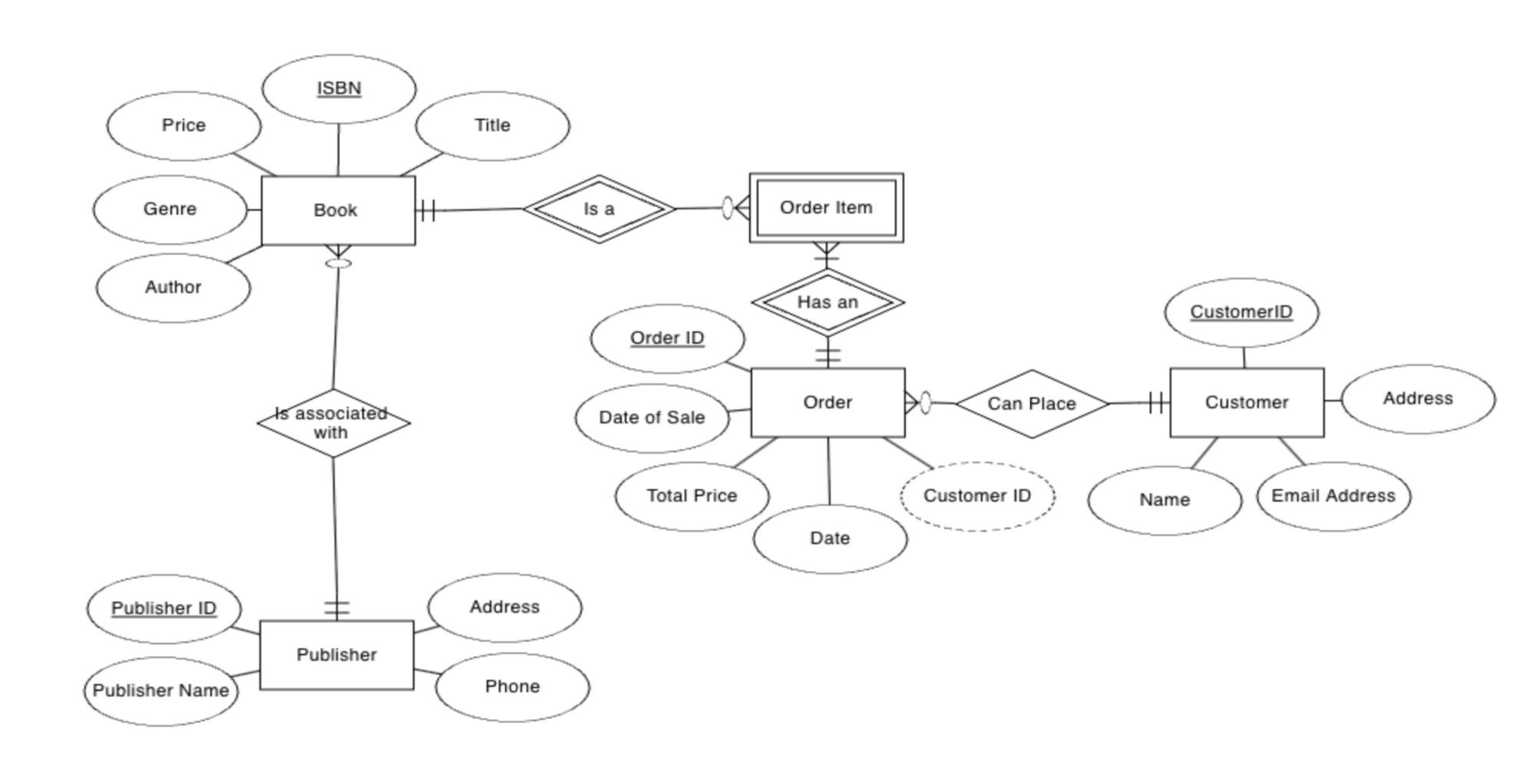
CINF202-Intro to databases

Final Project - Olivia Criscione

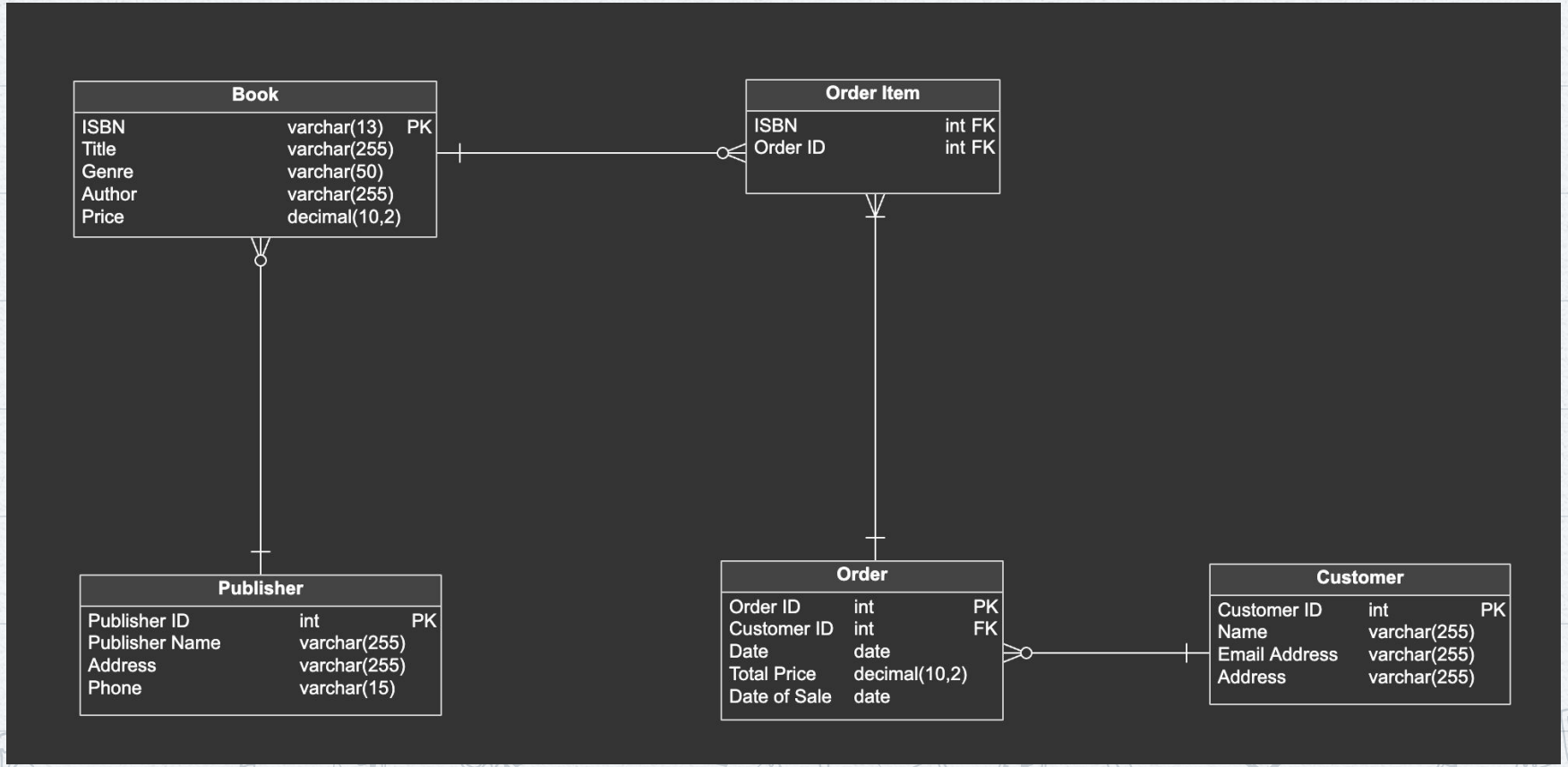
Final Project Scenario A - Online Bookstore

- For scenario A, we were tasked with creating an ERD model and database for an online bookstore, documenting the following:
  - Book: ISBN, Title, Author, Genre, Price
  - Customer: Customer ID, Name, Email, Address
  - Order: Order ID, Customer ID (FK), Date, Total Price, Date of Sale
  - Order Item: Order ID (FK), ISBN (FK)
  - Publisher: Publisher ID, Name, Address, Phone
- We also had to document the relationships between entities using the following given to us:
  - A Customer can place multiple Orders.
  - An Order can contain multiple Books.
  - Each Book is associated with one Publisher.
- I also made the following assumptions when creating the entity relationships
  - A book can only have one publisher but a publisher can have more than one book
  - A publisher doesn't need to have a book but a book must have a publisher
  - The order item must be a book but an individual book doesn't need to alway be an order item
  - There can be multiple numbers of a book as order items
  - An order can have multiple order items. An order is required to have an order item
  - A customer can have multiple orders, and an order needs to have a customer

ERD Diagram For Scenario A - Created using erd plus



Physical ERD Diagram for Scenario A - Created with Vertabelo



Creating an SQL script

- Using the ERD and physical ERD I created an SQL script to create the database, tables, and views
  - Looked at the ERD to plan out relationships between entities for physical ERD
  - Looked at the physical ERD for the data types of the attributes
  - Decided which data types to use for each attribute:
    - Used int for any number IDs (not dates or prices)
    - Used date for dates
    - Used varchar for storing characters of a certain length
    - Used decimal for storing prices

Adding Sample Data

- I added sample data values into the tables that I created in the previous step
  - At the bottom of this slide you can see an example of how I added in sample data
  - Overall adding in the data was easy but it was challenging coming up with sample data since I didn't have real number or names to go with
  - I created ten points of data for each attribute
  - Created views for each query question

```
INSERT INTO OrderItem (OrderID, ISBN)
VALUES
  (7, '1234567890111'),
  (7, '2345678901222'),
  (8, '3456789012333'),
  (8, '4567890123444'),
  (9, '5678901234555'),
  (9, '6789012345666'),
  (10, '7890123456777'),
  (10, '8901234567888'),
  (11, '9012345678999'),
  (11, '0123456789000');
```

SQL Query Example (Created 10 query questions for my data)

```sql
#Question 5 Display all orders that are $80 or less
CREATE VIEW v_question_05 AS SELECT
    OrderID,
    TotalPrice
FROM `Order`
WHERE TotalPrice < 80.00;
```

- Answer:

OrderID	TotalPrice
7	44.99
8	54.99
9	64.99
10	74.99

SQL Query Example (Created 10 query questions for my data)

```sql
#Question 8 Display all orders from 2024
CREATE VIEW v_question_08 AS SELECT
    OrderID,
    CustomerID,
    Date,
    TotalPrice
FROM `Order`
WHERE YEAR(Date) = (
    SELECT 2024
);
```

- Answer:

	OrderID	CustomerID	Date	TotalPrice
	13	13	2024-01-01	104.99
	14	14	2024-02-01	114.99
	15	15	2024-03-01	124.99
	16	16	2024-04-01	134.99

SQL Query Example (Created 10 query questions for my data)

```sql
#Question 10 Display Publishers who live on Pine St or Cedar St
CREATE VIEW v_question_10 AS SELECT
    PublisherID,
    Name AS PublisherName,
    Address AS PublisherAddress
FROM Publisher
WHERE Address LIKE '%Pine St%' OR Address LIKE '%Cedar St%';
```

- Answer:

	PublisherID	PublisherName	PublisherAddress
	6	Sixth Publisher	789 Pine St
	7	Seventh Publisher	101 Pine St
	8	Eighth Publisher	202 Cedar St
	11	Eleventh Publisher	505 Cedar St
	12	Twelfth Publisher	606 Pine St

Project Difficulties

- Coming up with specific data for my database was difficult. I thought that my data was specific enough but it wasn't in the end which made my ten queries difficult to come up.
  - Because they were difficult to come up with, my queries that I used were more difficult than the ones we had done in previous assignments
- Creating the tables was also difficult because I had the correct sql script to populate the tables and database but I didn't hit the tiny refresh button which made me think that it hadn't worked
- Creating a new user / password was difficult at first because I didn't know whether it worked for the correct database but after testing the login, it did.