

## ***Updated Requirements Analysis***

### **Problems Analysis**

“Decatur Vintage Books is a local bookstore selling a specialized collection of books. The owner of the store has been using MS Excel sheets to manage the book inventory. As the business grows, the owner wants to replace the Excel sheets with an inventory management App on top of an inventory management database.”

There is currently one excel sheet in use to describe all available data:

- Inventory List

There are currently many issues regarding the Excel Sheet including several issues with data.

- Lack of Data Normalization:
  - All the available inventory data is grouped into a single table and is not separated or categorized into separate relations. Normalization of data must occur for data to be more readily available and accurate.
- Lack of Data Integrity: ability for deletion anomalies to occur
  - As a result of lack of normalization of data, it is very easy for data anomalies to easily occur in any case where new fields must be added or removed, other data may be lost as a result of deletion anomalies. Data redundancy may also occur in an expanding inventory system.
- Missing Data fields:
  - Data for supplier’s information is missing and is not readily available in the metadata of the table given. Other unique identifiers should also be present.

## User Views

Currently the owner of the bookstore would like to develop a mobile application and an interface to help manage inventory

Screen 1:

**The Tipping Point: How Little Things Can Make a Big Difference**  
3rd edition, 2002  
by Malcolm Gladwell (Author)

**Product Details**

Paperback: 301 pages  
Publisher: Back Bay Books (January 7, 2002)  
Language: English  
ISBN-13: 978-0316346627

Unit Cost: \$17.00  
Unit Price: **\$11.99**  
Discount Rate: 29%  
Quantity in Stock: 2,560  
Quantity on Order: 3,000  
Expected Delivery: 5/20/2017

Product Dimensions: 5.5 x 1 x 8.5 inches  
Shipping Weight: 12 ounces

Screen 1. Book Details

This screen displays what the owner would like a customer who wishes to purchase a book to see in the interface as a result of the new application and database

Screen 2:

**Add New Order** 8/12/2018

ISBN-13

Book Title

Supplier

Order Quantity

Screen 3. New Order

This screen displays what the owner and management would like to use to help manage incoming inventory from suppliers in the application.

Screen 3:

**Add New Supplier**

Supplier

Street Address

City  State

Post Code  Phone

Mobile

Email

Contact Name

Screen 4. New Supplier

This screen displays what management would like to use to fill out information regarding new and existing suppliers for purchasing new books in the application.

## Entity types, Relationships, Business Rules

### Books:

Book information is critical to the inventory of the bookstore. Books have information and identifiers that are unique to each one.

1. **ISBN-13 (PK):** Unique identifier for all books, a serial number with 13 digits.
2. Book Title: The title of each book.
3. Edition: The version of each book.
4. Publisher: The company or individual that published the book
5. Page Amount: Number of pages in the book.
6. Language: Language of the book written

Rule: Books are connected to inventory, there is always the same in the inventory, no more no less and their records are accurate.

Rule: Books are not strictly unique, there are books with similar or different names, edition helps distinguish difference between books, but ISBN is the best indicator.

### Author:

The author is the original creator of the books and they can serve as a way for data to be more precise when attempting to ship or receive books.

1. **Author Name (PK):** Unique name of the author who wrote the book
2. Book title: The title of each book
3. Edition: The version of each book
4. Date Published: The date the publisher published the book

Rule: Authors are connected to books, there is only one author for every book but there can always be authors that write multiple books.

Rule: Authors are not necessarily the sole proprietors of books, therefore they are included separate.

### Supplier

Suppliers are critical to the infrastructure of the bookstore and are involved in helping with inventory turnover. Information regarding suppliers helps with finding data related to book shipments in the past or future.

1. **Supplier Name (PK):** The unique name of the company or individual that supplies shipments.
2. Contact Name: Name given to the contact within the database
3. Email: Email given for this particular supplier
4. State: State of incorporation for the company or place of business for individual supplier
5. Phone: Phone number given to contact supplier

6. City: City of supplier that conducts business in.
7. Street Address: Address of supplier that conducts business in.
8. Post Code: Area code of supplier that conducts business in.

Rule: There is always 1 or more suppliers present for shipments.

Rule: Suppliers are not the only individuals or companies capable of sending shipments.

### **Inventory Availability**

Available inventory of all books whether they are staying at the bookstore or slated to be moved out. Also describes the current cost of holding inventory based on Unit Cost.

1. **ISBN (PK):** Unique identifier for all books, a serial number with 13 digits.
2. Book title: The name of the book.
3. Quantity on hand: Current inventory available for purchase by customer or use by bookstore.
4. Quantity on order: Quantity that is currently being shipped in or out of bookstore.
5. Unit Cost: Cost of Goods Sold for each book

Rule: Inventory is updated via shipments; it is optional for them to arrive by shipment but they only arrive in single shipments at a time to update inventory.

Rule: Inventory may not require change to its quantity amount for each book but it is instrumental in showing the quantity available at any present moment for books.

### **Shipments**

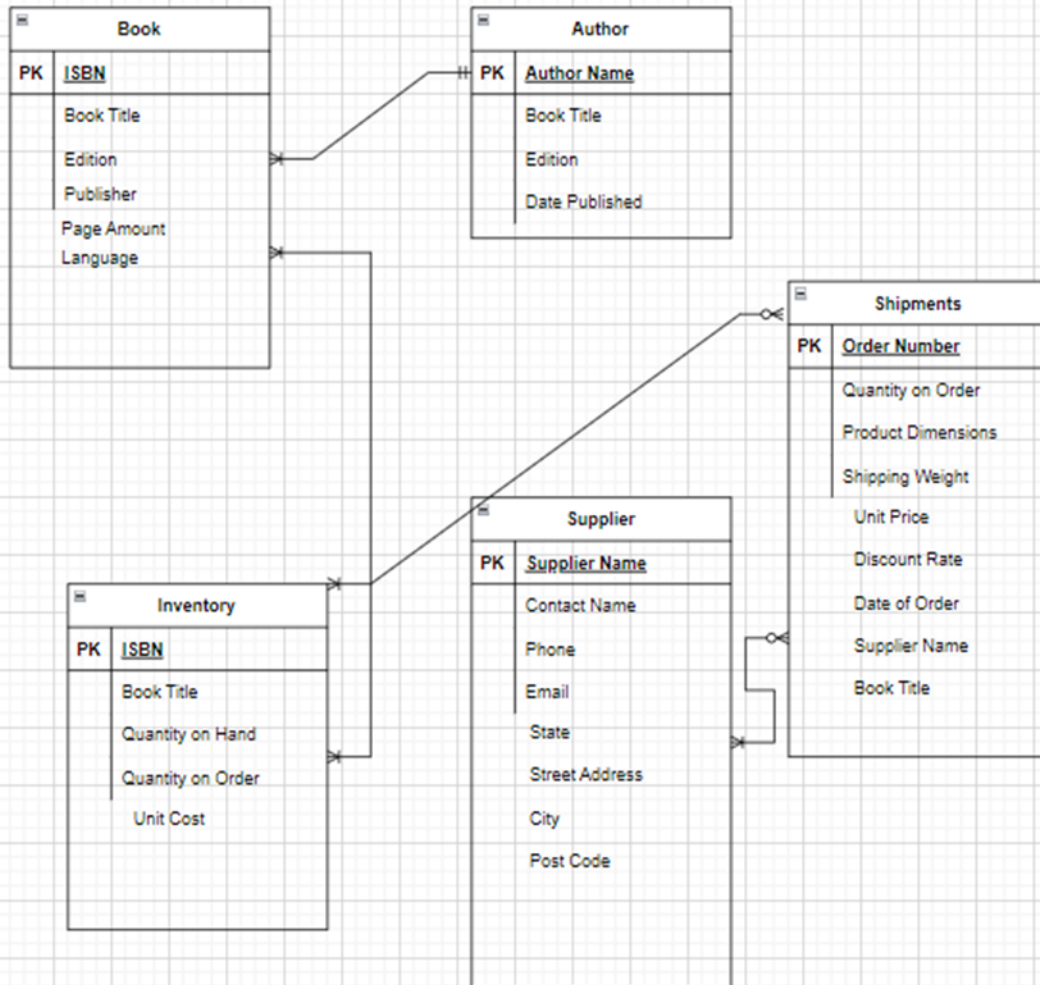
Shipments are the physical movements of books from or to the bookstore based on the supplier or the customer.

- 1.) **Order Number (PK):** The unique number given to each order shipment to identify them.
- 2.) Book title: Name of the book that is currently part of the shipment.
- 3.) Product Dimensions: Size of the shipment.
- 4.) Shipping Weight: Weight of the shipment.
- 5.) Unit Price: Profit gained by sale of book(s).
- 6.) Discount Rate: Amount of money saved by selling via shipment.
- 7.) Date of Order: Date that order has been shipped.

Rule: It is optional for shipments to arrive from suppliers, many times there is a chance multiple shipments may arrive from the same or different suppliers.

Rule: Shipments rely on suppliers and only occur as a result of their actions. Customers of the bookstore may also utilize shipments to receive their books.

## Conceptual ER Model



## *Requirements Verification Updated*

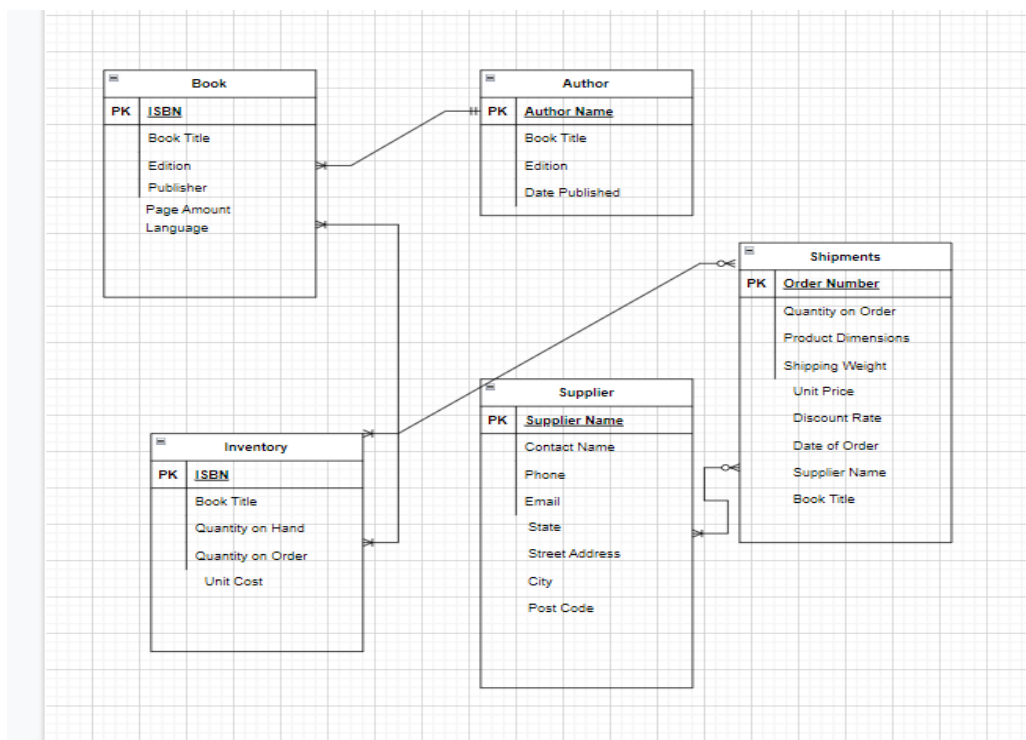
Entity Type	Attribute	Confirmation
Book		
	ISBN	
	BookTitle	
	DatePublished	
	Language	
	PageAmount	
	AuthorID	
	PublisherID	
Publisher		
	PublisherID	X
	PublisherName	X
	City	X
Author		
	AuthorID	X
	AuthorFirstName	X
	AuthorLastName	X
	MiddleInitial	X
Department		
	DepartmentName	X
	DepartmentID	X
	BookTitle(Dropped)	
Inventory		
	ISBN	X
	QuantityOnHand	X
	UnitCost	X
	BookTitle	X
ShipIn		
	ShipmentID	X
	QuantityOnOrder	X
	BookTitle	X
	UnitPrice	X
	DateOfOrder	X
	DiscountRate	X
	ShippingDimensions	X
	SupplierName(Dropped for SupplierID)	X

Entity Type	Attribute	Confirmation
ShipOUT		
	ShipmentID	X
	QuantityOnOrder	X
	BookTitle	X
	UnitPrice	X
	DateOfOrder	X
	DiscountRate	X
	ShippingDimensions	X
	CustomerID(Switched from Customer First and Last Name)	X
Supplier		
	SupplierID	X
	SupplierName	X
	Shipments	X
SupplierLocation		
	SupplierID	X
	Address, City, Zip, Province	X
SupplierContact		
	Phone	X
	Email	X
Customer		
	CustomerID	X
	First, LastName	X
	Shipments	X
	MiddleInitial	X
CustomerPhone		
	PhoneID	X
	PhoneNum	X
	Email	X
CustomerLocation	Location(Address, Zip, Country, City)	X

## *Updated Logical Database Design*

### **Error Analysis:**

There were several issues with the previous logical model. The first was the level of normalization, the new logical model has been transformed to 3NF. Previously it was in 2NF. Furthermore, all attributes that were previously listed were written again in the same logical model with additions to details given in the normalization problem. More functional dependencies were discovered after reviewing the user requirements and business experience with a library and as a result transitive functional dependencies were created as a result of the relationship of many to many among certain relations. Most in particular the ShipIn and ShipOut was utilized as a major surrogate key in order to draw a relationship between supplier, inventory, and customers. The revised logical model also implements business rules that exist based on the relationships with the new surrogate keys. (**Original Model**), Updated ER Model on Page 7





Relations & Functional Dependencies:

**SupplierInformation: (3NF)**

Candidate Keys: SupplierID (PK, FK)

Non-prime Attributes: PhoneNum, Email

Functional Dependencies: SupplierID > PhoneNum, Email

**Supplier: (3NF)**

Candidate Keys: SupplierID (PK, FK)

Non-prime Attributes: SupplierName, Shipments

Functional Dependencies: SupplierID > SupplierName, Shipments

**SupplierLocation: (3NF)**

Candidate Keys: SupplierID (PK, FK)

Non-prime Attributes: Street Address, City, Country, Province, Zip Code

Functional Dependencies: SupplierID > Street Address, City, Country, Province, Zip Code

**ShipIn: (3NF)**

Candidate Keys: ShipmentID (PK), Booktitle (FK), DateOfOrder, SupplierName (FK)

Non-prime Attributes: QuantityOnOrder, UnitPrice, DiscountRate, ShippingDimensions,

Functional Dependencies: ShipmentID > BookTitle, DateOfOrder, SupplierName,  
QuantityOnOrder, UnitPrice, DiscountRate, ShippingDimensions, | SupplierName > BookTitle |  
BookTitle > UnitPrice | SupplierName > DiscountRate | BookTitle > QuantityOnOrder

**Inventory: (3NF)**

Candidate Keys: ISBN (PK), BookTitle (FK)

Non-prime Attributes: QuantityOnHand, UnitCost

Functional Dependencies: ISBN > BookTitle, | ISBN > QuantityOnHand, UnitCost

**ShipOut: (3NF)**

Candidate Keys: ShipmentID (PK), BookTitle (FK), FirstName (FK), LastName (FK), DateOfOrder

Non-prime Attributes: QuantityOnOrder, UnitPrice, DiscountRate, ShippingDimensions

Functional Dependencies: ShipmentID > BookTitle, DateOfOrder, FirstName, LastName  
QuantityOnOrder, UnitPrice, DiscountRate, ShippingDimensions, | BookTitle > UnitPrice |  
ShipmentID > DiscountRate | BookTitle > QuantityOnOrder

**Customer: (3NF)**

Candidate Keys: CustomerID (PK), FirstName (FK), LastName (FK)

Non-prime Attributes: MiddleInitial, Shipments

Functional Dependencies: CustomerID > FirstName, | CustomerID > LastName, | CustomerID > MiddleInitial, | CustomerID > Shipments

**CustomerPhone: (3NF)**

Candidate Keys: PhoneID (PK), CustomerID (FK)

Non-prime Attributes: PhoneNum

Functional Dependencies: PhoneID > CustomerID, | PhoneID > PhoneNum

**CustomerLocation: (3NF)**

Candidate Keys: CustomerID (PK, FK)

Non-prime Attributes: Street\_Address, City, Country, Zip\_Code, Province

Functional Dependencies: CustomerID > Street\_Address, City, Country, Zip\_Code, Province

**Department: (3NF)**

Candidate Keys: DepartmentID (PK), BookTitle (FK)

Non-prime Attributes: DepartmentName

Functional Dependencies: DepartmentID > BookTitle, | BookTitle > DepartmentName

**Book: (3NF)**

Candidate Keys: ISBN (PK), BookTitle (FK), PublisherName (FK), DepartmentName (FK), AuthorFirstName (FK), AuthorLastName (FK)

Non-prime Attributes: DatePublished, Language, PageAmount

Functional Dependencies: ISBN > BookTitle, | BookTitle > PublisherName, | BookTitle > DepartmentName, | BookTitle > AuthorFirstName, | BookTitle, > AuthorLastName, | BookTitle > PageAmount, | BookTitle > Language

**Publisher: (3NF)**

Candidate Keys: PublisherID (PK), PublisherName (FK)

Non-prime Attributes: City

Functional Dependencies: PublisherID > PublisherName, | PublisherName > City

**Author: (3NF)**

Candidate Keys: AuthorID (PK), AuthorFirstName (FK), AuthorLastName (FK)

Non-prime Attributes: MiddleInitial

Functional Dependencies: AuthorID > AuthorFirstName, AuthorLastName, MiddleInitial

**Final Set of Relations:**

**SupplierInformation** (SupplierID(PK, FK), PhoneNum, Email)

**Supplier** (SupplierID (PK, FK), SupplierName, Shipments)

**SupplierLocation** (SupplierID (PK, FK), Street Address, City, Country, Province, Zip Code)

**ShipIn** (ShipmentID (PK), BookTitle (FK), DateOfOrder, SupplierName (FK), QuantityOnOrder, UnitPrice, DiscountRate, ShippingDimensions)

**Inventory** (ISBN (PK), BookTitle (FK), QuantityOnHand, UnitCost)

**ShipOUT** (ShipmentID (PK), BookTitle (FK), FirstName (FK), LastName (FK), DateOfOrder, QuantityOnOrder, UnitPrice, DiscountRate, ShippingDimensions)

**Customer** (CustomerID (PK), FirstName (FK), LastName (FK), MiddleInitial, Shipments)

**CustomerPhone** (PhoneID (PK), CustomerID (FK), PhoneNum)

**CustomerLocation** (CustomerID (PK, FK), Street\_Address, City, Country, Zip\_Code, Province)

**Department** (DepartmentID (PK), BookTitle (FK), DepartmentName)

**Book** (ISBN (PK), BookTitle (FK), PublisherName (FK), DepartmentName (FK), AuthorFirstName (FK), AuthorLastName (FK), DatePublished, Language, PageAmount)

**Publisher** (PublisherID (PK), PublisherName (FK), City)

**Author** (AuthorID (PK), AuthorFirstName (FK), AuthorLastName (FK), MiddleInitial)

**Business Rules of Updated Model**

**Customer:**

- 1.) Each customer is required to have only one address for the website.
- 2.) Each customer is required to have only one phone number for contact.
- 3.) Customers can have multiple shipments from our inventory to be delivered to them. It is optional for them to purchase books from our inventory while they are registered to our website.

**Book:**

- 1.) Each book may have multiple authors and those authors may write multiple books. It is not mandatory for an author to have written multiple books however.

- 2.) Each book has only one publisher, but a publisher may have published multiple books. It is not mandatory for a publisher to publish a book however it is necessary for the book to be published.
- 3.) Each book belongs to a single department. Departments may house multiple books however. All counts of books are mandatory and must be in a department.

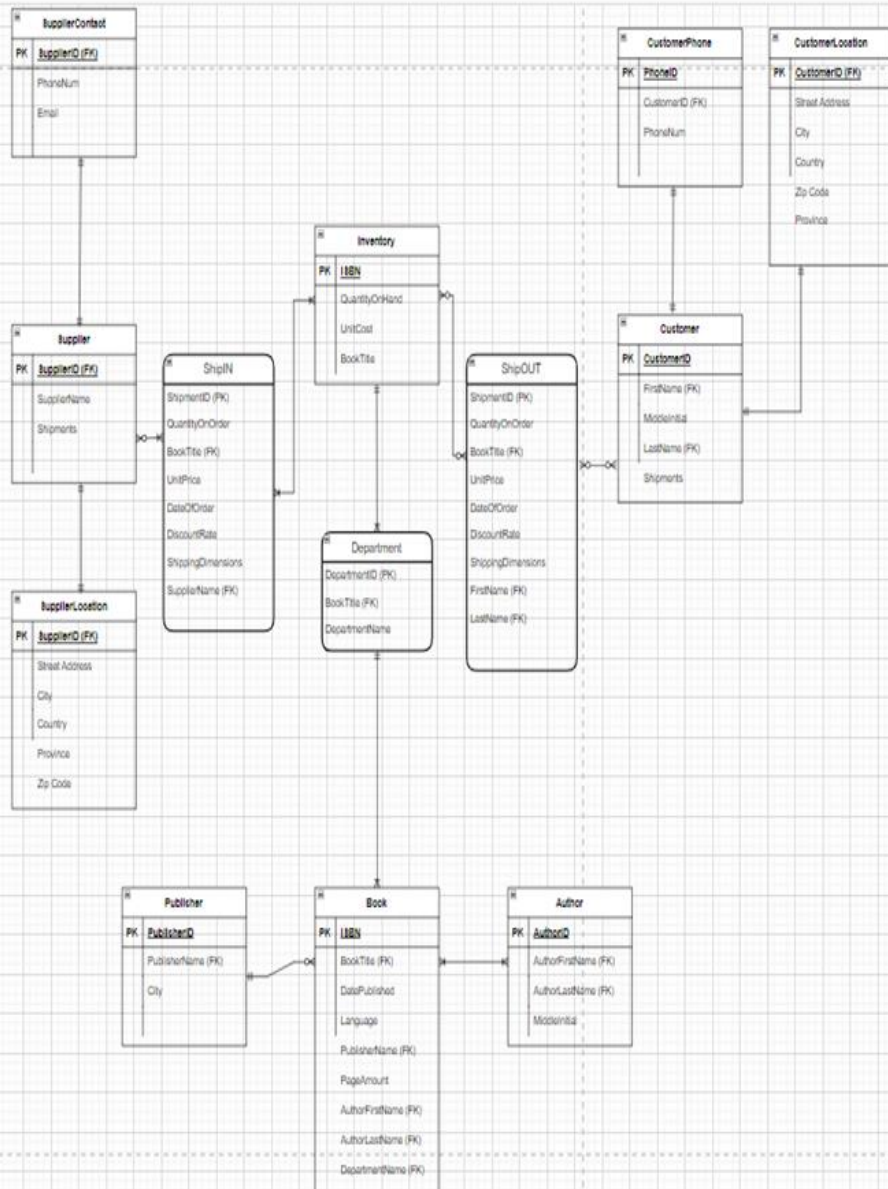
**Supplier:**

- 1.) Suppliers may choose to ship out their books but shipments received from them are mandatory to be sent by them and no other entity.
- 2.) Suppliers must have one form of contact and only one within our database.
- 3.) Suppliers are based in one location only but must operate within a region in order to be considered a supplier.

**Inventory:**

- 1.) Shipments are optional to customers and may be kept within our inventory. Customers can order multiple books at any given time.
- 2.) Shipments made from suppliers are mandatory in order to continue inventory turnover and create a larger selection of books in our inventory. Multiple books from different shipments may be acquired.
- 3.) All inventory must be separated by department and the departments are included within the inventory counts. Multiple departments exist within one inventory system.

***Final Normalized ER Model***



## *Physical Database Design*

### **Table Structure: Attributes & Relations**

**Inventory:** ISBN(PK), QuantityOnHand, BookTitle(FK), UnitCost

**Department:** DepartmentID(PK), BookTitle(FK), DepartmentName

**Supplier:** SupplierID (PK, FK), SupplierName, Shipments

**SupplierContact:** SupplierID(PK, FK), PhoneNum, Email

**SupplierLocation:** SupplierID(PK, FK), StreetAddress, City, Province, ZipCode

**ShipIN:** ShipmentID(PK), QuantityOnOrder, BookTitle(FK), UnitPrice, DateOfOrder, DiscountRate, ShippingDimensions, SupplierID(FK)

**ShipOUT:** ShipmentID(PK), QuantityOnOrder, BookTitle(FK), UnitPrice, DateOfOrder, DiscountRate, ShippingDimensions, CustomerID(FK)

**Customer:** CustomerID(PK, FK), FirstName, LastName, MiddleInitial, Shipments

**CustomerPhone:** PhoneID(PK), CustomerID(FK), PhoneNum

**CustomerLocation:** CustomerID(PK, FK), StreetAddress, City, Country, ZipCode, Province

**Book:** ISBN(PK), BookTitle(FK), AuthorID(FK), PublisherID(FK), DatePublished, Language, PageAmount

**Author:** AuthorID(PK), AuthorFirstName, AuthorLastName, MiddleInitial

**Publisher:** PublisherID(PK, FK), PublisherName, City

**Inventory: ISBN(PK), QuantityOnHand, BookTitle(FK), UnitCost**

Attribute Name	Type	Key	Nullable	Referential Constraint
<b>BookTitle</b>	<b>Numeric(20)</b>	<b>PK</b>	<b>No</b>	
<b>QuantityOnHand</b>	<b>Numeric(4)</b>		<b>No</b>	
<b>BookTitle</b>	<b>VarChar(128)</b>		<b>No</b>	
<b>UnitCost</b>	<b>Numeric(10)</b>		<b>No</b>	
<b>DepartmentID</b>	<b>Numeric(38)</b>	<b>FK referencing Department.DepartmentID</b>	<b>No</b>	<b>ON DELETE CASCADE</b>  <b>ON UPDATE CASCADE</b>

```

CREATE TABLE Inventory2 (
    BookTitle VARCHAR(128) PRIMARY KEY,
    QuantityOnHand NUMERIC(4) NOT NULL,
    UnitCost NUMERIC(10),
    DepartmentID NUMERIC(38) NOT NULL,
    /* CONSTRAINT Inventory.DepartmentID FOREIGN KEY
    (DepartmentID)
        REFERENCES Department (DepartmentID)
        ON DELETE CASCADE
        ON UPDATE CASCADE */
);

DROP TABLE Inventory;

```



**Department:** DepartmentID(PK), BookTitle(FK), DepartmentName

Attribute Name	Type	Key	Nullable	Referential Constraint
<b>DepartmentID</b>	<b>Numeric(38)</b>	<b>PK</b>	<b>No</b>	
<b>DepartmentName</b>	<b>VarChar(100)</b>		<b>No</b>	

```
CREATE TABLE Department (  
    DepartmentID Numeric(38) NOT NULL,  
    DepartmentName VARCHAR(100) NOT NULL,  
);
```

```
DROP TABLE Department;
```

**Supplier:** SupplierID (PK), SupplierName, Shipments

Attribute Name	Type	Key	Nullable	Referential Constraint
SupplierID	Numeric(20)	PK	No	
SupplierName	VarChar(128)		No	
Shipments	Numeric(4)		No	

```
CREATE TABLE Supplier(  
    SupplierID VARCHAR(20) PRIMARY KEY,  
    SupplierName VARCHAR(128) NOT NULL,  
    Shipments NUMERIC(4) NOT NULL,  
);
```

```
DROP TABLE Supplier;
```

**SupplierContact:** SupplierID(PK, FK), PhoneNum, Email

Attribute Name	Type	Key	Nullable	Referential Constraint
SupplierPhoneID	Numeric(20)	PK	No	
SupplierID	Numeric(20)	FK referencing Supplier.SupplierID	No	ON DELETE CASCADE  ON UPDATE CASCADE
PhoneNum	VarChar(20)		No	
Email	VarChar(100)		No	

```
CREATE TABLE SupplierContact (  
    SupplierPhoneID NUMERIC(20) PRIMARY KEY,  
    SupplierID NUMERIC(20) NOT NULL,  
    PhoneNum VARCHAR(20) NOT NULL,  
    Email VARCHAR(100) NOT NULL,  
    /* CONSTRAINT SupplierContact_SupplierID FOREIGN  
    KEY(SupplierID)  
        REFERENCES Supplier(SupplierID)  
        ON DELETE CASCADE  
        ON UPDATE CASCADE */  
);  
  
DROP TABLE SupplierContact;
```

**SupplierLocation:** SupplierID(PK, FK), StreetAddress, City, Province, ZipCode

Attribute Name	Type	Key	Nullable	Referential Constraint
SupplierLocalID	Numeric(20)	PK	No	
SupplierID	Numeric(20)	FK referencing Supplier.SupplierID	No	On Delete Cascade On Update Cascade
StreetAddress	VarChar(128)		No	
City	VarChar(128)		No	
Country	VarChar(128)		No	
Province	VarChar(128)		No	
ZipCode	Numeric(12)		No	

```
CREATE TABLE SupplierLocation (  
    SupplierLocalID NUMERIC(20) PRIMARY KEY,  
    SupplierID NUMERIC(20) NOT NULL,  
    StreetAddress VARCHAR(128) NOT NULL,  
    City VARCHAR(128) NOT NULL,  
    Country VARCHAR(128) NOT NULL,  
    Province VARCHAR(128) NOT NULL,  
    ZipCode NUMERIC(12) NOT NULL,  
    /* CONSTRAINT SupplierLocation.SupplierID FOREIGN KEY  
    (SupplierID)  
        REFERENCES Supplier (SupplierID)  
        ON DELETE CASCADE  
        ON UPDATE CASCADE */  
);  
  
DROP TABLE SupplierLocation;
```

**ShipIN:** ShipmentID(PK), QuantityOnOrder, BookTitle(FK), UnitPrice,  
DateOfOrder, DiscountRate, ShippingDimensions, SupplierID(FK)

Attribute Name	Type	Key	Nullable	Referential Constraint
ShipmentID	Numeric(10)	PK	No	
QuantityOnOrder	Numeric(6)		No	
BookTitle	VarChar(128)	FK referencing Inventory.BookTitle	No	On Delete Cascade On Update Cascade
UnitPrice	Numeric(10)		No	
DateOfOrder	Date		Yes	
DiscountRate	Numeric(6)		No	
ShippingDimensions	VarChar(50)		Yes	
SupplierID	Numeric(20)	FK referencing Supplier.SupplierID	No	On Delete Cascade On Update Cascade

```
CREATE TABLE ShipIN (  
    ShipmentID NUMERIC(10) PRIMARY KEY,  
    QuantityOnOrder NUMERIC(6) NOT NULL,  
    BookTitle VARCHAR(128) NOT NULL,  
    UnitPrice NUMERIC(10) NOT NULL,  
    DateOfOrder DATE,  
    DiscountRate NUMERIC(6) NOT NULL,  
    ShippingDimensions VARCHAR(50),  
    SupplierID NUMERIC(20) NOT NULL,  
    /* CONSTRAINT ShipIN.BookTitle FOREIGN KEY (BookTitle)  
        REFERENCES Inventory (BookTitle)  
        ON DELETE CASCADE  
        ON UPDATE CASCADE
```

CONSTRAINT ShipIN.SupplierID FOREIGN KEY (SupplierID)

REFERENCES Supplier (SupplierID)

ON DELETE CASCADE

ON UPDATE CASCADE \*/

);

DROP TABLE ShipIN;

**ShipOUT:** ShipmentID(PK), QuantityOnOrder, BookTitle(FK), UnitPrice, DateOfOrder, DiscountRate, ShippingDimensions, CustomerID(FK)

Attribute Name	Type	Key	Nullable	Referential Constraint
ShipmentID	Numeric(10)	PK	No	
QuantityOnOrder	Numeric(6)		No	
BookTitle	VarChar(128)	FK referencing Inventory.BookTitle	No	On Delete Cascade On Update Cascade
UnitPrice	Numeric(10)		No	
DateOfOrder	Date		Yes	
DiscountRate	Numeric(6)		No	
ShippingDimensions	VarChar(50)		Yes	
CustomerID	Numeric(20)	FK referencing Supplier.SupplierID	No	On Delete Cascade On Update Cascade

```
CREATE TABLE ShipOUT(  
    ShipmentID NUMERIC(10) PRIMARY KEY,  
    QuantityOnOrder NUMERIC(6) NOT NULL,  
    BookTitle VARCHAR(128) NOT NULL,  
    UnitPrice NUMERIC(10) NOT NULL,  
    DateOfOrder DATE,  
    DiscountRate NUMERIC(6) NOT NULL,  
    ShippingDimensions VARCHAR(50),  
    CustomerID NUMERIC(20) NOT NULL,  
    /* CONSTRAINT ShipOUT.BookTitle FOREIGN KEY (BookTitle)  
        REFERENCES Inventory (BookTitle)  
        ON DELETE CASCADE  
        ON UPDATE CASCADE
```

```
CONSTRAINT ShipOUT.CustomerID FOREIGN KEY (CustomerID)
    REFERENCES Customer (CustomerID)
    ON DELETE CASCADE
    ON UPDATE CASCADE */
);

DROP TABLE ShipOUT;
```



**Customer:** CustomerID(PK, FK), FirstName, LastName, MiddleInitial, Shipments

Attribute Name	Type	Key	Nullable	Referential Constraint
CustomerID	Numeric(20)	PK	No	
FirstName	VarChar(40)		No	
LastName	VarChar(40)		No	
MiddleInitial	VarChar(2)		Yes	
Shipments	Numeric(4)_		No	

```
CREATE TABLE Customer (  
    CustomerID NUMERIC(20) PRIMARY KEY,  
    FirstName VARCHAR(40) NOT NULL,  
    LastName VARCHAR(40) NOT NULL,  
    MiddleInitial VARCHAR(2),  
    Shipments NUMERIC(4) NOT NULL,  
);
```

```
DROP TABLE Customer;
```

**CustomerPhone:** PhoneID(PK), CustomerID(FK), PhoneNum

Attribute Name	Type	Key	Nullable	Referential Constraint
PhoneID	Numeric(20)	PK	No	
CustomerID	Numeric(20)	FK referencing Customer.CustomerID	No	On Delete Cascade On Update Cascade
PhoneNum	VarChar(15)		No	

```
CREATE TABLE CustomerPhone (  
    PhoneID NUMERIC(20) PRIMARY KEY,  
    CustomerID NUMERIC(20) NOT NULL,  
    PhoneNum VARCHAR(15),  
    /* CONSTRAINT CustomerPhone.CustomerID FOREIGN KEY  
    (CustomerID)  
        REFERENCES Customer (CustomerID)  
        ON DELETE CASCADE  
        ON UPDATE CASCADE */  
);
```

```
DROP TABLE CustomerPhone;
```

**CustomerLocation:** CustomerID(PK, FK), StreetAddress, City, Country,  
ZipCode, Province

Attribute Name	Type	Key	Nullable	Referential Constraint
CustomerLocalID	Numeric(20)	PK	No	
CustomerID	Numeric(20)	FK referencing Customer.CustomerID	No	On Delete Cascade On Update Cascade
StreetAddress	VarChar(128)		No	
City	VarChar(128)		No	
Country	VarChar(128)		No	
ZipCode	Numeric(12)		No	
Province	VarChar(40)		No	

```
CREATE TABLE CustomerLocation (  
    CustomerLocalID NUMERIC(20) PRIMARY KEY,  
    CustomerID NUMERIC(20) NOT NULL,  
    StreetAddress VARCHAR(128),  
    City VARCHAR(128),  
    Country VARCHAR(128),  
    ZipCode NUMERIC(12),  
    Province VARCHAR(40),  
    /* CONSTRAINT CustomerLocation.CustomerID FOREIGN KEY  
    (CustomerID)  
        REFERENCES Customer (CustomerID)  
        ON DELETE CASCADE  
        ON UPDATE CASCADE */  
);  
DROP TABLE CustomerLocation;
```

**Book:** ISBN(PK), BookTitle(FK), AuthorID(FK), PublisherID(FK),  
DatePublished, Language, PageAmount

Attribute Name	Type	Key	Nullable	Referential Constraint
ISBN	Numeric(20)	PK	No	
BookTitle	VarChar(128)		No	
DatePublished	Date		Yes	
Language	VarChar(42)		Yes	
PageAmount	Numeric(5)		No	
AuthorID	Numeric(20)	FK referencing Author.AuthorID		On Delete Cascade On Update Cascade
PublisherID	Numeric(20)	FK referencing Publisher.PublisherID		On Delete Cascade On Update Cascade

```
CREATE TABLE Book (  
    ISBN NUMERIC(20) PRIMARY KEY,  
    BookTitle VARCHAR(128) NOT NULL,  
    DatePublished DATE,  
    Language VARCHAR(42),  
    PageAmount NUMERIC(5) NOT NULL,  
    AuthorID Numeric(20) NOT NULL,  
    PublisherID Numeric(20) NOT NULL,  
    /* CONSTRAINT Book.AuthorID FOREIGN KEY (AuthorID)  
        REFERENCES Author (AuthorID)  
        ON DELETE CASCADE  
        ON UPDATE CASCADE
```

CONSTRAINT Book.PublisherID FOREIGN KEY (PublisherID)

REFERENCES Publisher (PublisherID)

ON DELETE CASCADE

ON UPDATE CASCADE \*/

);

DROP TABLE Book;

**Author:** AuthorID(PK), AuthorFirstName, AuthorLastName, MiddleInitial

Attribute Name	Type	Key	Nullable	Referential Constraint
AuthorID	<b>Numeric(20)</b>	<b>PK</b>	<b>No</b>	
AuthorFirstName	<b>VarChar(40)</b>		<b>No</b>	
AuthorLastName	<b>VarChar(40)</b>		<b>No</b>	
MiddleInitial	<b>VarChar(2)</b>		<b>Yes</b>	

```
CREATE TABLE Author (  
    AuthorID NUMERIC(20) PRIMARY KEY,  
    AuthorFirstName VARCHAR(40) NOT NULL,  
    AuthorLastName VARCHAR(40) NOT NULL,  
    MiddleInitial VARCHAR(2)  
);
```

```
DROP TABLE Author;
```

**Publisher:** PublisherID(PK, FK), PublisherName, City

Attribute Name	Type	Key	Nullable	Referential Constraint
PublisherID	Numeric(20)	PK	No	
PublisherName	VarChar(42)		No	
City	VarChar(128)		Yes	

```
CREATE TABLE Publisher (  
    PublisherID VARCHAR(20) PRIMARY KEY,  
    PublisherName VARCHAR(42) NOT NULL,  
    City VARCHAR(128)  
);
```

```
DROP TABLE Publisher;
```

# SQL Queries

## All Available Orders of “Chainsaw Man Volume 1”:

The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema with tables like CUSTOMER, ORDER, and ORDERITEM. The central pane contains a SQL query: `SELECT ShipID FROM ShipID WHERE BookTitle LIKE 'Chainsaw Man Volume 1'`. The right pane shows the query results, which are currently empty, indicating no rows were selected.

## All Available Books sorted by Author:

The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema. The central pane contains a SQL query: `SELECT BookTitle, ISBN, DatePublished, Language, PageCount FROM Book ORDER BY AuthorID`. The right pane shows the query results, which are currently empty, indicating no rows were selected.

BOOKTITLE	ISBN	DATEPUBLISHED	LANGUAGE	PAGECOUNT
Harry Potter and the Sorcerer's Stone	1.23456789	1997	English	320
Harry Potter and the Chamber of Secrets	9.78901234	1998	English	350
Harry Potter and the Prisoner of Azkaban	9.78901234	1999	English	350
Harry Potter and the Goblet of Fire	9.78901234	2000	English	350
Harry Potter and the Order of the Phoenix	9.78901234	2003	English	350
Harry Potter and the Deathly Hallows	9.78901234	2007	English	350
Harry Potter and the Half-Blood Prince	9.78901234	2005	English	350
Chainsaw Man Volume 1	9.78901234	2020	Japanese, English	200
Chainsaw Man Volume 2	9.78901234	2021	Japanese, English	200
Chainsaw Man Volume 3	9.78901234	2022	Japanese, English	200





# Original Test Data

## Book Data:

The screenshot shows the Oracle SQL Developer interface with the 'BOOK' table selected in the 'Table' tab. The table contains 10 rows of data, including ISBN, book title, language, page count, author, and publisher. The 'Messages' pane at the bottom shows a successful rollback message.

ISBN	BOOKTITLE	DATEPUBLISHED	LANGUAGE	PAGECOUNT	AUTHOR	PUBLISHER
1 1234567890123	Harry Potter and the Sorcerer's Stone	(null)	English	750	1234	1234
2 9780439044773	Harry Potter and the Chamber of Secrets	(null)	English	750	1234	2345
3 9780439036038	Harry Potter and the Prisoner of Azkaban	(null)	English	750	1234	3456
4 9780439035555	Harry Potter and the Goblet of Fire	(null)	English	750	1234	4567
5 9780439034444	Harry Potter and the Order of the Phoenix	(null)	English	750	1234	5678
6 9780439034542	Harry Potter and the Half-Blood Prince	(null)	English	750	1234	6789
7 9780439030222	Harry Potter and the Deathly Hallows	(null)	English	750	1234	7890
8 9781974709553	Chainsaw Man Volume 1	(null)	Japanese, English	200	2345	8901
9 9781974709546	Chainsaw Man Volume 2	(null)	Japanese, English	200	2345	9012
10 9781974709553	Chainsaw Man Volume 3	(null)	Japanese, English	200	2345	4321

## Inventory Data:

The screenshot shows the Oracle SQL Developer interface with the 'INVENTORY2' table selected in the 'Table' tab. The table contains 10 rows of data, including book title, quantity on hand, unit cost, and department ID. The 'Messages' pane at the bottom shows a successful rollback message.

BOOKTITLE	QUANTITYONHAND	UNITCOST	DEPARTMENTID
1 Harry Potter and the Sorcerer's Stone	12	13	1234
2 Harry Potter and the Chamber of Secrets	3	13	1234
3 Harry Potter and the Prisoner of Azkaban	4	13	1234
4 Harry Potter and the Goblet of Fire	54	13	1234
5 Harry Potter and the Order of the Phoenix	23	13	1234
6 Harry Potter and the Half-Blood Prince	1	13	1234
7 Harry Potter and the Deathly Hallows	43	13	1234
8 Chainsaw Man Volume 1	5	10	2345
9 Chainsaw Man Volume 2	7	10	2345
10 Chainsaw Man Volume 3	9	10	2345

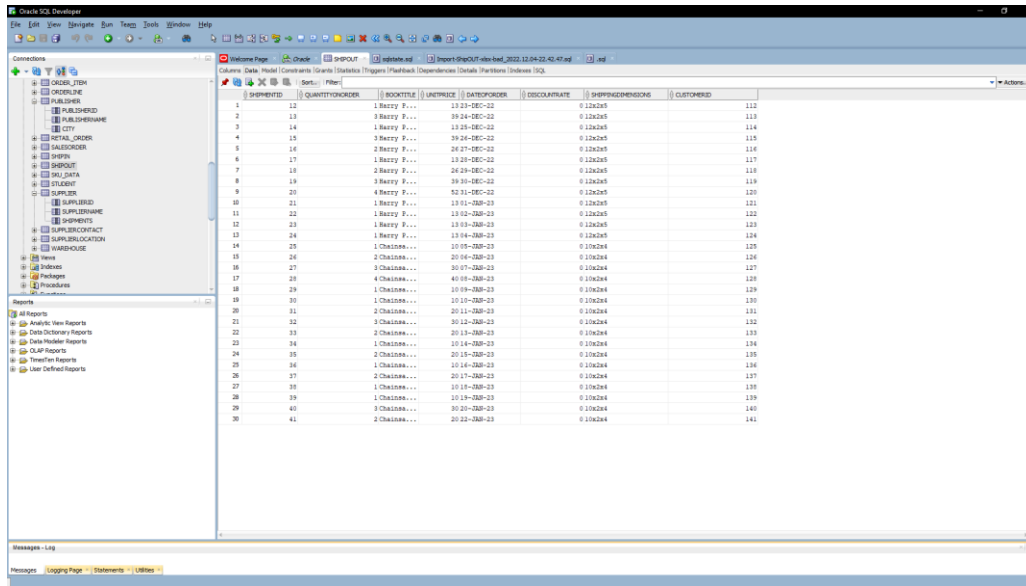
## ShipOUT Data:

SHIPMENTID	QUANTITYORDER	BOOKTITLE	UNITPRICE	DATEORDER	DISCOUNTRATE	SHIPMENTDIMENSIONS	CUSTOMERID
1	11	2 Barry P...	24 22-DEC-22	0 12a2a5			111
2	12	3 Barry P...	13 23-DEC-22	0 12a2a5			112
3	13	3 Barry P...	39 24-DEC-22	0 12a2a5			113
4	14	1 Barry P...	13 25-DEC-22	0 12a2a5			114
5	15	3 Barry P...	39 26-DEC-22	0 12a2a5			115
6	16	2 Barry P...	24 27-DEC-22	0 12a2a5			116
7	17	1 Barry P...	13 28-DEC-22	0 12a2a5			117
8	18	2 Barry P...	24 29-DEC-22	0 12a2a5			118
9	19	3 Barry P...	39 30-DEC-22	0 12a2a5			119
10	20	4 Barry P...	52 31-DEC-22	0 12a2a5			120
11	21	1 Barry P...	13 01-JAN-23	0 12a2a5			121
12	22	1 Barry P...	13 02-JAN-23	0 12a2a5			122
13	23	1 Barry P...	13 03-JAN-23	0 12a2a5			123
14	24	1 Barry P...	13 04-JAN-23	0 12a2a5			124
15	25	1 Chainsa...	10 05-JAN-23	0 10a2a4			125
16	26	2 Chainsa...	20 06-JAN-23	0 10a2a4			126
17	27	3 Chainsa...	30 07-JAN-23	0 10a2a4			127
18	28	4 Chainsa...	40 08-JAN-23	0 10a2a4			128
19	29	1 Chainsa...	10 09-JAN-23	0 10a2a4			129
20	30	1 Chainsa...	10 10-JAN-23	0 10a2a4			130
21	31	2 Chainsa...	20 11-JAN-23	0 10a2a4			131
22	32	3 Chainsa...	30 12-JAN-23	0 10a2a4			132
23	33	2 Chainsa...	20 13-JAN-23	0 10a2a4			133
24	34	1 Chainsa...	10 14-JAN-23	0 10a2a4			134
25	35	2 Chainsa...	20 15-JAN-23	0 10a2a4			135
26	36	1 Chainsa...	10 16-JAN-23	0 10a2a4			136
27	37	2 Chainsa...	20 17-JAN-23	0 10a2a4			137
28	38	1 Chainsa...	10 18-JAN-23	0 10a2a4			138
29	39	1 Chainsa...	10 19-JAN-23	0 10a2a4			139
30	40	3 Chainsa...	30 20-JAN-23	0 10a2a4			140
31	41	2 Chainsa...	20 21-JAN-23	0 10a2a4			141

## CHANGED SHIPMENT DELIVERY OF SHIPMENT #31 TO ONE DAY LATER & Reduced Quantity On Order by One:

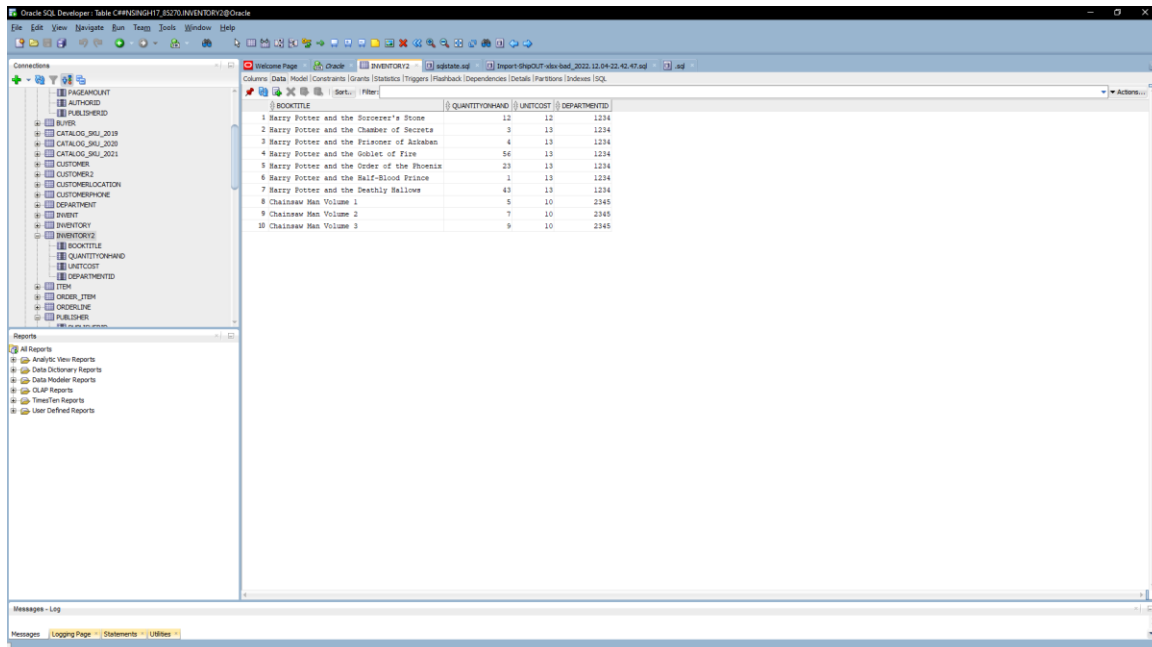
SHIPMENTID	QUANTITYORDER	BOOKTITLE	UNITPRICE	DATEORDER	DISCOUNTRATE	SHIPMENTDIMENSIONS	CUSTOMERID
1	12	1 Barry P...	13 23-DEC-22	0 12a2a5			112
2	13	3 Barry P...	39 24-DEC-22	0 12a2a5			113
3	14	1 Barry P...	13 25-DEC-22	0 12a2a5			114
4	15	3 Barry P...	39 26-DEC-22	0 12a2a5			115
5	16	2 Barry P...	24 27-DEC-22	0 12a2a5			116
6	17	1 Barry P...	13 28-DEC-22	0 12a2a5			117
7	18	2 Barry P...	24 29-DEC-22	0 12a2a5			118
8	19	3 Barry P...	39 30-DEC-22	0 12a2a5			119
9	20	4 Barry P...	52 31-DEC-22	0 12a2a5			120
10	21	1 Barry P...	13 01-JAN-23	0 12a2a5			121
11	22	1 Barry P...	13 02-JAN-23	0 12a2a5			122
12	23	1 Barry P...	13 03-JAN-23	0 12a2a5			123
13	24	1 Barry P...	13 04-JAN-23	0 12a2a5			124
14	25	1 Chainsa...	10 05-JAN-23	0 10a2a4			125
15	26	2 Chainsa...	20 06-JAN-23	0 10a2a4			126
16	27	3 Chainsa...	30 07-JAN-23	0 10a2a4			127
17	28	4 Chainsa...	40 08-JAN-23	0 10a2a4			128
18	29	1 Chainsa...	10 09-JAN-23	0 10a2a4			129
19	30	1 Chainsa...	10 10-JAN-23	0 10a2a4			130
20	31	2 Chainsa...	20 11-JAN-23	0 10a2a4			131
21	32	3 Chainsa...	30 12-JAN-23	0 10a2a4			132
22	33	2 Chainsa...	20 13-JAN-23	0 10a2a4			133
23	34	1 Chainsa...	10 14-JAN-23	0 10a2a4			134
24	35	2 Chainsa...	20 15-JAN-23	0 10a2a4			135
25	36	1 Chainsa...	10 16-JAN-23	0 10a2a4			136
26	37	2 Chainsa...	20 17-JAN-23	0 10a2a4			137
27	38	1 Chainsa...	10 18-JAN-23	0 10a2a4			138
28	39	1 Chainsa...	10 19-JAN-23	0 10a2a4			139
29	40	3 Chainsa...	30 20-JAN-23	0 10a2a4			140
30	41	2 Chainsa...	20 21-JAN-23	0 10a2a4			141

## DELETED SHIPMENT#11 AS IT WAS CANCELLED BY CUSTOMER (Original Data shown in first screenshots of Data Report)



SHIPMENTID	QUANTITYORDERED	BOOKTITLE	UNITPRICE	DATEORDERED	DISCOUNT	SHIPPRICEDIMENSIONS	CUSTOMERID
1	12	1 Harry P...	12.21	DEC-22	0.12x2x5		113
2	13	1 Harry P...	39.24	DEC-22	0.12x2x5		113
3	14	1 Harry P...	13.25	DEC-22	0.12x2x5		114
4	15	3 Harry P...	39.24	DEC-22	0.12x2x5		115
5	16	1 Harry P...	26.21	DEC-22	0.12x2x5		116
6	17	1 Harry P...	13.25	DEC-22	0.12x2x5		117
7	18	2 Harry P...	24.29	DEC-22	0.12x2x5		118
8	19	1 Harry P...	39.24	DEC-22	0.12x2x5		119
9	20	4 Harry P...	52.31	DEC-22	0.12x2x5		120
10	21	1 Harry P...	13.21	DEC-23	0.12x2x5		121
11	22	1 Harry P...	13.22	DEC-23	0.12x2x5		122
12	23	1 Harry P...	13.23	DEC-23	0.12x2x5		123
13	24	1 Harry P...	13.24	DEC-23	0.12x2x5		124
14	25	1 Chaisaw...	10.10	DEC-23	0.10x2x4		125
15	26	2 Chaisaw...	20.10	DEC-23	0.10x2x4		126
16	27	3 Chaisaw...	30.07	DEC-23	0.10x2x4		127
17	28	4 Chaisaw...	40.03	DEC-23	0.10x2x4		128
18	29	1 Chaisaw...	10.09	DEC-23	0.10x2x4		129
19	30	1 Chaisaw...	10.10	DEC-23	0.10x2x4		130
20	31	2 Chaisaw...	20.11	DEC-23	0.10x2x4		131
21	32	3 Chaisaw...	30.12	DEC-23	0.10x2x4		132
22	33	2 Chaisaw...	20.13	DEC-23	0.10x2x4		133
23	34	1 Chaisaw...	10.14	DEC-23	0.10x2x4		134
24	35	2 Chaisaw...	20.15	DEC-23	0.10x2x4		135
25	36	1 Chaisaw...	10.16	DEC-23	0.10x2x4		136
26	37	2 Chaisaw...	20.17	DEC-23	0.10x2x4		137
27	38	1 Chaisaw...	10.18	DEC-23	0.10x2x4		138
28	39	1 Chaisaw...	10.19	DEC-23	0.10x2x4		139
29	40	2 Chaisaw...	20.20	DEC-23	0.10x2x4		140
30	41	2 Chaisaw...	20.21	DEC-23	0.10x2x4		141

## Harry Potter and the Sorcerer's Stone's Unit Cost was Reduced to \$12 (Original Data shown in first screenshots of Data Report)



BOOKTITLE	QUANTITYONHAND	UNITCOST	DEPARTMENTID
1 Harry Potter and the Sorcerer's Stone	12	12	1234
2 Harry Potter and the Chamber of Secrets	5	13	1234
3 Harry Potter and the Prisoner of Azkaban	4	13	1234
4 Harry Potter and the Goblet of Fire	56	13	1234
5 Harry Potter and the Order of the Phoenix	23	13	1234
6 Harry Potter and the Half-Blood Prince	1	13	1234
7 Harry Potter and the Deathly Hallows	43	13	1234
8 Chaisaw Man Volume 1	5	10	2345
9 Chaisaw Man Volume 2	7	10	2345
10 Chaisaw Man Volume 3	9	10	2345

**Shipment Order 35 had a Price Reduction in their Order due to one-day Late Shipment, subsequently their Unit Price was Lowered from \$20 to \$18.  
(Original Data shown in first screenshots of Data Report)**

SHIPMENTID	QUANTITYORDER	BOOKTITLE	UNITPRICE	DATEORDER	DISCOUNT	SHIPPINGDIMENSIONS	CUSTOMERID
1	12	1 Harry P...	19.23-DEC-22	0.12x2x5			112
2	13	3 Harry P...	39.24-DEC-22	0.12x2x5			113
3	14	1 Harry P...	19.25-DEC-22	0.12x2x5			114
4	15	3 Harry P...	39.26-DEC-22	0.12x2x5			115
5	16	2 Harry P...	24.27-DEC-22	0.12x2x5			116
6	17	1 Harry P...	19.28-DEC-22	0.12x2x5			117
7	18	2 Harry P...	24.29-DEC-22	0.12x2x5			118
8	19	3 Harry P...	39.30-DEC-22	0.12x2x5			119
9	20	4 Harry P...	52.31-DEC-22	0.12x2x5			120
10	21	1 Harry P...	19.01-JAN-23	0.12x2x5			121
11	22	1 Harry P...	19.02-JAN-23	0.12x2x5			122
12	23	1 Harry P...	19.03-JAN-23	0.12x2x5			123
13	24	1 Harry P...	19.04-JAN-23	0.12x2x5			124
14	25	1 Chaisna...	10.05-JAN-23	0.10x2x4			125
15	26	2 Chaisna...	20.06-JAN-23	0.10x2x4			126
16	27	3 Chaisna...	30.07-JAN-23	0.10x2x4			127
17	28	4 Chaisna...	40.08-JAN-23	0.10x2x4			128
18	29	1 Chaisna...	10.09-JAN-23	0.10x2x4			129
19	30	1 Chaisna...	10.10-JAN-23	0.10x2x4			130
20	31	2 Chaisna...	20.11-JAN-23	0.10x2x4			131
21	32	3 Chaisna...	30.12-JAN-23	0.10x2x4			132
22	33	2 Chaisna...	20.13-JAN-23	0.10x2x4			133
23	34	1 Chaisna...	10.14-JAN-23	0.10x2x4			134
24	35	2 Chaisna...	11.15-JAN-23	0.10x2x4			135
25	36	1 Chaisna...	10.16-JAN-23	0.10x2x4			136
26	37	2 Chaisna...	20.17-JAN-23	0.10x2x4			137
27	38	1 Chaisna...	10.18-JAN-23	0.10x2x4			138
28	39	1 Chaisna...	10.19-JAN-23	0.10x2x4			139
29	40	3 Chaisna...	30.20-JAN-23	0.10x2x4			140
30	41	2 Chaisna...	20.22-JAN-23	0.10x2x4			141

## Supplier Data:

SUPPLIERID	SUPPLIERNAME	SHIPMENTS
1	Bay Area Supplying Co	130
2	Via Studios Supply	300
3	Halifax Supplies	50
4	New York Book Supplies Co	20

## Publisher Data:

The screenshot shows the Oracle SQL Developer interface. On the left, a tree view displays the database schema, including tables like CATALOG, CUSTOMER, INVENTORY, and PUBLISHER. The PUBLISHER table is selected. The main window displays the data of the PUBLISHER table in a grid format. The data is as follows:

PUBLISHERID	PUBLISHERNAME	CITY
1 100	Intra Publishing	New York
2 101	Entilion Publishers	Halifax
3 102	Viz Studios Publishing	Tokyo
4 103	Cres Publishers	Beijing

At the bottom, a Messages Log shows a successful rollback message: "Oracle\*: Dec 4, 2022, 8:24:33 PM: Rollback successful".

## *SQL Insert Statements*

### BOOK:

-- File created - Sunday-December-04-2022

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(1234567890123,'Harry Potter and the Sorcerer's Stone',null,'English',750,1234,1234);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9780439064873,'Harry Potter and the Chamber of Secrets',null,'English',750,1234,2345);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9780439136358,'Harry Potter and the Prisoner of Azkaban',null,'English',750,1234,3456);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9780439139595,'Harry Potter and the Goblet of Fire ',null,'English',750,1234,4567);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9780545791434,'Harry Potter and the Order of the Phoenix',null,'English',750,1234,5678);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9780439784542,'Harry Potter and the Half-Blood Prince',null,'English',750,1234,6789);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9780545010221,'Harry Potter and the Deathly Hallows',null,'English',750,1234,7890);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9781974709939,'Chainsaw Man Volume 1',null,'Japanese, English',200,2345,8901);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9781974709946,'Chainsaw Man Volume 2',null,'Japanese, English',200,2345,9012);

Insert into BOOK

(ISBN,BOOKTITLE,DATEPUBLISHED,LANGUAGE,PAGEAMOUNT,AUTHORID,PUBLISHERID) values  
(9781974709953,'Chainsaw Man Volume 3',null,'Japanese, English',200,2345,4321);

## Inventory:

-----

-- File created - Sunday-December-04-2022

-----

REM INSERTING into C##NSINGH17\_85270.INVENTORY2

SET DEFINE OFF;

Insert into C##NSINGH17\_85270.INVENTORY2

(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Harry Potter and the  
Sorcerer's Stone',12,13,1234);

Insert into C##NSINGH17\_85270.INVENTORY2

(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Harry Potter and the  
Chamber of Secrets',3,13,1234);

Insert into C##NSINGH17\_85270.INVENTORY2  
(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Harry Potter and the Prisoner of Azkaban',4,13,1234);

Insert into C##NSINGH17\_85270.INVENTORY2  
(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Harry Potter and the Goblet of Fire ',56,13,1234);

Insert into C##NSINGH17\_85270.INVENTORY2  
(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Harry Potter and the Order of the Phoenix',23,13,1234);

Insert into C##NSINGH17\_85270.INVENTORY2  
(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Harry Potter and the Half-Blood Prince',1,13,1234);

Insert into C##NSINGH17\_85270.INVENTORY2  
(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Harry Potter and the Deathly Hallows',43,13,1234);

Insert into C##NSINGH17\_85270.INVENTORY2  
(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Chainsaw Man Volume 1',5,10,2345);

Insert into C##NSINGH17\_85270.INVENTORY2  
(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Chainsaw Man Volume 2',7,10,2345);

Insert into C##NSINGH17\_85270.INVENTORY2  
(BOOKTITLE,QUANTITYONHAND,UNITCOST,DEPARTMENTID) values ('Chainsaw Man Volume 3',9,10,2345);

## ShipOUT:

-----  
-- File created - Sunday-December-04-2022  
-----

REM INSERTING into C##NSINGH17\_85270.SHIPOUT

SET DEFINE OFF;

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (11,2,'Harry Potter and the Sorcerer"s  
Stone',26,to\_date('22-DEC-22','DD-MON-RR'),0,'12x2x5',111);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (12,1,'Harry Potter and the Sorcerer"s  
Stone',13,to\_date('23-DEC-22','DD-MON-RR'),0,'12x2x5',112);



```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (13,3,'Harry Potter and the Sorcerer"s  
Stone',39,to_date('24-DEC-22','DD-MON-RR'),0,'12x2x5',113);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (14,1,'Harry Potter and the Sorcerer"s  
Stone',13,to_date('25-DEC-22','DD-MON-RR'),0,'12x2x5',114);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (15,3,'Harry Potter and the Sorcerer"s  
Stone',39,to_date('26-DEC-22','DD-MON-RR'),0,'12x2x5',115);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (16,2,'Harry Potter and the Sorcerer"s  
Stone',26,to_date('27-DEC-22','DD-MON-RR'),0,'12x2x5',116);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (17,1,'Harry Potter and the Sorcerer"s  
Stone',13,to_date('28-DEC-22','DD-MON-RR'),0,'12x2x5',117);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (18,2,'Harry Potter and the Sorcerer"s  
Stone',26,to_date('29-DEC-22','DD-MON-RR'),0,'12x2x5',118);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (19,3,'Harry Potter and the Sorcerer"s  
Stone',39,to_date('30-DEC-22','DD-MON-RR'),0,'12x2x5',119);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (20,4,'Harry Potter and the Sorcerer"s  
Stone',52,to_date('31-DEC-22','DD-MON-RR'),0,'12x2x5',120);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (21,1,'Harry Potter and the Sorcerer"s  
Stone',13,to_date('01-JAN-23','DD-MON-RR'),0,'12x2x5',121);
```

```
Insert into C##NSINGH17_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (22,1,'Harry Potter and the Sorcerer"s  
Stone',13,to_date('02-JAN-23','DD-MON-RR'),0,'12x2x5',122);
```

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (23,1,'Harry Potter and the Sorcerer's  
Stone',13,to\_date('03-JAN-23','DD-MON-RR'),0,'12x2x5',123);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (24,1,'Harry Potter and the Sorcerer's  
Stone',13,to\_date('04-JAN-23','DD-MON-RR'),0,'12x2x5',124);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (25,1,'Chainsaw Man Volume 1',10,to\_date('05-  
JAN-23','DD-MON-RR'),0,'10x2x4',125);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (26,2,'Chainsaw Man Volume 1',20,to\_date('06-  
JAN-23','DD-MON-RR'),0,'10x2x4',126);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (27,3,'Chainsaw Man Volume 1',30,to\_date('07-  
JAN-23','DD-MON-RR'),0,'10x2x4',127);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (28,4,'Chainsaw Man Volume 1',40,to\_date('08-  
JAN-23','DD-MON-RR'),0,'10x2x4',128);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (29,1,'Chainsaw Man Volume 1',10,to\_date('09-  
JAN-23','DD-MON-RR'),0,'10x2x4',129);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (30,1,'Chainsaw Man Volume 1',10,to\_date('10-  
JAN-23','DD-MON-RR'),0,'10x2x4',130);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (31,2,'Chainsaw Man Volume 1',20,to\_date('11-  
JAN-23','DD-MON-RR'),0,'10x2x4',131);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (32,3,'Chainsaw Man Volume 1',30,to\_date('12-  
JAN-23','DD-MON-RR'),0,'10x2x4',132);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (33,2,'Chainsaw Man Volume 1',20,to\_date('13-  
JAN-23','DD-MON-RR'),0,'10x2x4',133);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (34,1,'Chainsaw Man Volume 2',10,to\_date('14-  
JAN-23','DD-MON-RR'),0,'10x2x4',134);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (35,2,'Chainsaw Man Volume 2',20,to\_date('15-  
JAN-23','DD-MON-RR'),0,'10x2x4',135);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (36,1,'Chainsaw Man Volume 2',10,to\_date('16-  
JAN-23','DD-MON-RR'),0,'10x2x4',136);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (37,2,'Chainsaw Man Volume 2',20,to\_date('17-  
JAN-23','DD-MON-RR'),0,'10x2x4',137);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (38,1,'Chainsaw Man Volume 2',10,to\_date('18-  
JAN-23','DD-MON-RR'),0,'10x2x4',138);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (39,1,'Chainsaw Man Volume 2',10,to\_date('19-  
JAN-23','DD-MON-RR'),0,'10x2x4',139);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (40,3,'Chainsaw Man Volume 2',30,to\_date('20-  
JAN-23','DD-MON-RR'),0,'10x2x4',140);

Insert into C##NSINGH17\_85270.SHIPOUT  
(SHIPMENTID,QUANTITYONORDER,BOOKTITLE,UNITPRICE,DATEOFORDER,DISCOUNTRA  
TE,SHIPPINGDIMENSIONS,CUSTOMERID) values (41,2,'Chainsaw Man Volume 2',20,to\_date('21-  
JAN-23','DD-MON-RR'),0,'10x2x4',141);

## Supplier:

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-- File created - Sunday-December-04-2022  
-----

REM INSERTING into C##NSINGH17\_85270.SUPPLIER

SET DEFINE OFF;

Insert into C##NSINGH17\_85270.SUPPLIER (SUPPLIERID,SUPPLIERNAME,SHIPMENTS) values  
(200,'Bay Area Supplying CO',130);

Insert into C##NSINGH17\_85270.SUPPLIER (SUPPLIERID,SUPPLIERNAME,SHIPMENTS) values  
(221,'Viz Studios Supply',300);

Insert into C##NSINGH17\_85270.SUPPLIER (SUPPLIERID,SUPPLIERNAME,SHIPMENTS) values  
(234,'Halifax Supplies',50);

Insert into C##NSINGH17\_85270.SUPPLIER (SUPPLIERID,SUPPLIERNAME,SHIPMENTS) values  
(250,'New York Book Supplies Co',20);

## Publisher:

-----  
-- File created - Sunday-December-04-2022  
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REM INSERTING into C##NSINGH17\_85270.PUBLISHER

SET DEFINE OFF;

Insert into C##NSINGH17\_85270.PUBLISHER (PUBLISHERID,PUBLISHERNAME,CITY) values  
(100,'Intra Publishing','New York');

Insert into C##NSINGH17\_85270.PUBLISHER (PUBLISHERID,PUBLISHERNAME,CITY) values  
(101,'Entilion Publishers','Halifax');

Insert into C##NSINGH17\_85270.PUBLISHER (PUBLISHERID,PUBLISHERNAME,CITY) values  
(102,'Viz Studios Publishing','Tokyo');

Insert into C##NSINGH17\_85270.PUBLISHER (PUBLISHERID,PUBLISHERNAME,CITY) values  
(103,'Craz Publishes','Beijing');