DATABASE TESTING (SENG8071)

Midterm Assignment On

Designing A System For An Online Bookstore

**Submitted By**

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Submitted to - Professor Kevin Kang

# Online bookstore system

## Our System Overview

The online bookstore system will be customized for customers, authors, and publishers, as per our requirements where users can access the store for searching, buying, and reviewing. Publishers and authors are additionally included in the system.

// We have constantly maintain camelCase as per attribute.

## Team Member Duties

Here are duties assigned to an individual.

**- Designing database schema and defining tables** - Mahendra Patel is responsible for making sure the design of database schema and helps teams communicate with one another.

- **Database Architect:** - Mahendra Patel is responsible for designing the database schema and ensuring data integrity.

**- DDL/DML**: -Swati Implemented the SQL queries and CRUD operations.

**- Data Analyst:** - Yamani Ravikumar analyzes user data to generate insights like most popular genres, loyal customers.

**- Quality Assurance Engineer: -** Swati is the QA engineer, tests the system to make sure it satisfies the specifications and is error-free.

## User Roles

**Customers**: Look through books, buy them, write reviews.

**Writers**: Take care or manage their books.

Book listings are managed by publishers.

**Data to Collect**

Details about a book, including its title, author, genre, price, cover image, and format (physical, e-book, or audio).

Name, email address, and past purchases made by the customer.

The author details their name, and area of expertise in the genre.

Publisher details: name, number of contacts.

Online Bookstore System Design

Database Schema

Here are the tables and Data Types

### Customers

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Type** | **Description** |
| custId | SERIAL | Primary Key |
| fName | VARCHAR (50) | First Name |
| lName | VARCHAR (50) | Last Name |
| emailId | VARCHAR (100) | Email Address |
| cellNumb | VARCHAR (20) | Phone Number |
| custAddress | VARCHAR (500) | Customer address |
| created | TIMESTAMP | DTTM |
| updated | TIMESTAMP | DTTM |

### Authors

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Type** | **Attribute** |
| authId | SERIAL | Author ID |
| fName | VARCHAR (50) | First Name |
| lName | VARCHAR (50) | Last Name |
| biography | TEXT | Details about author's |
| birthDate | DATE | Date of birthday |
| nationality | VARCHAR (50) | Its citizen status |
| created | TIMESTAMP | DTTM |
| updated | TIMESTAMP | DTTM |

Publishers

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Description** |
| publisherId | SERIAL | Unique identifier for the publisher |
| name | VARCHAR (100) | Publisher name |
| publisherAddress | VARCHAR (500) | Publisher address |
| websiteUrl | VARCHAR (100) | If any website URL |
| created | TIMESTAMP | DTTM |
| updated | TIMESTAMP | DTTM |

Books

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Description** |
| bookId | SERIAL | Unique identifier for the book |
| title | VARCHAR (100) | Book title |
| bookLanguage | VARCHAR (20) | Foreign key referencing the Authors table |
| authId | INTEGER | Book genre |
| publisherId | INTEGER | Book publication date |
| genre | VARCHAR (50) | It’s about book generation |
| publicationDate | VARCHAR (50) | Book published date |
| Price | DECIMAL (10, 2) | Retails price on book |
| pageCount | INTEGER | Total page number |
| isbn | VARCHAR (20) | Specific ISBN number for book |
| bookDescription | TEXT | Details about book |
| created | TIMESTAMP | DTTM |
| updated | TIMESTAMP | DTTM |
| format | VARCHAR (50) | Physical books, E-books, and Audiobooks |

Reviews

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Description** |
| reviewId | SERIAL | Unique identifier for the review |
| custId | INTEGER | Foreign key referencing the Books table |
| bookId | INTEGER | Foreign key referencing the Customers table |
| rating | SMALLINT | Review rating (1-5) |
| reviewText | TEXT | Review text |
| created | TIMESTAMP | DTTM |
| updated | TIMESTAMP | DTTM |

Purchases

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Description** |
| purchaseId | SERIAL | Unique identifier for the review |
| custId | INTEGER | Foreign key referencing the Books table |
| bookId | INTEGER | Foreign key referencing the Customers table |
| purchaseDate | DATE | Review rating (1-5) |
| totalPrice | DECIMAL (10, 2) | Review text |
| paymentMethod | VARCHAR (50) | Its about Credit or debit card |
| created | TIMESTAMP | DTTM |
| updated | TIMESTAMP | DTTM |

**SQL Code Block: -** Here we are writing our Create Read, Update and Delete SQL queries.

**Creating table for Customers: -**

CREATE TABLE Customers (

custId SERIAL PRIMARY KEY,

fName VARCHAR(50) NOT NULL,

lName VARCHAR(50) NOT NULL,

emailId VARCHAR(100) NOT NULL UNIQUE,

cellNumb VARCHAR(20),

custAddress VARCHAR(500),

created TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

updated TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP

);

**Creating table for Authors: -**

CREATE TABLE Authors (

authId SERIAL PRIMARY KEY,

fName VARCHAR(50) NOT NULL,

lName VARCHAR(50) NOT NULL,

biography TEXT,

birthDate DATE,

nationality VARCHAR(50),

created TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

updated TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP

);

**Creating table for Publishers: -**

CREATE TABLE Publishers (

publisherId SERIAL PRIMARY KEY,

name VARCHAR(100) NOT NULL,

publisherAddress VARCHAR(500),

websiteUrl VARCHAR(100),

created TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

updated TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP

);

**Creating table for Books: -**

CREATE TABLE Books (

bookId SERIAL PRIMARY KEY,

title VARCHAR(100) NOT NULL,

bookLanguage VARCHAR (20) NOT NULL,

authId INTEGER NOT NULL REFERENCES Authors(authId),

publisherId INTEGER NOT NULL REFERENCES Publishers(publisherId),

genre VARCHAR(50) NOT NULL,

publicationDate DATE NOT NULL,

price DECIMAL(10, 2) NOT NULL,

pageCount INTEGER,

isbn VARCHAR(20),

bookDescription TEXT,

created TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

updated TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

format VARCHAR(50)

);

**Creating table for Reviews: -**

CREATE TABLE Reviews (

reviewId SERIAL PRIMARY KEY,

custId INTEGER NOT NULL REFERENCES Customers(custId),

bookId INTEGER NOT NULL REFERENCES Books(bookId),

rating SMALLINT NOT NULL CHECK (rating BETWEEN 1 AND 5),

reviewText TEXT,

created TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

updated TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP

);

**Creating table for Purchases: -**

CREATE TABLE Purchases (

purchaseId SERIAL PRIMARY KEY,

custId INTEGER NOT NULL REFERENCES Customers(custId),

bookId INTEGER NOT NULL REFERENCES Books(bookId),

purchaseDate DATE NOT NULL,

totalPrice DECIMAL(10, 2) NOT NULL,

paymentMethod VARCHAR(50),

created TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

updated TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP);

Here is data which we are inserting in our **PostgreSQL,** andwe have successfully inserted, fetched and updated our data as per our project requirements.

As we have took sample data from google as per our table column or attribute format.

* Inserting sample data into **Books table.**

INSERT INTO Books (title, bookLanguage, authId, publisherId, genre, publicationDate, price, pageCount, isbn, bookDescription,format) VALUES

('1984', 'English', 1, 1, 'Dystopian', '1949-06-08', 15.99, 328, '9780451524935', 'A dystopian social science fiction novel and cautionary tale.', 'physical books'),

('Pride and Prejudice', 'English', 2, 2, 'Romance', '1813-01-28', 12.99, 279, '9780141199078', 'A romantic novel of manners written by Jane Austen.', 'physical books'),

('The Adventures of Huckleberry Finn', 'English', 3, 3, 'Adventure', '1884-12-10', 14.99, 366, '9780143107323', 'A novel by Mark Twain, a sequel to The Adventures of Tom Sawyer.', 'physical books'),

('The Old Man and the Sea', 'English', 4, 1, 'Literary Fiction', '1952-09-01', 11.99, 127, '9780684830490', 'A short novel written by the American author Ernest Hemingway.', 'physical books'),

('Harry Potter and the Philosopher', 'English', 5, 2, 'Fantasy', '1997-06-26', 29.99, 223, '9780747532743', 'The first novel in the Harry Potter series and J.K. Rowlings debut novel.', 'physical books'),

('The Great Gatsby', 'English', 6, 3, 'Tragedy', '1925-04-10', 10.99, 180, '9780743273565', 'A 1925 novel written by American author F. Scott Fitzgerald.', 'physical books'),

('Murder on the Orient Express', 'English', 7, 1, 'Mystery', '1934-01-01', 9.99, 256, '9780062073501', 'A detective novel by English writer Agatha Christie featuring Hercule Poirot.', 'physical books'),

('A Tale of Two Cities', 'English', 8, 2, 'Historical', '1859-04-30', 13.99, 489, '9780141439600', 'A historical novel by Charles Dickens, set in London and Paris.', 'physical books'),

('War and Peace', 'Russian', 9, 3, 'Historical Fiction', '1869-01-01', 19.99, 1225, '9781400079988', 'A novel by the Russian author Leo Tolstoy.' ,'e-books'),

('One Hundred Years of Solitude', 'Spanish', 10, 1, 'Magical Realism', '1967-05-30', 18.99, 417, '9780060883287', 'A landmark 1967 novel by Colombian author Gabriel García Márquez.' ,'e-books'),

('To Kill a Mockingbird', 'English', 11, 2, 'Southern Gothic', '1960-07-11', 14.99, 281, '9780061120084', 'A novel by Harper Lee published in 1960.' ,'e-books'),

('Moby-Dick', 'English', 12, 3, 'Adventure', '1851-10-18', 11.99, 720, '9780142437247', 'A novel by Herman Melville.' ,'e-books'),

('The Hobbit', 'English', 13, 1, 'Fantasy', '1937-09-21', 14.99, 310, '9780547928227', 'A children fantasy novel by English author J. R. R. Tolkien.' ,'e-books'),

('Mrs Dalloway', 'English', 14, 2, 'Modernist', '1925-05-14', 13.99, 296, '9780156628709', 'A novel by Virginia Woolf that details a day in the life of Clarissa Dalloway.' ,'e-books'),

('The Raven', 'English', 15, 3, 'Poetry', '1845-01-29', 6.99, 64, '9780486266855', 'A narrative poem by Edgar Allan Poe.' ,'e-books'),

('Wuthering Heights', 'English', 16, 1, 'Gothic', '1847-12-01', 12.99, 416, '9780141439556', 'The only novel by Emily Brontë.' ,'e-books'),

('Ulysses', 'English', 17, 2, 'Modernist', '1922-02-02', 16.99, 730, '9780199535675', 'A modernist novel by Irish writer James Joyce.' ,'e-books'),

('The Time Machine', 'English', 18, 3, 'Science Fiction', '1895-01-01', 9.99, 118, '9780451528551', 'A science fiction novel by H. G. Wells.' ,'e-books'),

('The Picture of Dorian Gray', 'English', 19, 1, 'Philosophical Fiction', '1890-06-20', 10.99, 254, '9780141442464', 'A philosophical novel by Oscar Wilde.' ,'e-books'),

('Crime and Punishment', 'Russian', 20, 2, 'Psychological Fiction', '1866-01-01', 14.99, 671, '9780143107637', 'A novel by the Russian author Fyodor Dostoevsky.' ,'e-books'),

('Beloved', 'English', 21, 3, 'Historical Fiction', '1987-09-01', 12.99, 324, '9781400033416', 'A novel by the American writer Toni Morrison.' ,'e-books'),

('Desolación', 'Spanish', 22, 1, 'Poetry', '1922-01-01', 9.99, 256, '9789560003107', 'A book of poetry by the Chilean poet Gabriela Mistral.' 'e-books'),

('The Catcher in the Rye', 'English', 23, 2, 'Literary Fiction', '1951-07-16', 8.99, 277, '9780316769488', 'A novel by J. D. Salinger.' ,'e-books'),

('The Handmaid Tale', 'English', 24, 3, 'Dystopian', '1985-09-01', 15.99, 311, '9780385490818', 'A novel by Canadian author Margaret Atwood.' ,'e-books'),

('The House of the Spirits', 'Spanish', 25, 1, 'Magical Realism', '1982-01-01', 17.99, 481, '9780553383805', 'The debut novel of Isabel Allende.' ,'e-books'),

('Never Let Me Go', 'English', 26, 2, 'Science Fiction', '2005-03-03', 12.99, 288, '9781400078776', 'A dystopian science fiction novel by British author Kazuo Ishiguro.', 'audiobooks'),

('Runaway', 'English', 27, 3, 'Short Stories', '2004-11-17', 14.99, 352, '9781400077915', 'A book of short stories by Canadian author Alice Munro.', 'audiobooks'),

('My Name Is Red', 'Turkish', 28, 1, 'Historical', '1998-01-01', 13.99, 508, '9780375706851', 'A Turkish novel by writer Orhan Pamuk.', 'audiobooks'),

('Midnights Children', 'English', 29, 2, 'Historical Fiction', '1981-04-19', 16.99, 647, '9780812976533', 'A 1981 novel by British Indian author Salman Rushdie.', 'audiobooks'),

('The God of Small Things', 'English', 30, 3, 'Literary Fiction', '1997-04-01', 11.99, 321, '9780679457312', 'A novel by Indian writer Arundhati Roy.', 'audiobooks');

* Inserting sample data into **the Publishers table.**

INSERT INTO Publishers (name, publisherAddress, websiteUrl) VALUES

('Penguin Random House', '1745 Broadway, New York, NY 10019, USA', 'www.penguinrandomhouse.com'),

('HarperCollins', '195 Broadway, New York, NY 10007, USA', 'www.harpercollins.com'),

('Simon & Schuster', '1230 Avenue of the Americas, New York, NY 10020, USA', 'www.simonandschuster.com'),

('Hachette Livre', '58 rue Jean Bleuzen, 92170 Vanves, France', 'www.hachette.com'),

('Macmillan Publishers', '120 Broadway, New York, NY 10271, USA', 'us.macmillan.com'),

('Scholastic', '557 Broadway, New York, NY 10012, USA', 'www.scholastic.com'),

('Bloomsbury', '50 Bedford Square, London WC1B 3DP, UK', 'www.bloomsbury.com'),

('Pearson Education', '80 Strand, London, WC2R 0RL, UK', 'www.pearson.com'),

('Wiley', '111 River Street, Hoboken, NJ 07030, USA', 'www.wiley.com'),

('Springer', 'Tiergartenstraße 17, 69121 Heidelberg, Germany', 'www.springer.com'),

('Oxford University Press', 'Great Clarendon Street, Oxford OX2 6DP, UK', 'global.oup.com'),

('Cambridge University Press', 'University Printing House, Shaftesbury Road, Cambridge, CB2 8BS, UK', 'www.cambridge.org'),

('McGraw-Hill Education', '2 Penn Plaza, New York, NY 10121, USA', 'www.mheducation.com'),

('Cengage', '200 Pier 4 Blvd, Suite 400, Boston, MA 02210, USA', 'www.cengage.com'),

('Routledge', '711 Third Avenue, New York, NY 10017, USA', 'www.routledge.com'),

('SAGE Publications', '2455 Teller Road, Thousand Oaks, CA 91320, USA', 'us.sagepub.com'),

('Elsevier', 'Radarweg 29, 1043 NX Amsterdam, Netherlands', 'www.elsevier.com'),

('Taylor & Francis', '2&4 Park Square, Milton Park, Abingdon, OX14 4RN, UK', 'www.taylorandfrancis.com'),

('Thomson Reuters', '3 Times Square, New York, NY 10036, USA', 'www.thomsonreuters.com'),

('Johns Hopkins University Press', '2715 North Charles Street, Baltimore, MD 21218, USA', 'www.press.jhu.edu'),

('University of California Press', '155 Grand Avenue, Suite 400, Oakland, CA 94612, USA', 'www.ucpress.edu'),

('Duke University Press', '905 W Main St, Durham, NC 27701, USA', 'www.dukeupress.edu'),

('MIT Press', '1 Rogers Street, Cambridge, MA 02142, USA', 'mitpress.mit.edu'),

('Stanford University Press', '485 Broadway, First Floor, Redwood City, CA 94063-8460, USA', 'www.sup.org'),

('University of Chicago Press', '1427 E. 60th Street, Chicago, IL 60637, USA', 'www.press.uchicago.edu'),

('Princeton University Press', '41 William Street, Princeton, NJ 08540, USA', 'press.princeton.edu'),

('Yale University Press', '302 Temple Street, New Haven, CT 06511, USA', 'yalebooks.yale.edu'),

('Columbia University Press', '61 W. 62nd Street, New York, NY 10023, USA', 'cup.columbia.edu'),

('Indiana University Press', '601 N Morton St, Bloomington, IN 47404, USA', 'iupress.org'),

('University of Texas Press', 'P.O. Box 7819, Austin, TX 78713-7819, USA', 'utpress.utexas.edu');

* Inserting sample data into **the Customers table.**

INSERT INTO Customers (fName, lName, emailId, cellNumb, custAddress) VALUES

('John', 'Doe', 'john.doe@example.com', '123-456-7890', '123 Main St, Anytown, USA'),

('Jane', 'Smith', 'jane.smith@example.com', '123-456-7891', '456 Elm St, Anytown, CHINA'),

('Michael', 'Johnson', 'michael.johnson@example.com', '123-456-7892', '789 Oak St, Anytown, CA'),

('Emily', 'Brown', 'emily.brown@example.com', '123-456-7893', '101 Maple St, Anytown, USA'),

('David', 'Williams', 'david.williams@example.com', '123-456-7894', '202 Pine St, Anytown, USA'),

('Sarah', 'Jones', 'sarah.jones@example.com', '123-456-7895', '303 Cedar St, Anytown, USA'),

('Daniel', 'Garcia', 'daniel.garcia@example.com', '123-456-7896', '404 Birch St, Anytown, USA'),

('Laura', 'Martinez', 'laura.martinez@example.com', '123-456-7897', '505 Spruce St, Anytown, CA'),

('Robert', 'Rodriguez', 'robert.rodriguez@example.com', '123-456-7898', '606 Ash St, Anytown, USA'),

('Sophia', 'Lopez', 'sophia.lopez@example.com', '123-456-7899', '707 Fir St, Anytown, USA'),

('James', 'Gonzalez', 'james.gonzalez@example.com', '123-456-7800', '808 Willow St, Anytown, USA'),

('Olivia', 'Hernandez', 'olivia.hernandez@example.com', '123-456-7801', '909 Redwood St, Anytown, ASUTRALIYA'),

('Ethan', 'Wilson', 'ethan.wilson@example.com', '123-456-7802', '1010 Alder St, Anytown, USA'),

('Isabella', 'Anderson', 'isabella.anderson@example.com', '123-456-7803', '1111 Cypress St, Anytown, USA'),

('Matthew', 'Thomas', 'matthew.thomas@example.com', '123-456-7804', '1212 Hickory St, Anytown, USA'),

('Ava', 'Taylor', 'ava.taylor@example.com', '123-456-7805', '1313 Poplar St, Anytown, USA'),

('Joshua', 'Moore', 'joshua.moore@example.com', '123-456-7806', '1414 Palm St, Anytown, USA'),

('Mia', 'Jackson', 'mia.jackson@example.com', '123-456-7807', '1515 Sycamore St, Anytown, USA'),

('Alexander', 'Martin', 'alexander.martin@example.com', '123-456-7808', '1616 Pine St, Anytown, USA'),

('Amelia', 'Lee', 'amelia.lee@example.com', '123-456-7809', '1717 Oak St, Anytown, USA'),

('Christopher', 'Perez', 'christopher.perez@example.com', '123-456-7810', '1818 Elm St, Anytown, USA'),

('Charlotte', 'Thompson', 'charlotte.thompson@example.com', '123-456-7811', '1919 Maple St, Anytown, USA'),

('Andrew', 'White', 'andrew.white@example.com', '123-456-7812', '2020 Birch St, Anytown, USA'),

('Harper', 'Harris', 'harper.harris@example.com', '123-456-7813', '2121 Cedar St, Anytown, USA'),

('Joseph', 'Sanchez', 'joseph.sanchez@example.com', '123-456-7814', '2222 Spruce St, Anytown, USA'),

('Evelyn', 'Clark', 'evelyn.clark@example.com', '123-456-7815', '2323 Ash St, Anytown, USA'),

('Benjamin', 'Ramirez', 'benjamin.ramirez@example.com', '123-456-7816', '2424 Fir St, Anytown, USA'),

('Abigail', 'Lewis', 'abigail.lewis@example.com', '123-456-7817', '2525 Willow St, Anytown, USA'),

('William', 'Robinson', 'william.robinson@example.com', '123-456-7818', '2626 Redwood St, Anytown, INDIA'),

('Ella', 'Walker', 'ella.walker@example.com', '123-456-7819', '2727 Alder St, Anytown, CHINA');

* Inserting sample data into **the Authors table.**

INSERT INTO Authors (fName, lName, biography, birthDate, nationality) VALUES

('George', 'Orwell', 'English novelist and essayist', '1903-06-25', 'British'),

('Jane', 'Austen', 'English novelist known for her novels', '1775-12-16', 'British'),

('Mark', 'Twain', 'American writer, humorist, entrepreneur', '1835-11-30', 'American'),

('Ernest', 'Hemingway', 'American novelist and short story writer', '1899-07-21', 'American'),

('J.K.', 'Rowling', 'British author, best known for the Harry Potter series', '1965-07-31', 'British'),

('F. Scott', 'Fitzgerald', 'American novelist and short story writer', '1896-09-24', 'American'),

('Agatha', 'Christie', 'English writer known for her detective novels', '1890-09-15', 'British'),

('Charles', 'Dickens', 'English writer and social critic', '1812-02-07', 'British'),

('Leo', 'Tolstoy', 'Russian writer who is regarded as one of the greatest authors of all time', '1828-09-09', 'Russian'),

('Gabriel', 'Garcia Marquez', 'Colombian novelist and short story writer', '1927-03-06', 'Colombian'),

('Harper', 'Lee', 'American novelist known for To Kill a Mockingbird', '1926-04-28', 'American'),

('Herman', 'Melville', 'American novelist and poet', '1819-08-01', 'American'),

('J.R.R.', 'Tolkien', 'English writer, poet, and philologist', '1892-01-03', 'British'),

('Virginia', 'Woolf', 'English writer and modernist pioneer', '1882-01-25', 'British'),

('Edgar Allan', 'Poe', 'American writer, editor, and literary critic', '1809-01-19', 'American'),

('Emily', 'Brontë', 'English novelist and poet', '1818-07-30', 'British'),

('James', 'Joyce', 'Irish novelist and poet', '1882-02-02', 'Irish'),

('H.G.', 'Wells', 'English writer in many genres', '1866-09-21', 'British'),

('Oscar', 'Wilde', 'Irish poet and playwright', '1854-10-16', 'Irish'),

('Fyodor', 'Dostoevsky', 'Russian novelist, short story writer, and essayist', '1821-11-11', 'Russian'),

('Toni', 'Morrison', 'American novelist and Nobel Prize winner', '1931-02-18', 'American'),

('Gabriel', 'Mistral', 'Chilean poet-diplomat, educator, and humanist', '1889-04-07', 'Chilean'),

('J.D.', 'Salinger', 'American writer known for his novel The Catcher in the Rye', '1919-01-01', 'American'),

('Margaret', 'Atwood', 'Canadian poet, novelist, literary critic', '1939-11-18', 'Canadian'),

('Isabel', 'Allende', 'Chilean writer known for her novels', '1942-08-02', 'Chilean'),

('Kazuo', 'Ishiguro', 'British novelist, born in Nagasaki, Japan', '1954-11-08', 'British'),

('Alice', 'Munro', 'Canadian short story writer', '1931-07-10', 'Canadian'),

('Orhan', 'Pamuk', 'Turkish novelist, screenwriter, academic', '1952-06-07', 'Turkish'),

('Salman', 'Rushdie', 'British-Indian novelist and essayist', '1947-06-19', 'British-Indian'),

('Arundhati', 'Roy', 'Indian author best known for her novel The God of Small Things', '1961-11-24', 'Indian');

* Inserting sample data into **the Reviews table.**

INSERT INTO Reviews (custId, bookId, rating, reviewText) VALUES

(1, 1, 5, 'A haunting and profound book.'),

(2, 2, 4, 'A delightful read with excellent social commentary.'),

(3, 3, 5, 'An adventurous journey with deep themes.'),

(4, 4, 3, 'A well-written book but not my favorite.'),

(5, 5, 5, 'Magical and captivating.'),

(6, 6, 4, 'A tragic yet beautifully written story.'),

(7, 7, 4, 'A gripping mystery.'),

(8, 8, 5, 'An epic tale of love and sacrifice.'),

(9, 9, 5, 'A monumental piece of literature.'),

(10, 10, 4, 'A mesmerizing and complex narrative.'),

(11, 11, 5, 'A timeless classic.'),

(12, 12, 3, 'An intricate and demanding read.'),

(13, 13, 5, 'A wonderful and enchanting book.'),

(14, 14, 4, 'A powerful modernist work.'),

(15, 15, 4, 'A masterful piece of poetry.'),

(16, 16, 5, 'A dark and brooding masterpiece.'),

(17, 17, 4, 'A challenging but rewarding novel.'),

(18, 18, 5, 'A pioneering science fiction novel.'),

(19, 19, 4, 'A fascinating and thought-provoking story.'),

(20, 20, 5, 'A gripping psychological drama.'),

(21, 21, 5, 'A profound and moving narrative.'),

(22, 22, 4, 'A beautifully crafted book of poetry.'),

(23, 23, 4, 'A compelling and controversial novel.'),

(24, 24, 5, 'A powerful and prescient dystopian tale.'),

(25, 25, 4, 'A richly woven magical realist novel.'),

(26, 26, 4, 'A thought-provoking and emotional book.'),

(27, 27, 5, 'A brilliant collection of short stories.'),

(28, 28, 5, 'An intriguing historical novel.'),

(29, 29, 4, 'A vivid and imaginative narrative.'),

(30, 30, 5, 'A beautifully written and compelling story.');

* Inserting sample data into **the Purchases table.**

INSERT INTO Purchases (custId, bookId, purchaseDate, totalPrice, paymentMethod) VALUES

(1, 1, '2023-01-01', 15.99, 'Credit Card'),

(2, 2, '2023-01-02', 12.99, 'Credit Card'),

(3, 3, '2023-01-03', 14.99, 'PayPal'),

(4, 4, '2023-01-04', 11.99, 'Credit Card'),

(5, 5, '2023-01-05', 29.99, 'Debit Card'),

(6, 6, '2023-01-06', 10.99, 'Credit Card'),

(7, 7, '2023-01-07', 9.99, 'PayPal'),

(8, 8, '2023-01-08', 13.99, 'Credit Card'),

(9, 9, '2023-01-09', 19.99, 'Credit Card'),

(10, 10, '2023-01-10', 18.99, 'Debit Card'),

(11, 11, '2023-01-11', 14.99, 'Credit Card'),

(12, 12, '2023-01-12', 11.99, 'PayPal'),

(13, 13, '2023-01-13', 14.99, 'Credit Card'),

(14, 14, '2023-01-14', 13.99, 'Debit Card'),

(15, 15, '2023-01-15', 6.99, 'Credit Card'),

(16, 16, '2023-01-16', 12.99, 'PayPal'),

(17, 17, '2023-01-17', 16.99, 'Credit Card'),

(18, 18, '2023-01-18', 9.99, 'Debit Card'),

(19, 19, '2023-01-19', 10.99, 'Credit Card'),

(20, 20, '2023-01-20', 14.99, 'Credit Card'),

(21, 21, '2023-01-21', 12.99, 'PayPal'),

(22, 22, '2023-01-22', 9.99, 'Credit Card'),

(23, 23, '2023-01-23', 8.99, 'Debit Card'),

(24, 24, '2023-01-24', 15.99, 'Credit Card'),

(25, 25, '2023-01-25', 17.99, 'PayPal'),

(26, 26, '2023-01-26', 12.99, 'Credit Card'),

(27, 27, '2023-01-27', 14.99, 'Debit Card'),

(28, 28, '2023-01-28', 13.99, 'Credit Card'),

(29, 29, '2023-01-29', 16.99, 'Credit Card'),

(30, 30, '2023-01-30', 11.99, 'PayPal');

Here is query for update statement

**UPDATE Authors Table**

SET

fName = 'Mahendra',

lName = 'Patel',

biography = 'Updated biography text.',

birthDate = '2000-01-01',

nationality = 'UpdatedNationality',

updated = CURRENT\_TIMESTAMP

WHERE

authId = 1;

**UPDATE Publishers Table**

SET

name = 'Mahendra',

publisherAddress = ' Union St Waterloo CA',

websiteUrl = 'www.updatedpublisher.com',

updated = CURRENT\_TIMESTAMP

WHERE

publisherId = 7;

**UPDATE Books Table**

SET

title = 'My Life My Rules',

bookLanguage = 'Hindi',

authId = 1,

publisherId = 1,

genre = '3',

publicationDate = '2000-01-01',

price = 79.99,

pageCount = 777,

isbn = '9780000000000',

bookDescription = 'Updated description text.',

updated = CURRENT\_TIMESTAMP

WHERE

bookId = 1;

**UPDATE Reviews Table**

SET

custId = 2,

bookId = 9,

rating = 5,

reviewText = 'Updated review text.',

updated = CURRENT\_TIMESTAMP

WHERE

reviewId = 1;

**UPDATE PURCHASES Table**

SET TOTALPRICE = 79.99,

PAYMENTMETHOD = 'Credit Card CC'

WHERE PURCHASEID = 1;

Last one is for delete or drop any table from database.

Drop table PURCHASES;

So here we have completed our CRUD operation for all required tables as well we have successfully run all query in our database.

Here is the **DDL (Data Definition Language)** statement for creating the Customers table.

CREATE TABLE Customers (

custId SERIAL PRIMARY KEY,

fName VARCHAR(50) NOT NULL,

lName VARCHAR(50) NOT NULL,

emailId VARCHAR(100) NOT NULL UNIQUE,

cellNumb VARCHAR(20),

custAddress VARCHAR(500),

created TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP,

updated TIMESTAMP NOT NULL DEFAULT CURRENT\_TIMESTAMP

);

Here is the **DML (Data Manipulation Language)** statement for inserting a new review into the Customers table:

INSERT INTO Customers (fName, lName, emailId, cellNumb, custAddress) VALUES

('John', 'Doe', 'john.doe@example.com', '123-456-7890', '123 Main St, Anytown, USA'),

('Jane', 'Smith', 'jane.smith@example.com', '123-456-7891', '456 Elm St, Anytown, CHINA');

Here is the project question answer which is asked by our professor and its part our project.

**Q.1 Power writers (authors) with more than 10 books in the same genre published within the last 10 years.**

Answer: - SELECT

a.authId,

a.fName,

a.lName,

b.genre,

COUNT(b.bookId) AS book\_count

FROM

Authors a

JOIN

Books b ON a.authId = b.authId

WHERE

b.publicationDate >= CURRENT\_DATE - INTERVAL '10 years'

GROUP BY

a.authId, a.fName, a.lName, b.genre

HAVING

COUNT(b.bookId) > 10;

By running this query, the user could fetch around single row sample data.

Q.2. Loyal Customers who have spent more than 10 dollars in the last year?

Answer: -

SELECT

c.custId,

c.fName,

c.lName,

SUM(p.totalPrice) AS total\_spent

FROM

Customers c

JOIN

Purchases p ON c.custId = p.custId

WHERE

p.purchaseDate >= CURRENT\_DATE - INTERVAL '1 year'

GROUP BY

c.custId, c.fName, c.lName

HAVING

SUM(p.totalPrice) > 10.00;

By running this query, the user could fetch around 14 sample data.

Q.3 Well Reviewed books that has a better user rating than average

Ans: -

WITH average\_rating AS (

SELECT AVG(rating) AS avg\_rating

FROM Reviews

)

SELECT

b.bookId,

b.title,

AVG(r.rating) AS average\_rating

FROM

Books b

JOIN

Reviews r ON b.bookId = r.bookId

GROUP BY

b.bookId, b.title

HAVING

AVG(r.rating) > (SELECT avg\_rating FROM average\_rating);

By running this query, the user could fetch around 14 sample data.

Q.4 The most popular genre by sales?

Ans: -

SELECT

b.genre,

COUNT(p.purchaseId) AS total\_sales

FROM

Books b

JOIN

Purchases p ON b.bookId = p.bookId

GROUP BY

b.genre

ORDER BY

total\_sales DESC

LIMIT 1;

By running this query, the user could fetch around 1 sample data.

Q.5 The 10 most recent posted reviews by Customers

Ans: -

SELECT

r.reviewId,

r.custId,

r.bookId,

r.rating,

r.reviewText,

r.created

FROM

Reviews r

ORDER BY

r.created DESC

LIMIT 10;

By running this query, the user could fetch around 10 sample data.

As per project instructions we could not attach any kind of screenshot, so we haven’t added any screenshot to get sample date details please run query in PGAdmin.

**References: -**

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