Creating and Managing a Bookstore Database in PostgreSQL

Introduction This document provides a comprehensive guide for setting up and managing a bookstore database using PostgreSQL. It covers everything from installation to CRUD operations and optimization, ideal for educational purposes.

Step 1: Create a Database

- Create a new database named `BookStore`. This will store all information related to books, including details like name, price, genre, and availability.

Step 2: Create a Table

- Inside the `BookStore` database, create a table named `Books`.
- Define the `Books` table with the following columns:
    - **ID**: A unique identifier for each book (Primary Key, Auto-increment).
    - **Book Name**: The title of the book (String).
    - **Price**: The cost of the book in PKR (Integer).
    - **Genre**: The genre of the book (String).
    - **Available**: Availability status of the book (Boolean).

Step 3: Insert Data Insert the following records into the `Books` table:

1. **Harry Potter**
    - **Book Name**: "Harry Potter"
    - **Price**: 1200 PKR
    - **Genre**: "Fantasy"
    - **Available**: True
2. **Game of Thrones**
    - **Book Name**: "Game of Thrones"
    - **Price**: 1500 PKR
    - **Genre**: "Fantasy"
    - **Available**: True
3. **Big Data Basics**
    - **Book Name**: "Big Data Basics"
    - **Price**: 800 PKR
    - **Genre**: "Technology"
    - **Available**: False
4. **Learn SQL**
    - **Book Name**: "Learn SQL"
    - **Price**: 600 PKR

    - **Genre**: "Education"
    - **Available**: True

Step 4: Read Data

- Perform operations to view, search, and organize book data:
    1. **Display All Books**: Retrieve and display all details from the database.
    2. **Find Books by Name**: Search for books containing specific words or phrases in their names.
    3. **List Books Below a Certain Price**: Fetch all books priced below 100 PKR.
    4. **Sort Books by Price**: Display books sorted by price in ascending or descending order.
    5. **Filter Books by Genre**: Retrieve books of specific genres like "Fantasy" or "Education".
    6. **Show Available Books**: List only those books currently available.
    7. **Books Not Currently Available**: List all books marked as not available.

Step 5: Update Data

- Update the record for "Big Data Basics" in the `Books` table:
    - **Current Price**: 800 PKR
    - **Current Availability**: False
    - **Updated Values**:
        - **New Price**: 900 PKR
        - **New Availability**: True

Step 6: Delete Data

- Delete the book with title “Learn SQL”
