Database for online bookstore

Book

book_id	title	ISBN	publication_year	price	author_id
1	The Night Circus	978-0385534635	2011	$16.00	21
2	Where the Crawdads Sing	978-0735219090	2018	$26.00	22
3	The Vanishing Half	978-0525536291	2020	$27.00	23
4	The Alchemist	978-0062315007	1988	$16.00	24
5	The Silent Patient	978-1250301697	2019	$16.99	25

Author

author_id	name	birthplace
21	Erin Morgenstern	Salem, Massachusetts, USA
22	Delia Owens	Savannah, Georgia, USA
23	Brit Bennett	Los Angeles, California, USA
24	Paulo Coelho	Rio de Janeiro, Brazil
25	Alex Michaelides	Cyprus

Genre

genre_id	name
31	Adventure
32	Fantasy
33	Fiction
34	Psychological
35	Thriller

Customer

customer_id	name	email	address
41	Sarah Thompson	sarah.thompson@example.com	123 Maple Street, Springfield, IL 62701
42	David Martinez	david.martinez@example.com	456 Oak Avenue, Seattle, WA 98101
43	Emily Chen	emily.chen@example.com	789 Pine Lane, Austin, TX 78701

Orders

order_id	date	status	customer_id
51	January 1, 2018	delivered	41
52	July 7, 2019	delivered	43
53	November 25, 2020	delivered	42
54	September 30, 2021	delivered	42
55	March 14, 2022	shipped	41
56	May 15, 2023	on the way	41

Order_Book_Junction

order_book_id	book_id	order_id
71	3	51
72	2	52
73	5	52
74	3	53
75	1	53
76	4	53
77	5	54
78	1	55
79	3	55
771	4	56
772	5	56

Genre_Book_Junction

genre_book_id	book_id	genre_id
61	4	31
62	4	32
63	1	32
64	3	33
65	2	33
66	5	34
67	5	35

Database written description on relationships and normalizations

Tables Normalization

- **1NF** - every table contains single value for each record. For example: “name”, “ISBN”, “email” → contain one information inside for each row.
- **2NF** - all attributes are fully dependent on the primary key. For example: “title”, “ISBN”, “price” → are dependent from book_id key.
- **3NF** - each piece of information is directly related to the primary key, with no indirect links through other columns. For example: in the Book table, all attributes depend only on book_id, and author_id serves as a direct reference.

Relationships:

- Books and Authors - M:1 → Each book is linked to one author, while an author can write multiple books.
- Books and Genres - M:M → A book can belong to multiple genres, and each genre can include multiple books.
- Orders and Books - M:M → An order can include multiple books, and a book can appear in multiple orders.
- Customers and Orders - 1:M → Each customer can place multiple orders, but each order is placed by one customer.

Benefits of using Database for online bookstore

- **Easy Management**: Makes it simple to search for and organize information about books, authors, and orders.
- **Growth Potential**: Can easily handle more data as the bookstore expands.