

**Entities:**

1. **Book**
2. **Author**
3. **Genre**
4. **Customer**
5. **Order**
6. **Order detail**

**Entities of attributes:**

**Book:**

1. Unique ISBN
2. Title
3. Publication year
4. Price
5. Quantity in stock

**Author:**

1. Unique author ID
2. Name
3. Biography

**Genre:**

1. Fiction
2. Non-fiction
3. Science fiction
4. Arts
5. Literature
6. Etc

**Customer:**

1. Unique customer ID
2. Name
3. Email address
4. Shipping address

**Order:**

1. ID
2. Order date
3. Total price

**Order detail:**

1. Multiple books
2. Quantity of each book ordered
3. Price at the time of purchase

**Relationship**

1. **Book and Author (Many to many)**

One book have many authors

One author have many books

1. **Book to Genre (Many to many)**

One book have one or more genre

Each genre have many books

1. **Book to customer (Many to many)**

One book can order many customer

One customer can order many books

1. **Customer and Order (One to Many)**

One customer have many order

Oner order belongs to only one customer

1. **Order to Order details(One to many)**

One Order have many order detail

One Order detail have many Order. (For Example one customer have more than one order)



1. **Numeric Data Types (For storing numbers)**

| **Data Type** | **Storage** | **Description** |
| --- | --- | --- |
| TINYINT | 1 byte | Small integer (-128 to 127) |
| SMALLINT | 2 bytes | Medium integer (-32,768 to 32,767) |
| MEDIUMINT | 3 bytes | Larger integer (-8M to 8M) |
| INT (INTEGER) | 4 bytes | Standard integer (-2B to 2B) |
| BIGINT | 8 bytes | Very large integer (-9 quintillion to 9 quintillion) |
| DECIMAL (NUMERIC) | Varies | Exact decimal numbers |
| FLOAT | 4 bytes | Approximate floating-point (single precision) |
| DOUBLE | 8 bytes | Approximate floating-point (double precision) |
| BIT | Varies | Stores binary values (0 and 1) |

**2️. Date & Time Data Types (For storing dates and times)**

| **Data Type** | **Storage** | **Description** |
| --- | --- | --- |
| DATE | 3 bytes | YYYY-MM-DD (e.g., 2025-03-24) |
| DATETIME | 8 bytes | YYYY-MM-DD HH:MM:SS |
| TIMESTAMP | 4 bytes | UNIX timestamp (auto-updates) |
| TIME | 3 bytes | HH:MM:SS format |
| YEAR | 1 byte | YYYY (e.g., 2024) |

**3️. String (Character & Text) Data Types**

| **Data Type** | **Storage** | **Description** |
| --- | --- | --- |
| CHAR(n) | Fixed | Fixed-length string (1 to 255) |
| VARCHAR(n) | Varies | Variable-length string (1 to 65535) |
| TEXT | Varies | Large text (max 65,535 chars) |
| TINYTEXT | 255 bytes | Small text (255 chars max) |
| MEDIUMTEXT | 16 MB | Medium text (16,777,215 chars max) |
| LONGTEXT | 4 GB | Very large text (4,294,967,295 chars max) |
| BLOB | Varies | Binary Large Object (stores images, videos) |
| TINYBLOB | 255 bytes | Small binary data |
| MEDIUMBLOB | 16 MB | Medium binary data |
| LONGBLOB | 4 GB | Large binary data |
| ENUM | 1-2 bytes | Predefined values (e.g., 'Male', 'Female') |
| SET | 1-8 bytes | Multiple predefined values |