**Database design**

**Introduction**

**Database**: The collection of data is called database. The data can be anything such as text, image, video, audio anything. These data is stored in some medium following any of the format is called database. The database is of different types, in this system we will be using a relational database which will store the data in table format as rows and columns.

**Database design**: The designing of the database is very essential as to have some means to store the data that we get from the system. The relational database design uses the table format and it stores the data in rows and columns. The database will have the tables and each table will have its unique attributes of different types based on the data stored by the system.

The database for onlinebookstore is organized into 10 tables:

* address
* administrator
* billing
* books
* bookseller
* book\_author
* category
* customer
* location
* purchase

**Schema Description:**

**Address Table: address**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **address\_id** | int(10) | Address Id | Primary Key |
| custid | int(10) | Customer Id | Foreign Key |
| address | text | Address | Not Null |
| state | varchar(25) | State | Not Null |
| country | varchar(25) | Country | Not Null |
| pincode | varchar(10) | Pincode | Not Null |
| contactno | varchar(15) | Contact number | Not Null |

**Employee Table: administrator**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **admin\_id** | int(10) | Administrator Id | Primary Key |
| name | varchar(20) | Name of the administrator | Not Null |
| login\_id | varchar(100) | Admin Login Id | Not Null |
| a\_password | varchar(255) | Admin Password | Not Null |
| email\_id | varchar(30) | Admin email Id | Not Null |
| contactno | varchar(20) | Admin contact number | Not Null |

**Message Table: billing**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **bill\_id** | int(10) | Billing Id | Primary Key |
| custid | int(10) | Customer Id | Foreign Key |
| address\_id | int(10) | Address Id | Foreign Key |
| purch\_date | date | Purchase date | Not Null |
| deliv\_date | date | Delivery date | Not Null |
| cardtype | varchar(25) | Card type | Not Null |
| cardno | varchar(20) | Card number | Not Null |
| cvvno | varchar(5) | CVV number | Not Null |
| expirydate | varchar(10) | Expiry date | Not Null |
| comment | text | Comment | Not Null |
| status | varchar(10) | Billing Status | Not Null |

**Message Table: books**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **book\_id** | int(10) | Book Id | Primary Key |
| cat\_id | int(10) | Category Id | Foreign Key |
| seller\_id | int(10) | Book seller Id | Foreign Key |
| book\_author\_id | int(11) | Book Author Id | Foreign Key |
| book\_type | varchar(25) | Book type | Not Null |
| book\_name | varchar(255) | Book name | Not Null |
| language | varchar(25) | Book language | Not Null |
| price | bigint(20) | Book Price | Not Null |
| discount | bigint(20) | Book Discount | Not Null |
| stockstatus | varchar(20) | Stock Status | Not Null |
| deliveredin | varchar(50) | Book delivery date | Not Null |
| book\_description | text | Book description | Not Null |
| images | text | Book cover page image | Not Null |
| digital\_book\_link | varchar(255) | Digital Book Link | Not Null |
| demo\_book\_link | varchar(255) | Preview Demo Link | Not Null |
| number\_of\_pages | int(11) | Number of Pages in book | Not Null |
| status | varchar(10) | Book Status | Not Null |

**Message Table: book\_seller**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **seller\_id** | int(10) | Seller Id | Primary Key |
| compname | varchar(25) | Company name | Not Null |
| address | text | Company address | Not Null |
| state | varchar(20) | Company state | Not Null |
| country | varchar(20) | Company country | Not Null |
| contact\_no | varchar(20) | Company contact number | Not Null |
| login\_id | varchar(100) | Login ID | Not Null |
| s\_password | varchar(255) | Seller password | Not Null |
| last\_login | datetime | Seller Last login date time | Not Null |
| created\_at | datetime | Account created date time | Not Null |
| imgpath | varchar(100) | Company Image | Not Null |
| status | varchar(10) | Seller status | Not Null |

**Message Table: book\_author**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **book\_author\_id** | int(10) | Book author Id | Primary Key |
| author\_name | varchar(50) | Author name | Not Null |
| about\_author | text | About author | Not Null |
| author\_img | varchar(255) | Author Image | Not Null |
| author\_status | varchar(10) | Author status | Not Null |

**Message Table: category**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **cat\_id** | int(10) | Category Id | Primary Key |
| cat\_name | varchar(200) | Category name | Not Null |
| cat\_des | text | Category description | Not Null |

**Message Table: customer**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **custid** | int(11) | Customer Id | Primary Key |
| custfname | varchar(25) | Customer first name | Not Null |
| custlname | varchar(25) | Customer last name | Not Null |
| dob | date | Customer date of birth | Not Null |
| email | varchar(50) | Customer email Id | Not Null |
| c\_password | varchar(255) | Customer password | Not Null |
| status | varchar(10) | Customer status | Not Null |

**Message Table: location**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **location\_id** | int(11) | Location Id | Primary Key |
| name | varchar(30) | Location Name | Not Null |
| location\_type | tinyint(1) | Location type | Not Null |
| parent\_id | int(11) | Parent ID | Not Null |
| is\_visible | tinyint(1) | Visibility status | Not Null |

**Message Table: purchase**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Remarks** |
| **purch\_id** | int(10) | Purchase Id | Primary Key |
| book\_id | int(10) | Book Id | Foreign Key |
| cust\_id | int(10) | Customer Id | Foreign Key |
| bill\_id | int(10) | Billing Id | Foreign Key |
| qty | float(10,2) | Purchase Quantity | Not Null |
| price | double(10,2) | Purchase amount | Not Null |
| comments | text | Comments | Not Null |
| purchasestatus | varchar(20) | Purchase status | Not Null |

**Entity-Relationship Diagram:**

The entity relationship diagram is used to represent the relationship between the different tables in the database. This diagram shows the connection between the different entities with one another. The tables in the database have primary keys and foreign keys through which they are related to each other. In the ER diagram the entities and attributes are represented and their relationship is also drawn which makes the understanding of the database clearly.

|  |  |  |
| --- | --- | --- |
| **Name** | **Notation** | **Description** |
| Entity |  | Entity is represented as a rectangular box. This includes the table names of the database. |
| Relationship |  | The diamond shape or rhombus is used to represent the relationship. This denotes the relationship between the entities. |
| Attributes |  | The oval shape is used to represent the attributes. The attributes are the various fields of the entity or the table in the database. |

**ER Diagram:**

