1. (1NF)

**Borrow Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Borrow ID (PK)** | **Member Name** | **Member phone** | **Borrow Date** |
| 201 | Ali | 9876543210 | 2025-01-10 |
| 202 | Fatma | 9871234560 | 2025-01-12 |

**Book Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Book ID (PK)** | **Book Title** | **Author Name** | **Author Nationality** |
| B101 | Database Systems | Ramez Elmasri | USA |
| B205 | Data Science | Joel Grus | USA |
| B305 | Python Basics | Mark Lutz | UK |

**Transaction Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Borrow ID (PK)** | **Book ID** | **Return Date** | **Fine Amount** |
| 201 | B101 | 2025-01-20 | 0 |
| 202 | B205 | 2025-01-25 | 5 |
| 201 | B305 | 2025-01-22 | 2 |

In **First Normal Form (1NF)**, the goal is to make sure each piece of information is in its simplest form and there are no repeated groups. For example, instead of having multiple book details listed under one borrow record, we separate them into different tables, one for member information, one for book information, and one for borrowed books. Each table has a unique ID to identify each row.

1. (2NF)

In **Second Normal Form (2NF)**, It is total So no need create table.we make sure that each table’s columns depend only on the primary key (the unique ID of each record). If a column is not related to the primary key, it needs to be separated. In our case, there’s nothing extra to fix because each column in the tables already depends on the primary key.

1. (3NF)

**Authors Table**

|  |  |
| --- | --- |
| **Author Name** | **Author Nationality** |
| Ramez Elmasri | USA |
| Joel Grus | USA |
| Mark Lutz | UK |

**Borrow Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Borrow ID (PK)** | **Member Name** | **Member phone** | **Borrow Date** |
| 201 | Ali | 9876543210 | 2025-01-10 |
| 202 | Fatma | 9871234560 | 2025-01-12 |

**Book Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Book ID (PK)** | **Book Title** | **Author Name** | **Author Nationality** |
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| B205 | Data Science | Joel Grus | USA |
| B305 | Python Basics | Mark Lutz | UK |

**Transaction Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Borrow ID (PK)** | **Book ID** | **Return Date** | **Fine Amount** |
| 201 | B101 | 2025-01-20 | 0 |
| 202 | B205 | 2025-01-25 | 5 |
| 201 | B305 | 2025-01-22 | 2 |

1. ERD

