**6. Database design**

**6.1 Logical diagram**

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**6.2 Data Dictionary**

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| --- | --- |
| **Entity Data dictionary: describe content of all entities** | |
| **Entity Name** | **Description** |
| User |  |
| Book |  |
| RFIDTag |  |
| Transaction |  |
| Publisher |  |
| Writer |  |
| Role |  |
| BookStatus |  |
| BookType |  |
| RFIDTagType |  |
| TagStatus |  |
| TransactionStatusus |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Entity name** | **Attributes** | **Description** | **Domain** | **Null** |
| User | userID {PK} | Unique identifier of user, auto increment | int | No |
| userCode | User code | nvarchar(10) | No |
| fullName | Full name | nvarchar(50) | No |
| dateOfBirth | Date of birth | date | No |
| phoneNumber | Phone number | nchar(12) | No |
| email | Email | nvarchar(50) | No |
| role {FK} | Role | int | No |
| rfidTag {FK} | RFID Tag | int | No |
| Book | bookID {PK} | Unique identifier of book, auto increment | int | No |
| title | Book title | nvarchar(50) | No |
| type {FK} | book type | int | No |
| publisher {FK} | Publisher | int | No |
| author {FK} | Author | int | No |
| importDate | Import date | date | No |
| rfidTag {FK} | RFID Tag | int | No |
| status {FK} | Book status | int | No |
| RFIDTag | RFIDTagID {PK} | Unique identifier of RFIDTag, auto increment | int | No |
| UID | UID of tag | nvarchar(20) | No |
| Type {FK} | Rfid tag type | int | No |
| importDate | Import date | date | No |
| status {FK} | Rfid tag status | int | No |
| operateTimes | Operate times | int | No |
| Transaction | transactionID {PK} | Unique identifier of Transaction, auto increment | int | No |
| userID {FK} |  | int | No |
| bookID {FK} |  | int | No |
| borrowDate | Borrow date | datetime | No |
| expectedReturn | Expected return | datetime | No |
| status {FK} | Transaction status | int | No |
| Role | roleID {PK} | Unique identifier of role, auto increment | int | No |
| title | Role title | nvarchar(15) | No |
| Publisher | publisherID {PK} | Unique identifier of publisher, auto increment | int | No |
| title | Publisher name | nvarchar(15) | No |
| Writer | writerID {PK} | Unique identifier of writer, auto increment | int | No |
| title | Writer name | nvarchar(15) | No |
| BookStatus | bookStatusID {PK} | Unique identifier of book status, auto increment | int | No |
| title | Status’s name | nvarchar(15) | No |
| BookType | bookTypeID {PK} | Unique identifier of book type, auto increment | int | No |
| title | Type’s name | nvarchar(15) | No |
| RFIDTagType | RFIDTagTypeID {PK} | Unique identifier of RFID tag type, auto increment | int | No |
| title | Tag type’s name | nvarchar(15) | No |
| TagStatus | tagStatusID {PK} | Unique identifier of Tag status, auto increment | int | No |
| title | Tag status’s name | nvarchar(15) | No |
| TransactionStatusus | TransactionStatususID {PK} | Unique identifier of transaction status, auto increment | int | No |
| title | Status’s name | nvarchar(15) | No |