Mô hình hoá dữ liệu vật lý (Physical data model)

**1. User:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  |  | username | VARCHAR(255) | Yes | Username |
| 3 |  |  | password | VARCHAR(255) | Yes | Password |
| 4 |  |  | fullname | VARCHAR(255) | Yes | Name |
| 5 |  |  | phone | VARCHAR(55) | Yes | Phone number |
| 6 |  |  | dateOfBirth | Datetime | Yes | Date of birth |
| 7 |  |  | province | VARCHAR(255) | Yes | Province |
| 8 |  |  | address | VARCHAR(255) | Yes | Address |
| 9 |  |  | email | VARCHAR(255) | Yes | Email |

**2. Bike:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  |  | batteryCapicity | Integer | Yes | Current battery capicity |
| 3 |  |  | batteryCurrent | Integer | Yes | Current battery |
| 4 |  |  | type | VARCHAR(255) | Yes | Type of bike |
| 5 |  | x | currentDock | int | Yes |  |

**3. DockingStation:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  |  | name | VARCHAR(255) | Yes | Dock Station Name |
| 3 |  |  | address | VARCHAR(255) | Yes | Dock Station Address |
| 4 |  |  | Area | VARCHAR(255) | Yes | Area |
| 5 |  |  | numAvailableBike | Integer | Yes | Num bike is available |
| 6 |  | x | availableBikes | Integer[] | Yes | Available Bikes |

**4. CreditInfo:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  |  | brand | VARCHAR(255) | Yes | Disc type |
| 3 |  |  | number | VARCHAR(55) | Yes | Card number |
| 4 |  |  | cvv | VARCHAR(55) | Yes | CVV |
| 5 |  |  | name | VARCHAR(255) | Yes | Nam on card |
| 6 |  |  | expiry | DATETIME | Yes | Expire date |

**5. RentalTransaction:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  | x | userID | Integer | Yes | User id |
| 3 |  | x | bikeID | Integer | Yes | Bike id |
| 4 |  | x | fromDock | Integer | Yes | From Docking Station |
| 5 |  | x | toDock | Integer | Yes | To Docking Station |
| 6 |  |  | startAt | DATETIME | Yes | Started time |
| 7 |  |  | endAt | DATETIME | Yes | Ended time |
| 8 |  |  | status | VARCHAR(55) | Yes | Status |
| 9 |  |  | type | VARCHAR(55) | Yes | Type |
| 10 |  | x | paymentTxId | Integer | Yes | Payment Transaction Id |

**6. PaymentTransaction:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  |  | balance | Integer | Yes | Balance |
| 3 |  | x | userId | Integer | Yes | User Id |
| 4 |  | x | rentalTx | Integer | Yes | Rental transaction Id |
| 5 |  |  | Status | Integer | Yes |  |

**9. PaymentTransaction:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  |  | createAt | DATETIME | Yes | Date of creation |
| 3 |  |  | content | VARCHAR(200) | Yes | Transactions contents |
| 4 |  |  | method | VARCHAR(45) | Yes | Payment methods |
| 5 |  | x | invoiceId | Integer | Yes | Invoice Id |