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 |  | x | creaditCardId | Integer | Yes | Credit Card |

**2. Bike:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  | x | currentRentalTx | Integer | Yes | Current Rental Transaction |
| 3 |  |  | currentBattery | Integer | Yes | Current battery |
| 4 |  |  | type | VARCHAR(255) | Yes | Type of bike |
| 5 |  | x | currentDock | int | Yes | Current Dock |
| 6 |  |  | licenseLates | VARCHAR(255) | Yes | License lates |

**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 |  |  | dockCapicity | VARCHAR(255) | Yes | Dock Capicity |
| 6 |  | x | availableBikes | Integer[] | Yes | Available Bikes |

**4. CreditCard:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **PK** | **FK** | **Column name** | **Data type** | **Mandatory** | **Description** |
| 1 | x |  | id | Integer | Yes | ID, auto increase |
| 2 |  |  | cardHolderName | VARCHAR(255) | Yes | Card Holder Name |
| 3 |  |  | cardNumber | VARCHAR(55) | Yes | Card number |
| 4 |  |  | bank | VARCHAR(255) | Yes | Bank name |
| 6 |  |  | expirationDate | 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 |

**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 | creditCardId | Integer | Yes | Credit Card |
| 5 |  |  | Description | VARCHAR(255) | Yes | Description |

**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 |