Database Design for Security Guard Rental System

# Customers Table (Khách hàng)

| Field Name | Data Type | Constraints |  |  |
| --- | --- | --- | --- | --- |
| customer\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |
| name | VARCHAR(255) | NOT NULL |  |  |
| address | VARCHAR(255) | NOT NULL |  |  |
| phone\_number | VARCHAR(20) | NOT NULL |  |  |
| email | VARCHAR(255) | NOT NULL, UNIQUE |  |  |

# Security Companies Table (Công ty vệ sĩ)

| Field Name | Data Type | Constraints |  |  |
| --- | --- | --- | --- | --- |
| company\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |
| name | VARCHAR(255) | NOT NULL |  |  |
| address | VARCHAR(255) | NOT NULL |  |  |
| phone\_number | VARCHAR(20) | NOT NULL |  |  |
| email | VARCHAR(255) | NOT NULL, UNIQUE |  |  |

# Security Guards Table (Vệ sĩ)

| Field Name | Data Type | Constraints |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| guard\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |  |  |
| company\_id | INT | FOREIGN KEY REFERENCES SecurityCompanies(company\_id) |  |  |  |  |
| name | VARCHAR(255) | NOT NULL |  |  |  |  |
| phone\_number | VARCHAR(20) | NOT NULL |  |  |  |  |
| email | VARCHAR(255) | NOT NULL, UNIQUE |  |  |  |  |
| license\_number | VARCHAR(50) | NOT NULL, UNIQUE |  |  |  |  |
| certification | VARCHAR(255) |  |  |  |  |  |

# Service Requests Table (Dịch vụ)

| Field Name | Data Type | Constraints |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| request\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |  |  |  |  |
| customer\_id | INT | FOREIGN KEY REFERENCES Customers(customer\_id) |  |  |  |  |  |  |
| company\_id | INT | FOREIGN KEY REFERENCES SecurityCompanies(company\_id) |  |  |  |  |  |  |
| number\_of\_guards | INT | NOT NULL |  |  |  |  |  |  |
| service\_details | TEXT | NOT NULL |  |  |  |  |  |  |
| start\_date | DATE | NOT NULL |  |  |  |  |  |  |
| end\_date | DATE | NOT NULL |  |  |  |  |  |  |
| budget | DECIMAL(10,2) | NOT NULL |  |  |  |  |  |  |
| status | VARCHAR(50) | NOT NULL |  |  |  |  |  |  |

# Contracts Table (Hợp đồng)

| Field Name | Data Type | Constraints |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| contract\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |  |  |  |  |
| request\_id | INT | FOREIGN KEY REFERENCES ServiceRequests(request\_id) |  |  |  |  |  |  |
| company\_id | INT | FOREIGN KEY REFERENCES SecurityCompanies(company\_id) |  |  |  |  |  |  |
| customer\_id | INT | FOREIGN KEY REFERENCES Customers(customer\_id) |  |  |  |  |  |  |
| contract\_date | DATE | NOT NULL |  |  |  |  |  |  |
| start\_date | DATE | NOT NULL |  |  |  |  |  |  |
| end\_date | DATE | NOT NULL |  |  |  |  |  |  |
| total\_amount | DECIMAL(10,2) | NOT NULL |  |  |  |  |  |  |
| status | VARCHAR(50) | NOT NULL |  |  |  |  |  |  |

# Guard Assignments Table (Phân công vệ sĩ)

| Field Name | Data Type | Constraints |  |  |  |
| --- | --- | --- | --- | --- | --- |
| assignment\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |  |
| contract\_id | INT | FOREIGN KEY REFERENCES Contracts(contract\_id) |  |  |  |
| guard\_id | INT | FOREIGN KEY REFERENCES SecurityGuards(guard\_id) |  |  |  |
| start\_date | DATE | NOT NULL |  |  |  |
| end\_date | DATE | NOT NULL |  |  |  |
| hours\_worked | INT |  |  |  |  |

# Attendance Table (Chấm công)

| Field Name | Data Type | Constraints |  |  |  |
| --- | --- | --- | --- | --- | --- |
| attendance\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |  |
| guard\_id | INT | FOREIGN KEY REFERENCES SecurityGuards(guard\_id) |  |  |  |
| date | DATE | NOT NULL |  |  |  |
| check\_in\_time | TIME | NOT NULL |  |  |  |
| check\_out\_time | TIME | NOT NULL |  |  |  |
| hours\_worked | INT | NOT NULL |  |  |  |

# Feedback Table (Phản hồi)

| Field Name | Data Type | Constraints |  |  |  |
| --- | --- | --- | --- | --- | --- |
| feedback\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |  |
| contract\_id | INT | FOREIGN KEY REFERENCES Contracts(contract\_id) |  |  |  |
| customer\_id | INT | FOREIGN KEY REFERENCES Customers(customer\_id) |  |  |  |
| feedback\_date | DATE | NOT NULL |  |  |  |
| rating | INT | NOT NULL |  |  |  |
| comments | TEXT |  |  |  |  |

# Training Table (Đào tạo)

| Field Name | Data Type | Constraints |  |  |
| --- | --- | --- | --- | --- |
| training\_id | INT | PRIMARY KEY, AUTO\_INCREMENT |  |  |
| guard\_id | INT | FOREIGN KEY REFERENCES SecurityGuards(guard\_id) |  |  |
| training\_date | DATE | NOT NULL |  |  |
| training\_details | TEXT | NOT NULL |  |  |
| result | VARCHAR(50) | NOT NULL |  |  |

**Mối quan hệ:**

 **Customers** có thể có nhiều **ServiceRequests**.

 **SecurityCompanies** có thể cung cấp dịch vụ cho nhiều **Customers** và có nhiều **SecurityGuards**.

 **ServiceRequests** có thể dẫn đến nhiều **Contracts**.

 **Contracts** có thể có nhiều **GuardAssignments**.

 **SecurityGuards** có thể có nhiều **GuardAssignments** và nhiều bản ghi **Attendance**.

 **Contracts** có thể nhận được nhiều **Feedback** từ **Customers**.

 **SecurityGuards** có thể tham gia nhiều buổi **Training**.