**Introduction**

The Prison Management System is designed to organize and manage various aspects of prison operations. It records details of prisons, wardens, officers, prisoners, cells, and other staff, while also capturing important relationships among them. Each prison is uniquely managed by one warden, supported by officers, case managers, chefs, medical workers, and police officers. Prisoners are assigned to cells and connected with case managers, lawyers, medical staff, visitors, and chefs during their stay.

The system supports multiple phone numbers for key roles and manages many-to-many relationships, such as those between prisoners and lawyers, visitors, or medical workers. It also tracks cases involving prisoners, including court details, outcomes, and investigations. Overall, it ensures efficient management of records, staff, and facilities, maintaining secure and smooth prison operations.

**Scenario Description**

In a Prison Management System, a prison is identified by a Prison ID, and its details such as Prison Name, Location, Type, Capacity, Number\_of\_Cells, and Total\_Inmates are stored. Each prison is managed by exactly one warden, and each warden manages exactly one prison. A warden is identified by a Warden ID, and the system also stores W\_Name, W\_Rank, W\_Phone, and Responsibilities.warden can have more that one phone number . A prison has many officers, and each officer is assigned to exactly one prison. An officer is identified by an Officer ID, and System store O\_Name, O\_Rank, O\_Shift\_Timings, Assigned\_Block, and O\_Phone as well.Oficer can have more than one phone number . A prison contains many prisoners, and each prisoner contain by exactly one prison. A prisoner is identified by a Prisoner ID, and the system keeps details such as P\_Name, Age, Gender, Crime\_Type, Sentence\_Start\_Date, Sentence\_End\_Date, Medical\_History, and Status. Each prison hold several cells, and each cell belongs to exactly one prison. A cell is identified by a Cell\_ID, and System also store C\_Capacity, Cell\_Type, and Security\_Level are stored. A cell may be assigned to one or more prisoners, and each prisoner is assigned in exactly one cell.Each prisoner is handled by exactly one case manager, and each case manager handle many prisoners. A case manager is identified by a Case Manager ID and includes C\_Name, Case\_History, and Release\_Plan. Each prisoner have multiple lawyers, and each lawyer have multiple prisoners**.** A lawyer is identified by a Lawyer ID, with details such as L\_Name, L\_Specialization, Firm\_Name, and L\_Phone.lawyer can have multiple phone number . A prisoner may be treated by several medical workers, and a medical worker may treat several prisoners. A medical worker is identified by a Medical Worker ID, and the system records their M\_Name, M\_Role, M\_Phone, and Medical\_Record. A prisoner may receive visits from several visitors, and a visitor may visit several prisoners. A visitor is identified by a Visitor ID, and details such as V\_Name, Relationship\_to\_Prisoner, Visit\_Date, and Approval\_Status are kept.Each case may involve several prisoners, and each prisoner may be involved in several cases. A case is identified by a Case ID, and information such as Case\_Type, Court\_Date, Outcome, Sentence, and Appeal\_Status is stored. A case may be investigated by several police officers, and a police officer may investigate several cases. A police officer is identified by a Police ID, and the system records their PO\_Name, PO\_Rank, Department, and PO\_Phone. Polic can have multiple phone number A case may include several lawyers, and A lawyer may be included in several cases. A prison keeps many chefs, and each chef is kept by in exactly one prison. A chef is identified by a Chef ID, and attributes such as Ch\_Name, Ch\_Role, Ch\_Shift\_Timings, Ch\_Phone, and Ch\_Specialization are stored. Chefs provide meals to many prisoners, and each prisoner get meals provided by multiple chefs during their stay.chef can have multiple phone number.

**ER diagram:**

A diagram of a flowchart

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**Prison** – Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates

Cell ID, C\_Capacity, Cell\_Type, Security\_Level

**Cell** – Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates

Cell ID, C\_Capacity, Cell\_Type, Security\_Level

**Warden** – Warden ID ,W\_Name,W\_ Rank, W\_phone, Responsibilities

**Officer** – Officer ID, 0\_Name,0\_Rank, 0\_Shift\_Timings, Assigned\_Block,O\_phone

**Prisoner** – Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History

**Case Manager** – Case Manager ID,C\_ Name, Case\_History, Release\_Plan

**Lawyer** – Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone

**Medical Worker** – Medical Worker ID, M\_Name,M\_Role,M\_phone, Medical\_Record(s)

**Visitor** – Visitor ID,V\_ Name, Relationship\_to\_Prisoner, Visit\_Date, Approval\_Status

**Police** – Police\_ID, PO\_Name,PO\_Rank, Department,PO\_ phone

**Case** – Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**Chefs**– Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

 **Prison – Warden (1:1)** →. **manage**

 **Prison – Officer (1:N)** -> has

 **Prison – Prisoner (1:N)** →.contain

 **Cell- Prisoner (1:N)** → assign

**Prison – cell (1:M)->** hold

**Case Manager (1) - Prisoner (Many)-> handled**

 **Prisoner – Lawyer (M:M)** → have



 **Prisoner – Medical Worker (M:m) → treat**

 **Prisoner – Visitor (M:M)** → visit

 **Case – Prisoner (m:m)** → involves

 **Case – Police (m:m)** → investigate

 **Case – Lawyer (m:m)** → include

 **Prison – chef (1:N)** → keeps

 **chef – Prisoner (m:m)** →( **Provides\_meal)**

**Normalization**

**manage**

**Unf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates, Warden ID ,W\_Name,W\_ Rank, W\_phone, Responsibilities

**1nf**

Phone is a multi valued atriibute

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates, Warden ID ,W\_Name,W\_ Rank, W\_phone, Responsibilities

**2nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates
2. Warden ID ,W\_Name,W\_ Rank, W\_phone, Responsibilities

**3nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates
2. Warden ID ,W\_Name,W\_ Rank, W\_phone, Responsibilities

**Table creation**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates
2. Warden ID ,W\_Name,W\_ Rank, W\_phone, Responsibilities **Prison\_ID**

**has**

**Unf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates, Officer ID, 0\_Name,0\_Rank, 0\_Shift\_Timings, Assigned\_Block,O\_phone.

**1nf**

Phone is a multi valued atriibute

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates, Officer ID, 0\_Name,0\_Rank, 0\_Shift\_Timings, Assigned\_Block,O\_phone.

**2nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Officer ID, 0\_Name,0\_Rank, 0\_Shift\_Timings, Assigned\_Block,O\_phone.

**3nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Officer ID, 0\_Name,0\_Rank, 0\_Shift\_Timings, Assigned\_Block,O\_phone,

**Table creation :**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Officer ID, 0\_Name,0\_Rank, 0\_Shift\_Timings, Assigned\_Block,O\_phone, **Prison ID**

**Contain**

**Unf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates, Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History

**1nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,

**2nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,

**3nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,

**Table creation :**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, **Prison ID**

**Asssign**

**Unf**

1. Cell ID, C\_Capacity, Cell\_Type, Security\_LevelPrisoner ID, P\_Name, Age, Gender, Sentence\_Start ,Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History

**1nf**

1. Cell ID, C\_Capacity, Cell\_Type, Security\_Level,Prisoner ID, P\_Name, Age, Gender, Sentence\_Start ,Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History

**2nf**

1. Cell ID, C\_Capacity, Cell\_Type, Security\_Level
2. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start ,Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History

**3nf**

1. Cell ID, C\_Capacity, Cell\_Type, Security\_Level
2. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start ,Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History

**Table creation**

1. Cell ID, C\_Capacity, Cell\_Type, Security\_Level
2. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start ,Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History**, Cell ID**

**Hold**

**Un f**

Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,Cell ID, C\_Capacity, Cell\_Type, Security\_Level

**1nf**

Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_InmatesCell ID, ,C\_Capacity, Cell\_Type, Security\_Level

**2nf**

Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates

Cell ID, C\_Capacity, Cell\_Type, Security\_Level

**3nf**

Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates

Cell ID, C\_Capacity, Cell\_Type, Security\_Level

**Table creation :**

Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates

Cell ID, C\_Capacity, Cell\_Type, Security\_Level, **Prison ID**

**Handle**

**Unf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, Case Manager ID,C\_ Name, Case\_History, Release\_Plan

**1nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, Case Manager ID,C\_ Name, Case\_History, Release\_Plan

**2nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,
2. Case Manager ID,C\_ Name, Case\_History, Release\_Plan

**3nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,
2. Case Manager ID,C\_ Name, Case\_History, Release\_Plan

**Table creation :**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, **Case Manager ID**
2. Case Manager ID,C\_ Name, Case\_History, Release\_Plan

**Have**

**Unf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone

**1nf**

Phone is a multivalued attribute .

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone

2nf

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone

**3nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone

**Table Creation :**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone
3. **Prisoner ID, Lawyer ID**

**Treat**

**Unf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,Medical Worker ID, M\_Name,M\_Role,M\_phone, Medical\_Record(s)

**1nf**

**M\_Phone is multivalued attribute**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,Medical Worker ID, M\_Name,M\_Role,M\_phone, Medical\_Record(s)

**2nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Medical Worker ID, M\_Name,M\_Role,M\_phone, Medical\_Record(s)

**3nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Medical Worker ID, M\_Name,M\_Role,M\_phone, Medical\_Record(s)

**Table creation :**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Medical Worker ID, M\_Name,M\_Role,M\_phone, Medical\_Record(s)
3. **Prisoner ID, Medical Worker ID**

**Visit**

**Unf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,Visitor ID,V\_ Name, Relationship\_to\_Prisoner, Visit\_Date, Approval\_Status

**1nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,Visitor ID,V\_ Name, Relationship\_to\_Prisoner, Visit\_Date, Approval\_Status

**2nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Visitor ID,V\_ Name, Relationship\_to\_Prisoner, Visit\_Date, Approval\_Status

**3nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Visitor ID,V\_ Name, Relationship\_to\_Prisoner, Visit\_Date, Approval\_Status

**Table creation :**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Visitor ID,V\_ Name, Relationship\_to\_Prisoner, Visit\_Date, Approval\_Status

**3. Prisoner ID, Visitor ID**

**involves**

**Unf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**1nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**2nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**3nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**Table creation :**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status
3. **Prisoner ID, Case ID**

**Investigate**

**unf**

1. Police\_ID, PO\_Name,PO\_Rank, Department,PO\_ phone,Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**1nf**

**PO\_Phone is a multivalued attribute .**

1. Police\_ID, PO\_Name,PO\_Rank, Department,PO\_ phone,Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**2nf**

1. Police\_ID, PO\_Name,PO\_Rank, Department,PO\_ phone
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**3nf**

1. Police\_ID, PO\_Name,PO\_Rank, Department,PO\_ phone,
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**Table creation :**

1. Police\_ID, PO\_Name,PO\_Rank, Department,PO\_ phone,
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status
3. **Police\_ID, Case ID**

**Include**

**Unf**

1. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone,Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**1nf**

1. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone,Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**2nf**

1. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**3nf**

1. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status

**Table creation :**

1. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone
2. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status
3. **Lawyer ID, Case ID**

**KEEPS**

**Unf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

**1nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

**2nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

**3nf**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

**Table creation :**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,
2. Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization, **Prison ID**

**Provides\_ meal**

**unf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

**1nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

**2nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,
2. Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

**3nf**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,
2. Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization

**Table creation :**

1. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,
2. Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization
3. **Prisoner ID, Staff ID,**

**Temporary :**

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates
2. Warden ID ,W\_Name,W\_ Rank, W\_phone, Responsibilities **Prison ID**
3. ~~Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,~~
4. Officer ID, 0\_Name,0\_Rank, 0\_Shift\_Timings, Assigned\_Block,O\_phone, **Prison ID**
5. ~~Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,~~
6. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, **Prison ID**
7. Cell ID, C\_Capacity, Cell\_Type, Security\_Level
8. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start ,Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History**, Cell ID**
9. ~~Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates~~
10. Cell ID, C\_Capacity, Cell\_Type, Security\_Level, **Prison ID**
11. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, **Case Manager ID**
12. Case Manager ID,C\_ Name, Case\_History, Release\_Plan
13. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History
14. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone
15. **Prisoner ID, Lawyer ID**
16. ~~Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History~~
17. Medical Worker ID, M\_Name,M\_Role,M\_phone, Medical\_Record(s)
18. **Prisoner ID, Medical Worker ID**
19. ~~Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History~~
20. Visitor ID,V\_ Name, Relationship\_to\_Prisoner, Visit\_Date, Approval\_Status
21. **Prisoner ID, Visitor ID**
22. ~~Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History~~
23. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status
24. **Prisoner ID, Case ID**
25. Police\_ID, PO\_Name,PO\_Rank, Department,PO\_ phone,
26. ~~Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status~~
27. **Police\_ID, Case ID**
28. ~~Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone~~
29. ~~Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status~~
30. **Lawyer ID, Case ID**
31. ~~Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates,~~
32. Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization, **Prison ID**
33. ~~Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History,~~
34. ~~Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone,Ch\_Specialization~~
35. **Prisoner ID, Staff ID,**

Final creation :

1. Prison ID, Prison\_Name, Location, Type, Capacity , Number\_of\_Cells, Total\_Inmates
2. Warden ID ,W\_Name,W\_ Rank, W\_phone1,W\_ phone 2, Responsibilities **Prison ID(FK)**
3. Prisoner ID, P\_Name, Age, Gender, Sentence\_Start Date, Sentence\_End\_Date, Crime\_Type, Status, Medical\_History, **Prison ID(FK) Cell ID(FK), Case Manager ID(FK)**
4. Cell ID, C\_Capacity, Cell\_Type, Security\_Level, **Prison ID(FK)**
5. Case Manager ID,C\_ Name, Case\_History, Release\_Plan
6. Lawyer ID, L\_Name, L\_Specialization, Firm\_Name, L\_phone
7. **Prisoner ID, Lawyer ID**
8. Medical Worker ID, M\_Name,M\_Role,M\_phone1, M\_phone2, Medical\_Record(s)
9. **Prisoner ID, Medical Worker ID**
10. Visitor ID,V\_ Name, Relationship\_to\_Prisoner, Visit\_Date, Approval\_Status
11. **Prisoner ID, Visitor ID**
12. Case ID, Case\_Type, Court\_Date, Outcome, Sentence, Appeal\_Status
13. **Prisoner ID, Case ID**
14. Police\_ID, PO\_Name,PO\_Rank, Department,PO\_ phone1, PO\_ phone2,
15. **Police\_ID, Case ID**
16. **Lawyer ID, Case ID**
17. Staff ID,Ch\_Name,Ch\_Role, Ch\_Shift\_Timings,Ch\_phone1, ,Ch\_phone2,Ch\_Specialization, **Prison ID(FK)**
18. **Prisoner ID, Staff ID,**

**Schema diagram**

**A diagram of a computer

AI-generated content may be incorrect.**

**Create users, assign roles and grant privileges**

CREATE USER noboni IDENTIFIED BY rt23erz;

GRANT UNLIMITED TABLESPACE TO noboni;

CREATE ROLE Prison\_INFO;

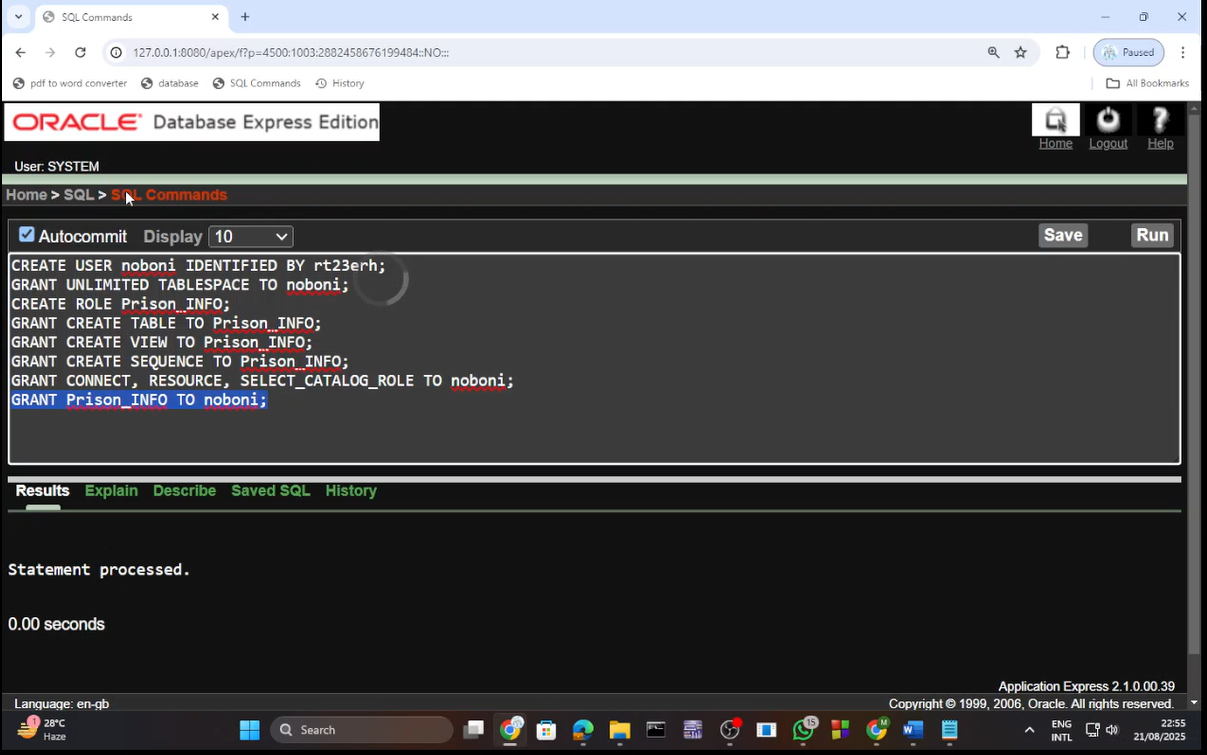
GRANT CREATE TABLE TO Prison\_INFO;

GRANT CREATE VIEW TO Prison\_INFO;

GRANT CREATE SEQUENCE TO Prison\_INFO;

GRANT CONNECT, RESOURCE, SELECT\_CATALOG\_ROLE TO noboni;

GRANT Prison\_INFO TO noboni;



**Table creation code**   
-- 1. Prison

CREATE TABLE Prison (

Prison\_ID INT PRIMARY KEY,

Prison\_Name VARCHAR(100) NOT NULL,

Location VARCHAR(150),

Type VARCHAR(50),

Capacity INT,

Number\_of\_Cells INT,

Total\_Inmates INT

);

-- 2. Warden

CREATE TABLE Warden (

Warden\_ID INT PRIMARY KEY,

W\_Name VARCHAR2(100) NOT NULL,

W\_Rank VARCHAR2(50),

W\_phone1 VARCHAR2(20) NOT NULL,

W\_phone2 VARCHAR2(20),

Responsibilities VARCHAR2(4000),

Prison\_ID INT,

FOREIGN KEY (Prison\_ID) REFERENCES Prison(Prison\_ID)

);

-- 3. Cell

CREATE TABLE Cell (

Cell\_ID INT PRIMARY KEY,

C\_Capacity INT,

Cell\_Type VARCHAR(50),

Security\_Level VARCHAR(50),

Prison\_ID INT,

FOREIGN KEY (Prison\_ID) REFERENCES Prison(Prison\_ID)

);

-- 4. Case Manager

CREATE TABLE Case\_Manager (

Case\_Manager\_ID INT PRIMARY KEY,

C\_Name VARCHAR(100) NOT NULL,

Case\_History VARCHAR(600),

Release\_Plan VARCHAR(600)

);

-- 5. Prisoner

CREATE TABLE Prisoner (

Prisoner\_ID INT PRIMARY KEY,

P\_Name VARCHAR(100) NOT NULL,

Age INT,

Gender VARCHAR(10),

Sentence\_Start\_Date DATE,

Sentence\_End\_Date DATE,

Crime\_Type VARCHAR(100),

Status VARCHAR(50),

Medical\_History VARCHAR(4000),

Prison\_ID INT,

Cell\_ID INT,

Case\_Manager\_ID INT,

FOREIGN KEY (Prison\_ID) REFERENCES Prison(Prison\_ID),

FOREIGN KEY (Cell\_ID) REFERENCES Cell(Cell\_ID),

FOREIGN KEY (Case\_Manager\_ID) REFERENCES Case\_Manager(Case\_Manager\_ID)

);

-- 6. Lawyer

CREATE TABLE Lawyer (

Lawyer\_ID INT PRIMARY KEY,

L\_Name VARCHAR(100) NOT NULL,

L\_Specialization VARCHAR(100),

Firm\_Name VARCHAR(100),

L\_phone VARCHAR(20) NOT NULL

);

-- 7. Prisoner-Lawyer (M:N)

CREATE TABLE Prisoner\_Lawyer (

Prisoner\_ID INT NOT NULL,

Lawyer\_ID INT NOT NULL,

PRIMARY KEY (Prisoner\_ID, Lawyer\_ID),

FOREIGN KEY (Prisoner\_ID) REFERENCES Prisoner(Prisoner\_ID),

FOREIGN KEY (Lawyer\_ID) REFERENCES Lawyer(Lawyer\_ID)

);

-- 8. Medical Worker

CREATE TABLE Medical\_Worker (

Medical\_Worker\_ID INT PRIMARY KEY,

M\_Name VARCHAR(100) NOT NULL,

M\_Role VARCHAR(50),

M\_phone1 VARCHAR(20) NOT NULL,

M\_phone2 VARCHAR(20),

Medical\_Records VARCHAR(4000)

);

-- 9. Prisoner-Medical Worker (M:N)

CREATE TABLE Prisoner\_MedicalWorker (

Prisoner\_ID INT NOT NULL,

Medical\_Worker\_ID INT NOT NULL,

PRIMARY KEY (Prisoner\_ID, Medical\_Worker\_ID),

FOREIGN KEY (Prisoner\_ID) REFERENCES Prisoner(Prisoner\_ID),

FOREIGN KEY (Medical\_Worker\_ID) REFERENCES Medical\_Worker(Medical\_Worker\_ID)

);

-- 10. Visitor

CREATE TABLE Visitor (

Visitor\_ID INT PRIMARY KEY,

V\_Name VARCHAR(100) NOT NULL,

Relationship\_to\_Prisoner VARCHAR(50),

Visit\_Date DATE,

Approval\_Status VARCHAR(50)

);

-- 11. Prisoner-Visitor (M:N)

CREATE TABLE Prisoner\_Visitor (

Prisoner\_ID INT NOT NULL,

Visitor\_ID INT NOT NULL,

PRIMARY KEY (Prisoner\_ID, Visitor\_ID),

FOREIGN KEY (Prisoner\_ID) REFERENCES Prisoner(Prisoner\_ID),

FOREIGN KEY (Visitor\_ID) REFERENCES Visitor(Visitor\_ID)

);

-- 12. Court Case (renamed from CASE)

CREATE TABLE Court\_Case (

Case\_ID INT PRIMARY KEY,

Case\_Type VARCHAR(100),

Court\_Date DATE,

Outcome VARCHAR(100),

Sentence VARCHAR(100),

Appeal\_Status VARCHAR(50)

);

-- 13. Prisoner-Case (M:N)

CREATE TABLE Prisoner\_Case (

Prisoner\_ID INT NOT NULL,

Case\_ID INT NOT NULL,

PRIMARY KEY (Prisoner\_ID, Case\_ID),

FOREIGN KEY (Prisoner\_ID) REFERENCES Prisoner(Prisoner\_ID),

FOREIGN KEY (Case\_ID) REFERENCES Court\_Case(Case\_ID)

);

-- 14. Police

CREATE TABLE Police (

Police\_ID INT PRIMARY KEY,

PO\_Name VARCHAR(100) NOT NULL,

PO\_Rank VARCHAR(50),

Department VARCHAR(100),

PO\_phone1 VARCHAR(20) NOT NULL,

PO\_phone2 VARCHAR(20)

);

-- 15. Police-Case (M:N)

CREATE TABLE Police\_Case (

Police\_ID INT NOT NULL,

Case\_ID INT NOT NULL,

PRIMARY KEY (Police\_ID, Case\_ID),

FOREIGN KEY (Police\_ID) REFERENCES Police(Police\_ID),

FOREIGN KEY (Case\_ID) REFERENCES Court\_Case(Case\_ID)

);

-- 16. Lawyer-Case (M:N)

CREATE TABLE Lawyer\_Case (

Lawyer\_ID INT NOT NULL,

Case\_ID INT NOT NULL,

PRIMARY KEY (Lawyer\_ID, Case\_ID),

FOREIGN KEY (Lawyer\_ID) REFERENCES Lawyer(Lawyer\_ID),

FOREIGN KEY (Case\_ID) REFERENCES Court\_Case(Case\_ID)

);

-- 17. Staff

CREATE TABLE Staff (

Staff\_ID INT PRIMARY KEY,

Ch\_Name VARCHAR(100) NOT NULL,

Ch\_Role VARCHAR(50),

Ch\_Shift\_Timings VARCHAR(50),

Ch\_phone1 VARCHAR(20) NOT NULL,

Ch\_phone2 VARCHAR(20),

Ch\_Specialization VARCHAR(100),

Prison\_ID INT,

FOREIGN KEY (Prison\_ID) REFERENCES Prison(Prison\_ID)

);

-- 18. Prisoner-Staff (M:N)

CREATE TABLE Prisoner\_Staff (

Prisoner\_ID INT NOT NULL,

Staff\_ID INT NOT NULL,

PRIMARY KEY (Prisoner\_ID, Staff\_ID),

FOREIGN KEY (Prisoner\_ID) REFERENCES Prisoner(Prisoner\_ID),

FOREIGN KEY (Staff\_ID) REFERENCES Staff(Staff\_ID)

);