Prison Management System

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Course Name : Introduction to Database

Section : L

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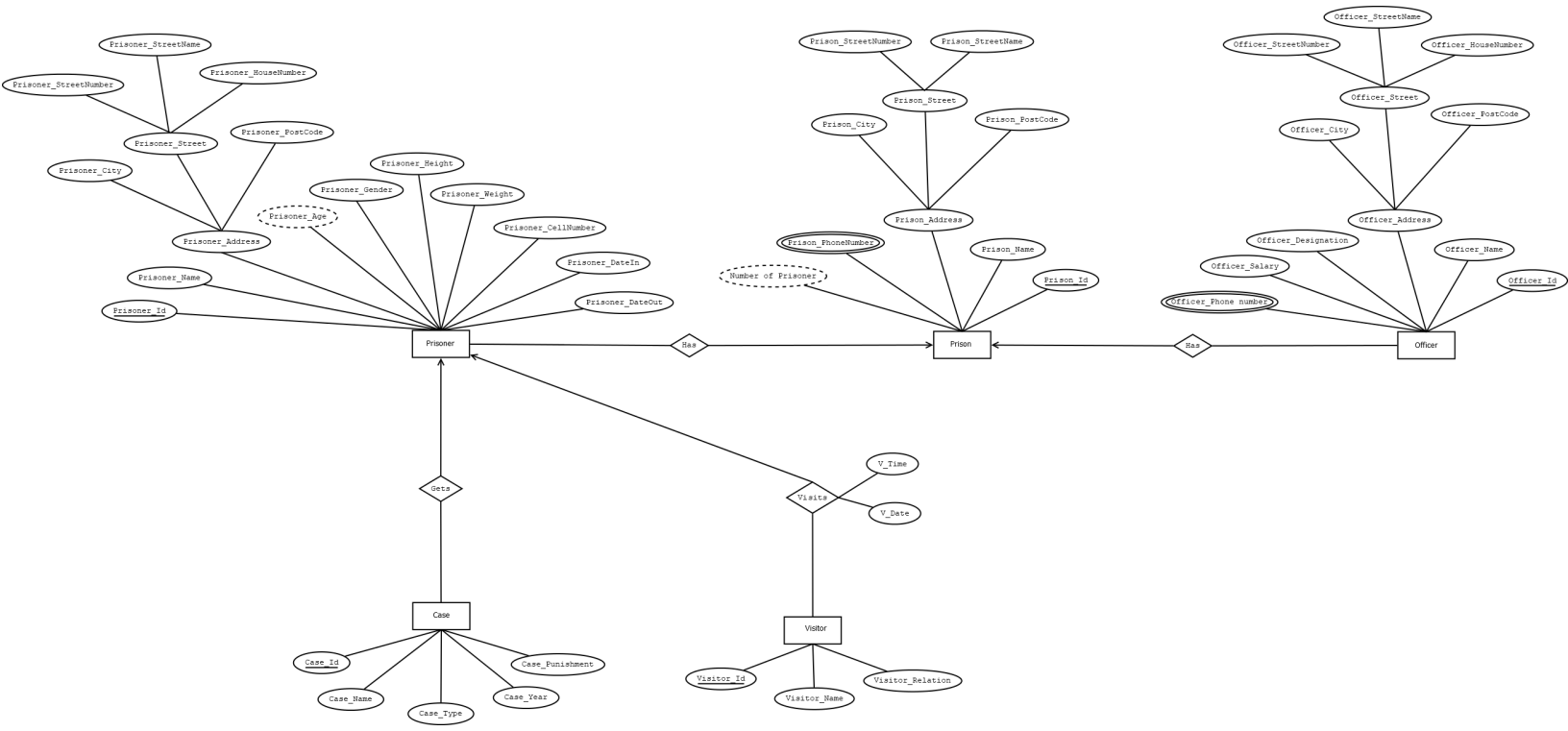
INTRODUCTION

Database is basically a collection of data or information of an organization. A database management system (DBMS) is an application that is used to store, retrieve, and modify users' data. In a database, the data is stored into table. A DBMS helps the user to collect data that is easily accessible in a protected environment. A DBMS helps the user to use the data efficiently. In our project, we are going to discuss about the prison management system. Azkaban prison is a fortress on an island situated in the middle of the North Sea. Nowadays the prison has a large number of prisoners along with many officers to maintain them efficiently. To record their details and supervision we need to use the prison management system. A prison management system keeps the details of prisoners, officers, records of the visitors, and case details of a prisoner. Everything becomes well-organized and time-efficient. With the help of the prison management system, we can record the present data along with the previous data orderly. So, the prison management system is required for users to use the data effectively which can be accessed easily.

SCENERIO DESCRIPTION

In a prison management system, a prison has many prisoners and officers. A prison is identified by a unique prison id. The system also stores prison name, prison address, phone numbers, and the number of prisoners. Prison can have more than one number and number of prisoners can be found by the prison. The prison address is composed of city, street, postcode. Again, the street is composed of street name and street number. An officer can be appointed by a prison. Each officer is identified by their unique id and it also stores officer name, address, designation, salary, and phone number. The officer can have more than one number. The officer address is composed of city, street, postcode. Again, the street is composed of street number, street name, and house number. A prison has every prisoner detail and they have individual id to recognize them. It also stores prisoner name, address, age, gender, height, weight, cell number, date in, and date out. The prisoner's age can be found by his date of birth. The prisoner's address is composed of city, street, postcode. Again, the street is composed of street number, street name, and house number. A prisoner gets many cases and every one of the cases has a unique id. The system also stores case name, type, year, and punishment. A visitor can visit a prisoner. Each visitor has a unique id. It also stores visitor name, prisoner id, relationship with prisoner. While visiting the prisoner, the date and time will also be stored.

ER-Diagram


Prisoner_StreetName
Prisoner_HouseNumber
Prisoner_StreetNumber
Prisoner_Street
Prisoner_PostCode
Prisoner_City
Prisoner_Height
Prisoner_Gender
Prisoner_Weight
Prisoner_Age
Prisoner_CellNumber
Prisoner_Address
Prisoner_DateIn
Prisoner_Name
Prisoner_DateOut
Prisoner_Id
Prisoner
Has
Prison_StreetNumber
Prison_StreetName
Prison_Street
Prison_City
Prison_PostCode
Prison_Address
Prison_PhoneNumber
Prison_Name
Number of Prisoner
Prison_Id
Prison
Has
Officer_StreetName
Officer_StreetNumber
Officer_HouseNumber
Officer_Street
Officer_PostCode
Officer_City
Officer_Address
Officer_Designation
Officer_Name
Officer_Salary
Officer_Id
Officer_Phone number
Officer
Gets
Visits
V_Time
V_Date
Case
Case_Id
Case_Name
Case_Type
Case_Year
Case_Punishment
Visitor
Visitor_Id
Visitor_Name
Visitor_Relation

Normalization

Has

UNF

Has (Prison_Id, Prison_Name, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber, Prison_PhoneNumber, Officer_Id, Officer_Name, Officer_PostCode, Officer_City, Officer_HouseNumber, Officer_StreetName, Officer_StreetNumber, Officer_Designation, Officer_salary, Officer_PhoneNumber).

1NF

Prison_PhoneNumber and Officer_PhoneNumber are multivalued attribute.

1.Prison_Id, Prison_Name, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber, Prison_PhoneNumber, Officer_Id, Officer_Name, Officer_PostCode, Officer_City, Officer_HouseNumber, Officer_StreetName, Officer_StreetNumber, Officer_Designation, Officer_salary, Officer_PhoneNumber.

2NF

1.Prison_Id, Prison_Name, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber, Prison_PhoneNumber.

2.Officer_Id, Officer_Name, Officer_PostCode, Officer_City, Officer_HouseNumber, Officer_StreetName, Officer_StreetNumber, Officer_Designation, Officer_salary, Officer_PhoneNumber.

3NF

1. Prison_Id, Prison_Name, Prison_PhoneNumber.

2. Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber.

3. Officer_Id, Officer_Name, Officer_Designation, Officer_salary, Officer_Phone number.

4. Officer_PostCode, Officer_City, Officer_HouseNumber, Officer_StreetName, Officer_StreetNumber.

Table Creation

1. Prison_Id, Prison_Name, Prison_PhoneNumber.

2. P_Id, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber.

3.Prison_Id, Officer_Id, Officer_Name, Officer_Designation, Officer_salary, Officer_PhoneNumber.

4. O_Id, Officer_PostCode, Officer_City, Officer_HouseNumber, Officer_StreetName, Officer_StreetNumber.

Has

UNF

Has (Prison_Id, Prison_Name, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber, Prison_PhoneNumber, Prisoner_Id, Prisoner_Name, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut).

1NF

Prison_PhoneNumber is a multivalued attribute.

1.Prison_Id, Prison_Name, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber, Prison_PhoneNumber, Prisoner_Id, Prisoner_Name,

Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber ,Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

2NF

1.Prison_Id, Prison_Name, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber, Prison_PhoneNumber.

2.Prisoner_Id, Prisoner_Name, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

3NF

1. Prison_Id, Prison_Name, Prison_PhoneNumber.

2. Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber.

3.Prisoner_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

4.Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber.

Table Creation

1.Prison_Id, Prison_Name, Prison_PhoneNumber.

2.P_Id, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber.

3.Prisoner_Id, Prison_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

4.Pri_Id, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber.

GETS

UNF

1.Gets(Prisoner_Id, Prisoner_Name, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut, Case_Id, Case_Name, Case_Type, Case_Year, Case_Punishment)

1NF

There is no multivalued attribute. Relation already in 1NF.

1.Prisoner_Id, Prisoner_Name, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut, Case_Id, Case_Name, Case_Type, Case_Year, Case_Punishment.

2NF

1.Prisoner_Id, Prisoner_Name, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

2. Case_Id, Case_Name, Case_Type, Case_Year, Case_Punishment.

3NF

1.Prisoner_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

2.Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber.

3. Case_Id, Case_Name, Case_Type, Case_Year, Case_Punishment

Table Creation

1.Prisoner_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

2.Pri_Id, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber.

3. Case_Id, Prisoner_Id, Case_Name, Case_Type, Case_Year, Case_Punishment.

Visits

UNF

Visits (Prisoner_Id, Prisoner_Name, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut, V_Time, V_Date, Visitor_Id, Visitor_Name, Visitor_Relation).

1NF

There is no multivalued attribute. Relation already in 1NF.

1.Prisoner_Id, Prisoner_Name, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut, V_Time, V_Date, Visitor_Id, Visitor_Name, Visitor_Relation.

2NF

1.Prisoner_Id, Prisoner_Name, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

2.Visitor_Id, Visitor_Name, Visitor_Relation.

3. V_Time, V_Date

3NF

1.Prisoner_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

2.Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber.

3.Visitor_Id, Visitor_Name, Visitor_Relation.

4. V_Time, V_Date

Table Creation

1.Prisoner_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

2.Pri_Id, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber.

3. Prisoner_Id ,Visitor_Id, Visitor_Name, Visitor_Relation.

4. Prisoner_Id, Visitor_Id, V_Time, V_ Date.

Temporary Table

1. Prison_Id, Prison_Name, Prison_PhoneNumber.

2. P_Id, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber.

3.Prison_Id, Officer_Id, Officer_Name, Officer_Designation, Officer_salary, Officer_PhoneNumber.

4.O_Id, Officer_PostCode, Officer_City, Officer_HouseNumber, Officer_StreetName, Officer_StreetNumber.

5.~~Prison_Id, Prison_Name, Prison_PhoneNumber.~~

6.~~P_Id, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber~~.

7.Prisoner_Id, Prison_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

8.Pri_Id, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber Prisoner_StreetName, Prisoner_StreetNumber.

9.~~Prisoner_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.~~

10.~~Pri_Id, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber Prisoner_StreetName, Prisoner_StreetNumber.~~

11. Case_Id, Prisoner_Id, Case_Name, Case_Type, Case_Year, Case_Punishment.

12.~~Prisoner_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.~~

13.~~Pri_Id, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber ,Prisoner_StreetName, Prisoner_StreetNumber.~~

14. Prisoner_Id, Visitor_Id, Visitor_Name, Visitor_Relation.

15. Prisoner_Id, Visitor_Id, V_Time, V_Date.

Final Table

1. Prison_Id, Prison_Name, Prison_PhoneNumber1, Prison_PhoneNumber2.

2. P_Id, Prison_PostCode, Prison_City, Prison_StreetName, Prison_StreetNumber.

3.Prison_Id, Officer_Id, Officer_Name, Officer_Designation, Officer_salary, Officer_PhoneNumber1, Officer_PhoneNumber2.

4.O_Id, Officer_PostCode, Officer_City, Officer_HouseNumber, Officer_StreetName, Officer_StreetNumber.

5.Prisoner_Id, Prison_Id, Prisoner_Name, Prisoner_Gender, Prisoner_Height, Prisoner_Weight, Prisoner_CellNumber, Prisoner_DateIn, Prisoner_DateOut.

6.Pri_Id, Prisoner_PostCode, Prisoner_City, Prisoner_HouseNumber, Prisoner_StreetName, Prisoner_StreetNumber.

7. Case_Id, Prisoner_Id, Case_Name, Case_Type, Case_Year, Case_Punishment.

8. Prisoner_Id, Visitor_Id, Visitor_Name, Visitor_Relation.

9. Prisoner_Id, Visitor_Id, V_Time, V_Date.

Schema Diagram

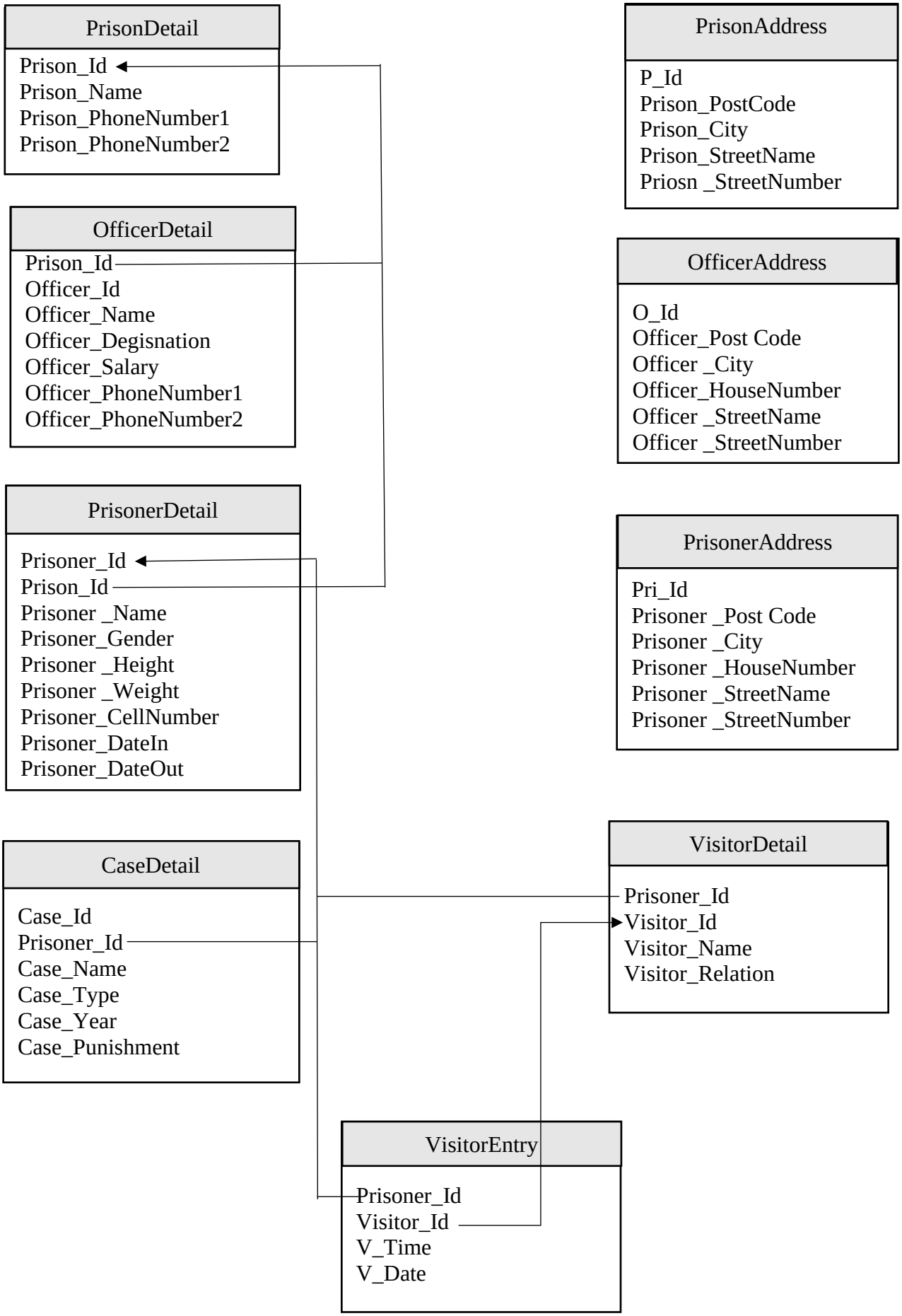


Table Creation

create table PrisonDetail(Prison_Id number(10)primary key,Prison_Name varchar2(20),Prison_PhoneNumber1 number(20),Prison_PhoneNumber2 number(20));

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PRISONDETAIL	PRISON_ID	Number	-	10	0	1	-	-	-
	PRISON_NAME	Varchar2	20	-	-	-	✓	-	-
	PRISON_PHONENUMBER1	Number	-	20	0	-	✓	-	-
	PRISON_PHONENUMBER2	Number	-	20	0	-	✓	-	-
									1 - 4

create table PrisonAddress(P_Id number(10)primary key, Prison_PostCode number(10), Prison_City varchar2(20), Prison_StreetName varchar2(20), Prison_StreetNumber number(10));

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PRISONADDRESS	P_ID	Number	-	10	0	1	-	-	-
	PRISON_POSTCODE	Number	-	10	0	-	✓	-	-
	PRISON_CITY	Varchar2	20	-	-	-	✓	-	-
	PRISON_STREETNAME	Varchar2	20	-	-	-	✓	-	-
	PRISON_STREETNUMBER	Number	-	10	0	-	✓	-	-
									1 - 5

create table OfficerDetail(Prison_Id number(10), Officer_Id number(10)primary key, Officer_Name varchar2(20), Officer_Designation varchar2(20), Officer_salary number(20), Officer_PhoneNumber1 number(20),Officer_PhoneNumber2 number(20));

alter table OfficerDetail add constraint fk1 foreign key (Prison_Id) references PrisonDetail (Prison_Id);

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
OFFICERDETAIL	PRISON_ID	Number	-	10	0	-	✓	-	-
	OFFICER_ID	Number	-	10	0	1	-	-	-
	OFFICER_NAME	Varchar2	20	-	-	-	✓	-	-
	OFFICER_DESIGNATION	Varchar2	20	-	-	-	✓	-	-
	OFFICER_SALARY	Number	-	20	0	-	✓	-	-
	OFFICER_PHONENUMBER1	Number	-	20	0	-	✓	-	-
	OFFICER_PHONENUMBER2	Number	-	20	0	-	✓	-	-
									1 - 7

create table OfficerAddress(O_Id number(10)primary key, Officer_PostCode number(10), Officer_City varchar2(20), Officer_HouseNumber number(20), Officer_StreetName varchar2(20), Officer_StreetNumber number(20));

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
OFFICERADDRESS	O_ID	Number	-	10	0	1	-	-	-
	OFFICER_POSTCODE	Number	-	10	0	-	✓	-	-
	OFFICER_CITY	Varchar2	20	-	-	-	✓	-	-
	OFFICER_HOUSENUMBER	Number	-	20	0	-	✓	-	-
	OFFICER_STREETNAME	Varchar2	20	-	-	-	✓	-	-
	OFFICER_STREETNUMBER	Number	-	20	0	-	✓	-	-
									1 - 6

create table PrisonerDetail(Prisoner_Id number(10)primary key, Prison_Id number(10), Prisoner_Name varchar2(20), Prisoner_Gender varchar2(10), Prisoner_Height number(5,2), Prisoner_Weight number(5,2), Prisoner_CellNumber number(4), Prisoner_DateIn date, Prisoner_DateOut date);

alter table PrisonerDetail add constraint fk2 foreign key (Prison_Id) references PrisonDetail (Prison_Id);

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PRISONERDETAIL	PRISONER_ID	Number	-	10	0	1	-	-	-
	PRISON_ID	Number	-	10	0	-	✓	-	-
	PRISONER_NAME	Varchar2	20	-	-	-	✓	-	-
	PRISONER_GENDER	Varchar2	10	-	-	-	✓	-	-
	PRISONER_HEIGHT	Number	-	5	2	-	✓	-	-
	PRISONER_WEIGHT	Number	-	5	2	-	✓	-	-
	PRISONER_CELLNUMBER	Number	-	4	0	-	✓	-	-
	PRISONER_DATEIN	Date	7	-	-	-	✓	-	-
	PRISONER_DATEOUT	Date	7	-	-	-	✓	-	-

1 - 9

create table PrisonerAddress(Pri_Id number(10)primary key, Prisoner_PostCode number(10), Prisoner_City varchar2(20), Prisoner_HouseNumber number(20), Prisoner_StreetName varchar2(20), Prisoner_StreetNumber number(20));

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PRISONERADDRESS	PRI_ID	Number	-	10	0	1	-	-	-
	PRISONER_POSTCODE	Number	-	10	0	-	✓	-	-
	PRISONER_CITY	Varchar2	20	-	-	-	✓	-	-
	PRISONER_HOUSENUMBER	Number	-	20	0	-	✓	-	-
	PRISONER_STREETNAME	Varchar2	20	-	-	-	✓	-	-
	PRISONER_STREETNUMBER	Number	-	20	0	-	✓	-	-

1 - 6

create table CaseDetail(Case_Id number(10)primary key, Prisoner_Id number(10), Case_Name varchar2(40), Case_Type varchar2(20), Case_Year number(4), Case_Punishment varchar2(40));

alter table CaseDetail add constraint fk3 foreign key (Prisoner_Id) references PrisonerDetail (Prisoner_Id);

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CASEDETAIL	CASE_ID	Number	-	10	0	1	-	-	-
	PRISONER_ID	Number	-	10	0	-	✓	-	-
	CASE_NAME	Varchar2	40	-	-	-	✓	-	-
	CASE_TYPE	Varchar2	20	-	-	-	✓	-	-
	CASE_YEAR	Number	-	4	0	-	✓	-	-
	CASE_PUNISHMENT	Varchar2	40	-	-	-	✓	-	-
									1 - 6

create table VisitorDetail(Visitor_Id number(10)primary key, Prisoner_Id number(10), Visitor_Name varchar2(20), Visitor_Relation varchar2(20));

alter table VisitorDetail add constraint fk4 foreign key (Prisoner_Id) references PrisonerDetail (Prisoner_Id);

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
VISITORDETAIL	VISITOR_ID	Number	-	10	0	1	-	-	-
	PRISONER_ID	Number	-	10	0	-	✓	-	-
	VISITOR_NAME	Varchar2	20	-	-	-	✓	-	-
	VISITOR_RELATION	Varchar2	20	-	-	-	✓	-	-
									1 - 4

create table VisitorEntry(Prisoner_Id number(10), Visitor_Id number(10), V_Time number(5,2), V_Date date , primary key(Prisoner_Id,Visitor_Id));

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
VISITORENTRY	PRISONER_ID	Number	-	10	0	1	-	-	-
	VISITOR_ID	Number	-	10	0	2	-	-	-
	V_TIME	Number	-	5	2	-	✓	-	-
	V_DATE	Date	7	-	-	-	✓	-	-
									1 - 4

Sequence

create sequence PrisonDetailSequence

increment by 1

start with 1

maxvalue 10

nocache

nocycle;

create sequence PrisonerAddressSequence

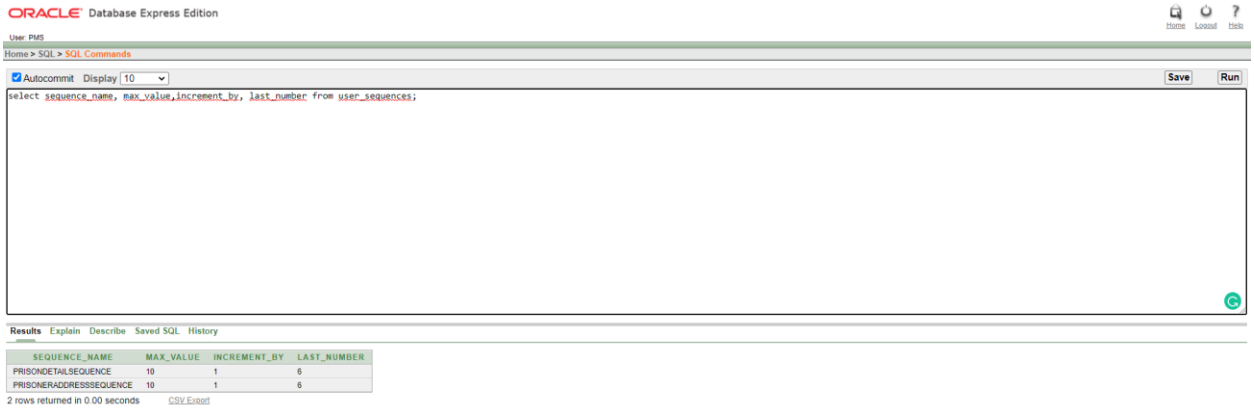
increment by 1

start with 1

maxvalue 10

nocache

nocycle;



Create users, assign roles and grant privileges

login as System

Create user PMS identified by TapuFarhan;

Grant unlimited tablespace to PMS;

Grant create session,create role,create table,create sequence,create view,create procedure,connect, resource to PMS with admin option;

login as PMS

Create Role Admin;

Grant create session,create role,create table,create sequence,create view,create procedure,connect, resource to Admin with admin option;

Create user PM identified by password;

Grant unlimited tablespace to PM;

Grant Admin to PM;

Data Insertion

1.insert into PrisonDetail values(PrisonDetailSequence.nextval,'Hanoi Hilton','01234567891','01234567892');

2.insert into PrisonDetail values(PrisonDetailSequence.nextval,'Elmina Castle','01234567893','01234567894');

3.insert into PrisonDetail values(PrisonDetailSequence.nextval,'Robben Island','01234567895','01234567896');

4.insert into PrisonDetail values(PrisonDetailSequence.nextval,'Goree Island','01234567897','01234567898');

5.insert into PrisonDetail values(PrisonDetailSequence.nextval,'Alcatraz','01234567899','01234567999');

PRISON_ID	PRISON_NAME	PRISON_PHONENUMBER1	PRISON_PHONENUMBER2
1	Hanoi Hilton	1234567891	1234567892
2	Elmina Castle	1234567893	1234567894
3	Robben Island	1234567895	1234567896
4	Goree Island	1234567897	1234567898
5	Alcatraz	1234567899	1234567999

1.insert into PrisonAddress values(PrisonerAddressSequence.nextval,'111111','Chicago','V.E Road','11');

2.insert into PrisonAddress values(PrisonerAddressSequence.nextval,'222222','San Francisco','G.A Road','22');

3.insert into PrisonAddress values(PrisonerAddressSequence.nextval,'333333','New York','S.A Road','33');

4.insert into PrisonAddress values(PrisonerAddressSequence.nextval,'444444','Seattle','S.N Road','44');

5.insert into PrisonAddress values(PrisonerAddressSequence.nextval,'555555','San Diego','U.A Road','55');

P_ID	PRISON_POSTCODE	PRISON_CITY	PRISON_STREETNAME	PRISON_STREETNUMBER
1	111111	Chicago	V.E Road	11
2	222222	San Francisco	G.A Road	22
3	333333	New York	S.A Road	33
4	444444	Seattle	S.N Road	44
5	555555	San Diego	U.A Road	55

1.insert into OfficerDetail
values('1','1','Farhan','D.I.G','70000','01999999999','01999999998');

2.insert into OfficerDetail
values('2','2','Sadik','D.I.G','70000','01999999997','01999999996');

3.insert into OfficerDetail
values('3','3','Ferdous','D.I.G','70000','01999999995','01999999994');

4.insert into OfficerDetail
values('4','4','Tapu','D.I.G','70000','01999999993','01999999992');

5.insert into OfficerDetail
values('5','5','Biswas','D.I.G','70000','01999999991','01999999990');

PRISON_ID	OFFICER_ID	OFFICER_NAME	OFFICER_DESIGNATION	OFFICER_SALARY	OFFICER_PHONENUMBER1	OFFICER_PHONENUMBER2
1	1	Farhan	D.I.G	70000	1999999999	1999999998
2	2	Sadik	D.I.G	70000	1999999997	1999999996
3	3	Ferdous	D.I.G	70000	1999999995	1999999994
4	4	Tapu	D.I.G	70000	1999999993	1999999992
5	5	Biswas	D.I.G	70000	1999999991	1999999990

1.insert into OfficerAddress values('1','66666','Philadelphia','10','T.O Road','66');

2.insert into OfficerAddress values('2','77777','New York','20','N.Y Road','77');

3.insert into OfficerAddress values('3','88888','Austin','30','L.O Road','88');

4.insert into OfficerAddress values('4','99999','New Orleans','40','B.L Road','99');

5.insert into OfficerAddress values('5','67899','Dallas','50','C.T Road','67');

O_ID	OFFICER_POSTCODE	OFFICER_CITY	OFFICER_HOUSENUMBER	OFFICER_STREETNAME	OFFICER_STREETNUMBER
1	66666	Philadelphia	10	T.O Road	66
2	77777	New York	20	N.Y Road	77
3	88888	Austin	30	L.O Road	88
4	99999	New Orleans	40	B.L Road	99
5	67899	Dallas	50	C.T Road	67

1.insert into PrisonerDetail values('1','1','Albert Fish','Male','6.2','70.5','00001',to_date('17-12-1980','dd-mm-yyyy'),to_date('17-12-2021','dd-mm-yyyy'));

2.insert into PrisonerDetail values('2','2','Samuel Little','Male','5.11','80.5','00002',to_date('12-10-1960','dd-mm-yyyy'),to_date('17-12-1991','dd-mm-yyyy'));

3.insert into PrisonerDetail values('3','3','Harold Shipman','Male','5.10','90.5','00003',to_date('16-8-1970','dd-mm-yyyy'),to_date('17-12-2004','dd-mm-yyyy'));

4.insert into PrisonerDetail values('4','4','Miyuki Ishikawa','Female','6.0','100.5','00004',to_date('11-6-1990','dd-mm-yyyy'),to_date('17-12-2051','dd-mm-yyyy'));

5.insert into PrisonerDetail values('5','5','Amelia Dyer','Female','5.9','95.5','00005',to_date('19-4-2000','dd-mm-yyyy'),to_date('17-12-2050','dd-mm-yyyy'));

PRISONER_ID	PRISON_ID	PRISONER_NAME	PRISONER_GENDER	PRISONER_HEIGHT	PRISONER_WEIGHT	PRISONER_CELLNUMBER	PRISONER_DATEIN	PRISONER_DATEOUT
1	1	Albert Fish	Male	6.2	70.5	1	17-DEC-80	17-DEC-21
2	2	Samuel Little	Male	5.11	80.5	2	12-OCT-60	17-DEC-91
3	3	Harold Shipman	Male	5.1	90.5	3	16-AUG-70	17-DEC-04
4	4	Miyuki Ishikawa	Female	6	100.5	4	11-JUN-90	17-DEC-51
5	5	Amelia Dyer	Female	5.9	95.5	5	19-APR-00	17-DEC-50

1.insert into PrisonerAddress values('1','11223','New York','40','N.Y Road','6');

2.insert into PrisonerAddress values('2','44556','Miami','50','M.I Road','7');

3.insert into PrisonerAddress values('3','77889','Las Vegas','60','L.V Road','8');

4.insert into PrisonerAddress values('4','22334','Washington D.C','70','W.N Road','9');

5.insert into PrisonerAddress values('5','55667','Boston','80','B.T Road','10');

PRI_ID	PRISONER_POSTCODE	PRISONER_CITY	PRISONER_HOUSENUMBER	PRISONER_STREETNAME	PRISONER_STREETNUMBER
1	11223	New York	40	N.Y Road	6
2	44556	Miami	50	M.I Road	7
3	77889	Las Vegas	60	L.V Road	8
4	22334	Washington D.C	70	W.N Road	9
5	55667	Boston	80	B.T Road	10

1.insert into CaseDetail values('1','1','Kidnapping of Bill Gates','Kidnapping','1975','Sentence 40 year of jail');

2.insert into CaseDetail values('2','2','Kidnapping of Warrent Buffet','Kidnapping','1958','Sentence 30 year of jail');

3.insert into CaseDetail values('3','3','Attempt to murder Elon Musk','Attempt to murder','1969','Sentence 34 year of jail');

4.insert into CaseDetail values('4','4','Murder of Jeff Bezos','Murder','1989','Sentence to death');

5.insert into CaseDetail values('5','5','Murder of Mark Zuckerberg','Murder','1999','Sentence to death');

CASE_ID	PRISONER_ID	CASE_NAME	CASE_TYPE	CASE_YEAR	CASE_PUNISHMENT
1	1	Kidnapping of Bill Gates	Kidnapping	1975	Sentence 40 year of jail
2	2	Kidnapping of Warrent Buffet	Kidnapping	1958	Sentence 30 year of jail
3	3	Attempt to murder Elon Musk	Attempt to murder	1969	Sentence 34 year of jail
4	4	Murder of Jeff Bezos	Murder	1989	Sentence to death
5	5	Murder of Mark Zuckerberg	Murder	1999	Sentence to death

1.insert into VisitorDetail values('1','1','Marrie Fish','Wife');

2.insert into VisitorDetail values('2','2','Sofia Little','Sister');

3.insert into VisitorDetail values('3','3','Nickolas Shipman','Brother');

4.insert into VisitorDetail values('4','4','Damon Ishikawa','Father');

5.insert into VisitorDetail values('5','5','Freya Dyer','Mother');

VISITOR_ID	PRISONER_ID	VISITOR_NAME	VISITOR_RELATION
1	1	Marrie Fish	Wife
2	2	Sofia Little	Sister
3	3	Nickolas Shipman	Brother
4	4	Damon Ishikawa	Father
5	5	Freya Dyer	Mother

1.insert into VisitorEntry values ('1','1','11.20',to_date('19-12-1990','dd-mm-yyyy'));

2.insert into VisitorEntry values ('2','2','12.30',to_date('17-8-1970','dd-mm-yyyy'));

3.insert into VisitorEntry values ('3','3','1.28',to_date('21-1-1999','dd-mm-yyyy'));

4.insert into VisitorEntry values ('4','4','3.48',to_date('7-3-2020','dd-mm-yyyy'));

5.insert into VisitorEntry values ('5','5','9.40',to_date('28-5-2020','dd-mm-yyyy'));

PRISONER_ID	VISITOR_ID	V_TIME	V_DATE
1	1	11.2	19-DEC-90
2	2	12.3	17-AUG-70
3	3	1.28	21-JAN-99
4	4	3.48	07-MAR-20
5	5	9.4	28-MAY-20

Query Writing

Subquery

1.Display the prisoner names and prisoner weight whose weight is less than Harold Shipman?

select Prisoner_Name,Prisoner_Gender from PrisonerDetail where Prisoner_Weight < (select Prisoner_Weight from PrisonerDetail where Prisoner_Name='Harold Shipman');

PRISONER_NAME	PRISONER_GENDER
Albert Fish	Male
Samuel Little	Male

2.Display the officer names and Officer designation who are earning same salary as Biswas?

select Officer_Name,Officer_designation from OfficerDetail where Officer_Salary = (select Officer_Salary from OfficerDetail where OFFICER_NAME='Biswas');

OFFICER_NAME	OFFICER_DESIGNATION
Farhan	D.I.G
Sadik	D.I.G
Ferdous	D.I.G
Tapu	D.I.G
Biswas	D.I.G

View

1. Create a view called PrisonerDetailView based on the Prisoner_Id, Prisoner_Name, and Prisoner_CellNumber from the PrisonerDetail table.

Create view PrisonerDetailView as select Prisoner_ID,Prisoner_Name,Prisoner_CellNumber from PrisonerDetail;

PRISONER_ID	PRISONER_NAME	PRISONER_CELLNUMBER
1	Albert Fish	1
2	Samuel Little	2
3	Harold Shipman	3
4	Miyuki Ishikawa	4
5	Amelia Dyer	5

2. Create a view called OfficerDetailView based on the Officer_Id, Officer_Name, and Officer_Salary from the OfficerDetail table.

Create view OfficerDetailView as select Officer_Id,Officer_Name,Officer_Salary from OfficerDetail;

OFFICER_ID	OFFICER_NAME	OFFICER_SALARY
1	Farhan	70000
2	Sadik	70000
3	Ferdous	70000
4	Tapu	70000
5	Biswas	70000

Joining

1.Display the prisoner Id and visitor names of only those prisoners whose case id is greater than 3.

select c.Prisoner_Id, v.Visitor_Name from CaseDetail c, VisitorDetail v where c.Prisoner_Id=v.Prisoner_Id and c.Case_Id > 3;

PRISONER_ID	VISITOR_NAME
4	Damon Ishikawa
5	Freya Dyer

2.Write a query to display the officer name, prison name for all officer.

select o.Officer_Name, p.Prison_Name from OfficerDetail o,PrisonDetail p where o.Prison_Id=p.Prison_Id;

OFFICER_NAME	PRISON_NAME
Farhan	Hanoi Hilton
Sadik	Elmina Castle
Ferdous	Robben Island
Tapu	Goree Island
Biswas	Alcatraz

Relational Algebra

1.Find the Prison Id and Prison name from the PrisonDetail.

$$\prod_{Prison\_Id,Prison\_Name}(PrisonDetail)$$

2. Find the street name where city is Chicago.

$$\prod_{Prison\_StreetName}(\sigma_{Prison\_City = \text{“Chicago”}}(PrisonAddress))$$

3. Find the officer name where salary is 70000.

$$\prod_{Officer\_Name}(\sigma_{Officer\_Salary=\text{“70000”}}(Officer\_Detail))$$

4. Find the visitor name where visitor relation is Wife.

$$\prod_{Visitor\_Name}(\sigma_{Visitor\_Relationship=\text{“Wife”}}(VisitorDetail))$$

5. Find the prisoner name whose weight is greater than 80 kg.

$$\prod_{Prisoner\_Name}(\sigma_{Prisoner\_Weight > 80}(PrisonerDetail))$$

Conclusion

Database Management System is a software that analyses and store data to use it later according to our requirement. Our project is about Prison Management System where we stored about prison, prisoner, officer, visitor and case details. In our database we can also retrieve and modify data. In future we can add biometric and Artificial intelligent in the system and organize it professionally. We can capitalize the cache and use virtualizing technology in our project. We can add more memory to minimize the time of process. We can also improve the network system to work more efficiently.