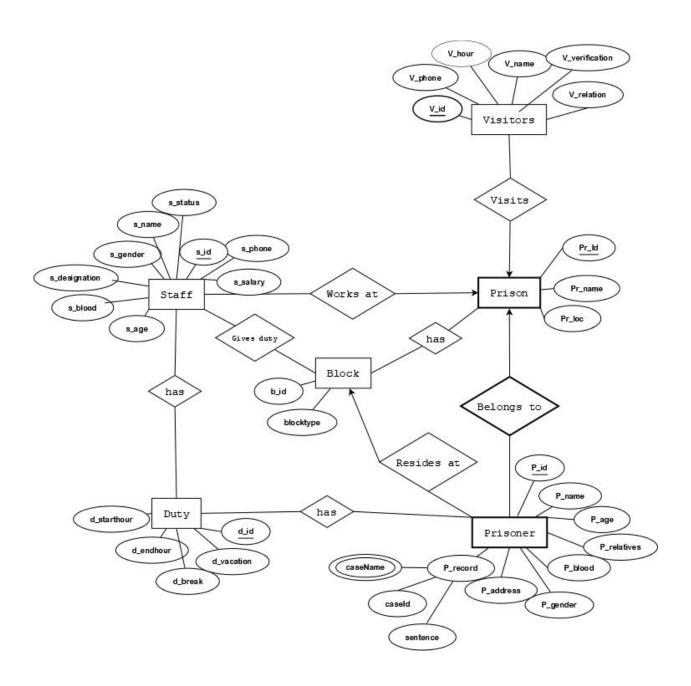
Prison Management System

Group no:04

Name	ID
1.Parvin,Monowara	19-39578-1
2,Tahiat,Maisha	19-39581-1
3.Raisha,Tasnuba Kader	19-39616-1
4.Rahman,MD,Asifur	19-39618-1
5.Seaim,Tanzimul Haque	19-41676-3

Scenario

In our prison management system,many prisoners belong to one prison. A prisoner is identified by his or her prisoner id(P_id). The system is also store name, age, blood group, address, gender, relatives and record. A prisoner record(P_record) is also stores case ID, case name and sentence. Case name is multivalued attribute. The prison is identified by id(Pr_id), name(Pr_name) and location (Pr_loc). Many prisons have many blocks. Inside the prison many prisoners reside in one block. Block has type(blocktype) and unique property of block id(b_id). A prison also has many staffs working in it. The staff is also identified by its(s_id). The system also stores like age, gender, blood, designation, phone, salary, status. Many staff gives duty in many blocks. The staff and prisoner both have duties inside the prison. Many staff and many prisoners have many duties. The duty holds information like id(d_id), start hour, end hour, break and vacation. Many visitors may visit one prison. The visitors have an id(V_id) and the system stores information such as name, verification, hours of visit, phone number and relationship with the prisoner.



NORMALIZATION

Staff works prison(Many to one)

<u>UnnormalizedForm(UNF):</u>

S id, s_age, s_status, s_blood, s_gender, s_designation, s_phone, s_name, s_salary, pr id,

Pr_loc, Pr_name.

1NF(1st Normalized Form):

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

S id ,pr id,s_age, s_status, s_blood, s_gender, s_designation, s_phone,s_name,s_salary,pr_loc,pr_name

2NF(2nd Normalized Form):

1st:s id,s_age, s_status,s_blood,s_gender, s_designation, s_phone,s_name,s_salary.

2nd:pr id,pr_loc,pr_name.

3NF(3rd Normalized Form):

There is no transitive dependency. Relation already in <u>3NF</u>.

1st:s id,s_age,s_status,s_blood,s_gender,s_designation,
s_phone,s_name,s_salary,pr_id.

2nd:pr_id,pr_loc,pr_name.

<u>Visitors visit Prison(Many to one)</u>

<u>UnnormalizedForm(UNF):</u>

<u>V id</u>,v_relation,v_verification,v_hour,v_phone,v_name, <u>pr id</u>,pr_loc,pr_name.

1NF(1st Normalized Form):

There is no multivalued attribute. Relation already in <u>1NF</u>.

<u>V id,pr id</u>,v_relation,v_verification,v_hour,v_phone, v_name,pr_loc,pr_name.

2NF(2nd Normalized Form):

1st:v id,v_relation,v_verification,v_hour,v_phone,v_nam e.

2nd:pr id, pr_loc,pr_name.

3NF(3rd Normalized Form):

There is no transitive dependency. Relation already in <u>3NF</u>.

1st:v_id,v_relation,v_verification,v_hour,v_phone, v_name,**pr_id**.

2nd:pr_id,pr_loc,pr_name.

Prison has Block(Many to Many)

<u>UnnormalizedForm(UNF):</u>

<u>B</u> id,blocktype,<u>pr</u> id,pr_loc,pr_name.

1NF(1st Normalized Form):

There is no multivalued attribute. Relation already in <u>1NF</u>.

<u>B</u> id,pr id,blocktype,pr_loc,pr_name.

2NF(2nd Normalized Form):

1st:b id,blocktype

2nd:pr_id,pr_loc,pr_name.

3NF(3rd Normalized Form):

There is no transitive dependency. Relation already in <u>3NF.</u>

1st:<u>b</u> id,blocktype.

2nd:pr id,pr_loc,pr_name

3rd:b_id,pr_id

Prisoner belongs to Prison(Many to One)

Unnormalized From(UNF):p_id,

p_name,p_relatives,p_blood,p_gender,p_address,casena me,sentence,pr_id,pr_loc,pr_name.

1NF(1st Normalized Form):

Casename is multivalued attribute.

<u>P id,casename,pr id,p_name,p_age,p_blood,p_genderp_relatives,p_addess,caseId,sentence,pr_loc,pr_name.</u>

2NF(2nd Normalized Form):

1st:p_id,p_name,p_age,p_gender,p_blood,p_relatives, p_addess.

2nd: A id, casename, caseld, sentence.

3rd:pr_id,pr_loc,pr_name.

3NF(3rd Normalized Form):

1st:p_id,p_name,p_age,p_gender,p_blood,p_relatives, P_address,pr_id,A_id.

2nd: A id, casename, caseld, Sentence.

3rd:pr_id,pr_loc,pr_name.

Staff has Duty(Many to Many)

<u>UnnormalizedFrom(UNF):</u>

<u>S</u> <u>id</u>,s_age,s_status,s_blood,s_gender,s_designation,s_p hone,s_name,s_salary,<u>d</u> <u>id</u>,d_vacation,d_starthour,d_en dhour,d_break

1NF(1st Normalized Form):

There is no multivalued attribute. Relation already in <u>1NF.</u>

<u>S_id,d_id</u>,s_age,s_status,s_blood,s_gender,s_phone, s_designation,s_name,s_salary,d_vacation,d_starthour, d_endhour,d_break.

2NF(2nd Normalized Form):

1st:s id,s_age,s_status,s_blood,s_gender,s_designation, s_phone,s_name,s_salary.

2nd:<u>d</u> id,d_vacation,d_starthour,d_endhour,d_break

3NF(3rd Normalized Form):

There is no transitive dependency. Relation already in <u>3NF.</u>

1st:s id_s_age,s_status,s_blood,s_gender,s_designation, s_phone,s_name,s_salary

2nd:d id,d_vacation,d_starthour,d_endhour,d_break 3rd:s_id,d_id

Prisoner has Duty(Many to Many)

<u>UnnormalizedFrom(UNF):</u>

<u>D</u> <u>id</u>,d_vacation,d_starthour,d_endhour,d_break,<u>p</u> <u>id</u>, P_name,p_age,p_relatives,p_blood,p_gender,p_address, caseId,casename,sentence.

1NF(1st Normalized Form):

Casename is multivalued attribute.

<u>D</u> <u>id</u>,casename,p <u>id</u>,d_vacation,d_starthour,d_endhour,d_break,p_name,p_age,p_relatives,p_blood,p_gender,p_address,caseId,sentence.

2NF(2nd Normalized Form):

1st:p_id,p_name,p_age,p_relatives,p_blood,p_gender,
 p_address.

2nd: A id, casename, caseld, sentence.

3rd:d_id_,d_vacation,d_starthour,d_endhour,d_break.

3NF(3rd Normalized Form):

1st:p_id,p_name,p_age,p_relatives,p_blood,p_gender,p_address,A_id.

2nd: A id, casename, caseld, sentence.

3rd:d_id,d_vacation,d_starthour,d_endhour,d_break. 4th:p_id,d_id.

Staff gives duty in Blocks(Many to Many)

<u>UnnormalizedFrom(UNF):</u>

<u>S</u> <u>id</u>,s_age,s_status,s_blood,s_gender,s_phone,s_designa tion,s_name,s_salary,<u>b</u> <u>id</u>,blocktype

1NF(1st Normalized Form):

There is no multivalued attribute. Relation already in <u>1NF.</u>

<u>S id,b id</u>,s_age,s_status,s_blood,s_gender,s_phone, s_name,s_designation,s_salary,blocktype

2NF(2nd Normalized Form):

1st:s id,s_age,s_status,s_blood,s_gender,s_phone, s_name,s_designation,s_salary

2nd:b id,blocktype

3NF(3rd Normalized Form):

There is no transitive dependency. Relation already in <u>3NF.</u>

1st:s id,s_age,s_status,s_blood,s_gender,s_phone, s_name,s_designation,s_salary

2nd:b id,blocktype

3rd:s_id,b_id

Prisoner resdies at Block(Many to One)

<u>UnnormalizedFrom(UNF):</u>

<u>P_id</u>,p_name,p_age,p_relatives,p_blood,p_gender, p_address,caseId,casename,sentence,<u>b_id</u>,blocktype.

1NF(1st Normalized Form):

Casename is a multivalued attribute.

<u>P_id</u>,casename,b_id,p_name,p_age,p_relatives,p_blood, p_gender,p_address,caseId,sentence,blocktype.

2NF(2nd Normalized Form):

1st:p_id,p_name,p_age,p_relatives,p_gender,P_blood,p_address.

2nd: A id, casename, caseld, sentence.

3rd:b id,blocktype.

3NF(3rd Normalized Form):

1st:p_id,p_name,p_age,p_relatives,p_blood,p_gender,p_address,A_id,b_id.

2nd: A id, casename, caseld, sentence.

3rd:b id,blocktype.

Final Table:

- <u>S_id</u>,s_name,s_age,s_gender,s_blood,s_status,s_pho ne,s_designation,s_salary,**pr_id**.
- V id,v_name,v_relation,v_verification,v_hour,
 v_phone,pr_id.
- <u>b</u> id,blocktype.
- Pr id,pr_loc,pr_name.
- <u>d</u> <u>id</u>,d_vacation,d_starthour,d_endhour,d_break.
- S_id,d_id.
- S_id,b_id.
- b_id,pr_id.
- <u>P id</u>,p_name,p_age,p_gender,p_blood,p_address,p_relatives,**pr_id**,**A_id**,**b_id**.
- <u>A</u> id,caseName,caseId,sentence
- p_id,d_id.

Table Creation:

CREATE TABLE Prison(pr_id number(10) constraint pk2 primary key,pr_name varchar2(20),pr_loc varchar2(20));



CREATE TABLE Staff(s_id number(10) constraint pk1 primary key,s_name varchar2(20),s_age number(10),s_gender varchar2(20),s_blood varchar2(20),s_status varchar2(20),s_phone number(20),s_designation varchar2(20),s_salary number(20),pr_id number(10));

describe Staff;

bject T	ype TABLE Obje	ect STAFF							
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
STAFF	S_ID	Number	17-1	10	0	1	-	270	-
	S_NAME	Varchar2	20	-	-	-	/	-	- :
	S_AGE	Number	-	10	0	2	/	-	-
	S_GENDER	Varchar2	20	5	-	-	/	874	\$ 7 3
	S_BLOOD	Varchar2	20	-	-	-	/	: *:	(*)
	S_STATUS	Varchar2	20	2	-	¥	/	521	-
	S_PHONE	Number		20	0		/	274	-
	S_DESIGNATION	Varchar2	20	-	-	-	/	14	140
	S_SALARY	Number	925	20	0	-	/	121	127
	PR_ID	Number	: *:	10	0	-	/		-
								1-	- 10





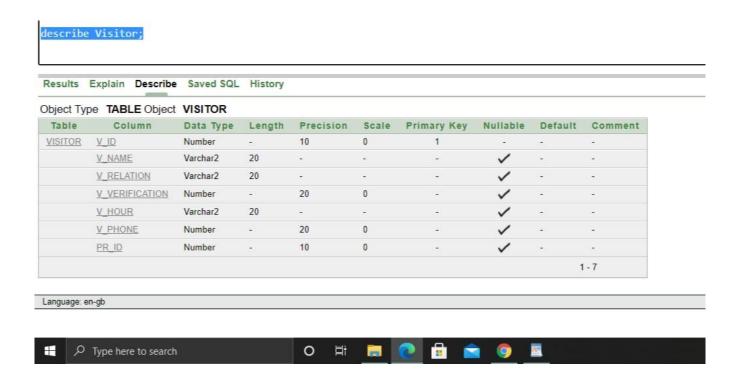




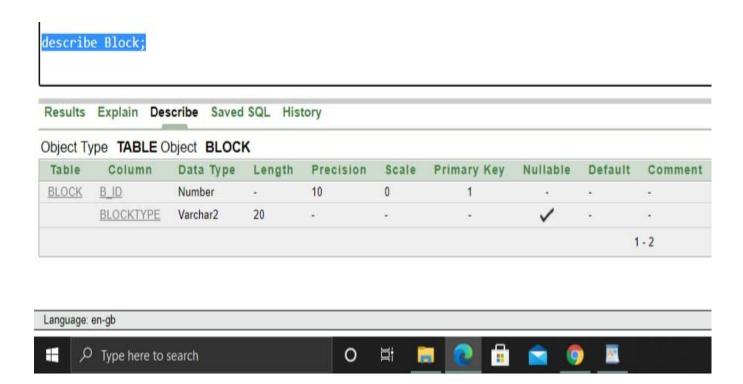




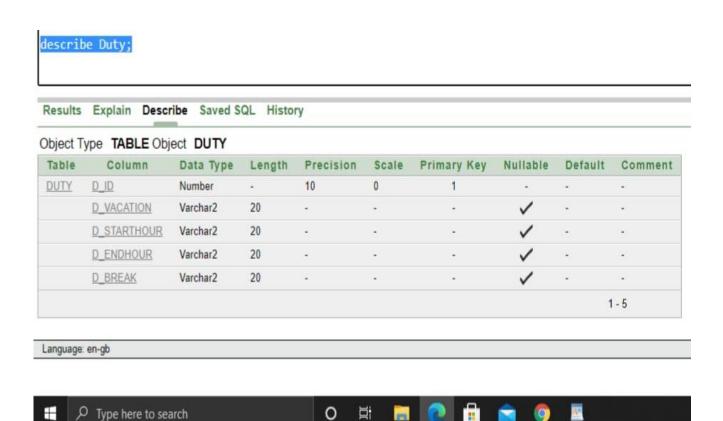
CREATE TABLE Visitor(v_id number(10) constraint pk3 primary key,v_name varchar2(20),v_relation varchar2(20),v_verification number(20),v_hour varchar2(20),v_phone number(20),pr_id number(10));



CREATE TABLE Block(b_id number(10) constraint pk4 primary key,blocktype varchar2(20));



CREATE TABLE Duty(d_id number(10) constraint pk5 primary key,d_vacation varchar2(20),d_starthour varchar2(20),d_endhour varchar2(20),d_break varchar2(20));



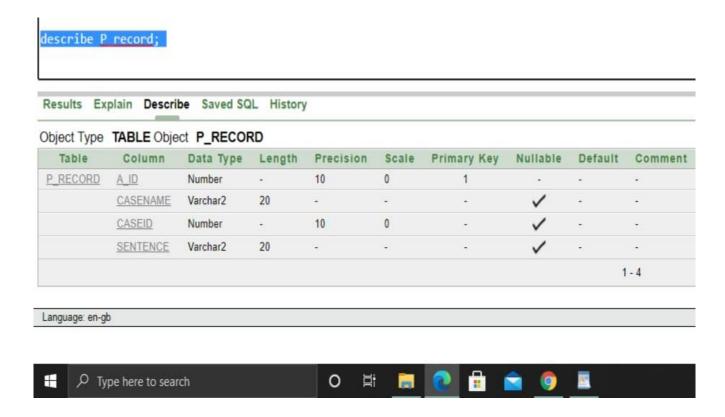
CREATE TABLE Prisoner(p_id number(10) constraint pk6 primary key,p_name varchar2(20),p_age number(10),p_gender varchar2(20),p_blood varchar2(20),p_relatives varchar2(20),p_address varchar2(20),pr_id number(10),b_id number(10),A_id number(10));

describe Prisoner;

Results Ex	plain Describe	Saved SQL	History						
Object Type	TABLE Object	PRISONER							
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Commen
PRISONER	P_ID	Number	8	10	0	1	2	3	2
	P_NAME	Varchar2	20	-	-	-	/	-	-
	P_AGE	Number	-	10	0	-	/	-	+:
	P_GENDER	Varchar2	20		121	4 0	/	2	2
	P_BLOOD	Varchar2	20	-		.#1	/		÷
	P_RELATIVES	Varchar2	20			-	/	+	+,
	P_ADDRESS	Varchar2	20	25 <u>1</u> 25	823	-	/	2	š
	PR_ID	Number		10	0		/	-	-
	B_ID	Number	2	10	0	-	/	2	=
	A_ID	Number	-	10	0	20	/	5	2
								1	- 10



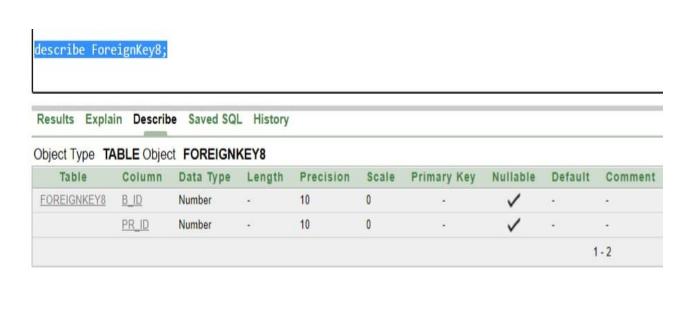
CREATE TABLE P_record(A_id number(10) constraint pk7 primary key,caseName varchar2(20),caseId number(10),sentence varchar2(20));



CREATE TABLE ForeignKey8(

Language: en-gb

b_id number(10),pr_id number(10));

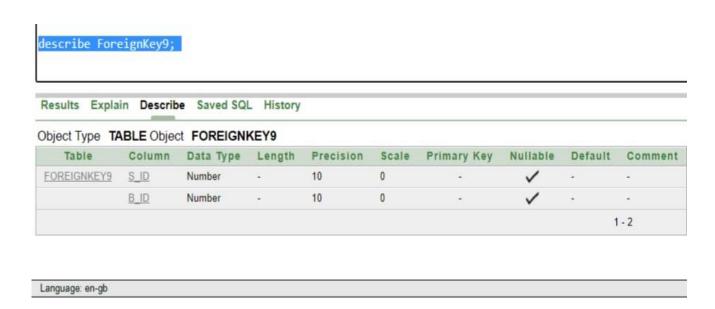




CREATE TABLE ForeignKey9(

P Type here to search

s_id number(10),b_id number(10));

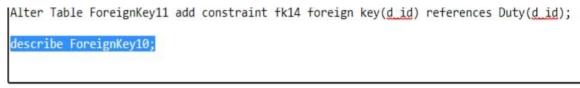


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CREATE TABLE ForeignKey10(

d_id number(10),p_id number(10));

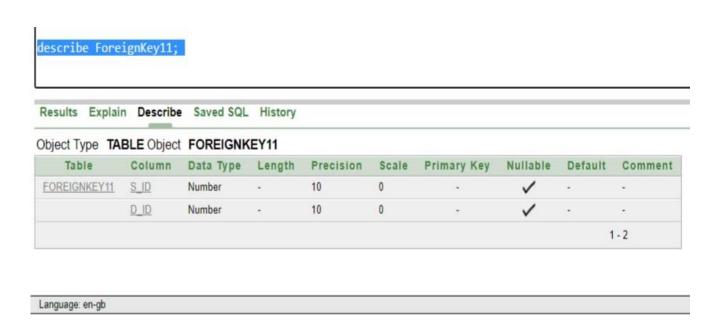


Object Type TA	BLE Object	FOREIGNK	EY10						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Commen
FOREIGNKEY10	D_ID	Number		10	0	*	/		
	PID	Number		10	0	-	/		



CREATE TABLE ForeignKey11(

s_id number(10),d_id number(10));





CONSTRAINT

Alter Table Prisoner add constraint fk1 foreign key(A id) references P record(A id); Alter Table Staff add constraint fk2 foreign key(pr id) references Prison(pr id); Alter Table Visitor add constraint fk3 foreign key(pr id) references prison(pr id); Alter Table Prisoner add constraint fk4 foreign key(pr id) References prison(pr id); Alter Table Prisoner add constraint fk5 foreign key(b id) References Block(b id); Alter Table Prisoner add constraint fk6 foreign key(A id) References P record(A id); Alter Table ForeignKey8 add constraint fk7 foreign key(b id) references Block(b id); Alter Table ForeignKey8 add constraint fk8 foreign key(pr id) references Prison(pr id); Alter Table ForeignKey9 add constraint fk9 foreign key(s id) references Staff(s id);

Alter Table ForeignKey9 add constraint fk10 foreign key(b_id) references Block(b_id);

Alter Table ForeignKey10 add constraint fk11 foreign key(d_id) references Duty(d_id);

Alter Table ForeignKey10 add constraint fk12 foreign key(p_id) references Prisoner(p_id);

Alter Table ForeignKey11 add constraint fk13 foreign key(s_id) references Staff(s_id);

Alter Table ForeignKey11 add constraint fk14 foreign key(d_id) references Duty(d_id);

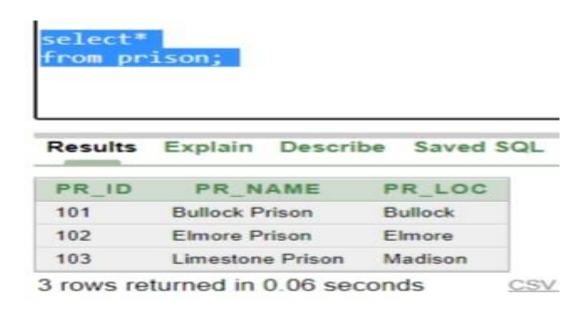
DATA INSERTION

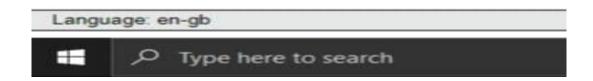
Prison Table:

INSERT INTO Prison values(101, 'Bullock Prison', 'Bullock');

INSERT INTO Prison values(102, 'Elmore Prison', 'Elmore');

INSERT INTO Prison values(103, 'Limestone Prison', 'Madison');





Staff Table:

INSERT INTO Staff

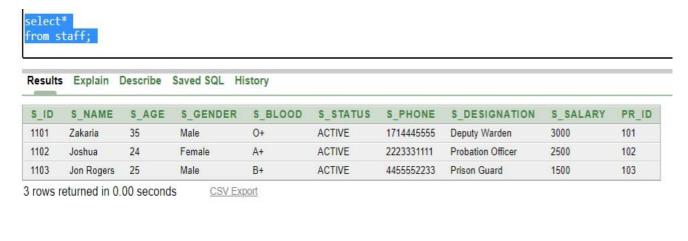
values(1101,'Zakaria',35,'Male','O+','ACTIVE',1714445555,'Deputy Warden',3000,101);

INSERT INTO Staff

values(1102,'Joshua',24,'Female','A+','ACTIVE',2223331111,'Probation Officer',2500,102);

INSERT INTO Staff values(1103, 'Jon

Rogers',25,'Male','B+','ACTIVE',4455552233,'Prison Guard',1500,103);





Visitor Table:

INSERT INTO Visitor values(1010, 'Jack Quaid', 'Husband', 3412, '10:00AM-10:20AM', 356741256, 101);

INSERT INTO Visitor values(1011, 'Shantel VanSanten', 'Brother', 3413, '10:00AM-10:20AM', 2459631258, 102);

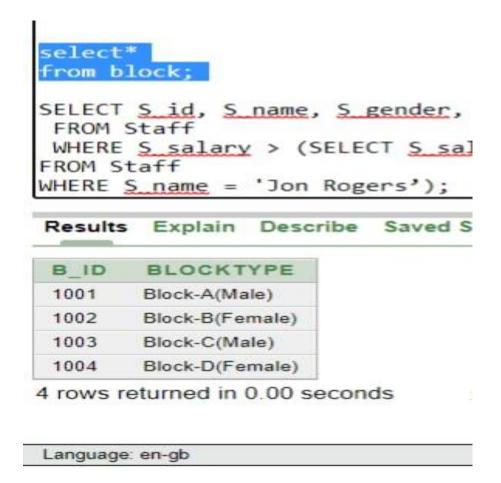
INSERT INTO Visitor values(1012, 'Timothec Chalamet', 'Sister', 3414, '12:00AM-12:20AM', 79654823, 103);





Block Table:

```
INSERT INTO Block values(1001, 'Block-A(Male)');
INSERT INTO Block values(1002, 'Block-B(Female)');
INSERT INTO Block values(1003, 'Block-C(Male)');
INSERT INTO Block values(1004, 'Block-D(Female)');
```

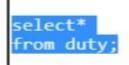


Duty Table:

INSERT INTO Duty values(201, 'In Vacation', '8-AM', '6-PM', '1PM to 1:30PM');

INSERT INTO Duty values(202,'0 Days Available','8-AM','6-PM','1PM to 1:30PM');

INSERT INTO Duty values(203,'7 Days Available','8-AM','6-PM','1PM to 1:30PM');



Results	Explain Desc	cribe Saved SQL	History	
D_ID	D_VACATION	D_STARTHOUR	D_ENDHOUR	D_BREAK
201	In Vacation	8-AM	6-PM	1PM to 1:30PM
202	0 Days Available	8-AM	6-PM	1PM to 1:30PM
203	7 Days Available	8-AM	6-PM	1PM to 1:30PM

Prisoner Table:

INSERT INTO Prisoner

VALUES(1,'Jim Jones',27,'Male','O+','Bella

Thorne', 'Borger, Texas', 101, 1001, 111);

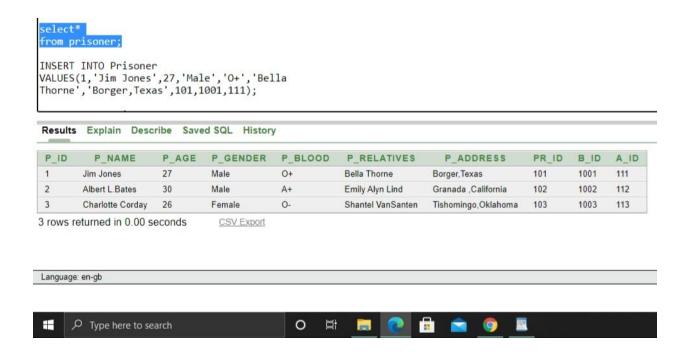
INSERT INTO Prisoner

VALUES(2,'Albert L.Bates',30,

'Male','A+','Emily Alyn Lind','Granada ,California',102,1002,112);

INSERT INTO Prisoner

VALUES(3,'Charlotte Corday',26,'Female','O-','Shantel VanSanten','Tishomingo,Oklahoma',103,1003,113);



P_record Table:

INSERT INTO P record

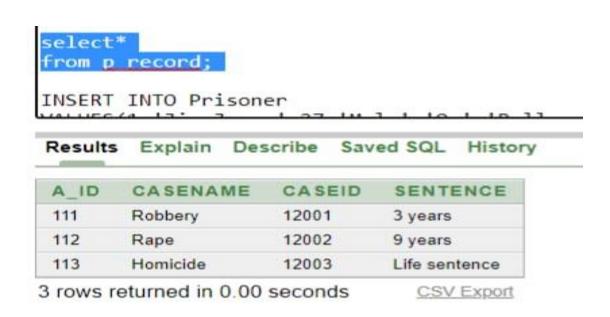
VALUES(111, 'Robbery', 12001, '3 years');

INSERT INTO P_record

VALUES(112, 'Rape', 12002, '9 years');

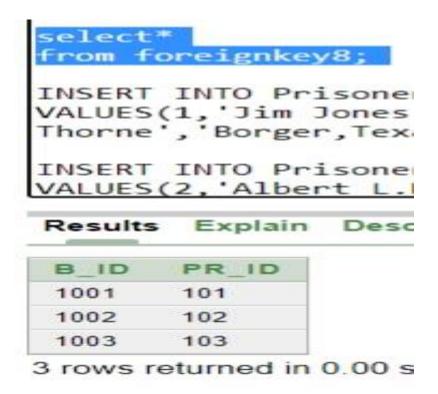
INSERT INTO P_record

VALUES(113, 'Homicide', 12003, 'Life sentence');



Foreign Key8 Table:

INSERT INTO Foreignkey8 values(1001,101);
INSERT INTO Foreignkey8 values(1002,102);
INSERT INTO Foreignkey8 values(1003,103);





Foreign Key9 Table:

```
INSERT INTO Foreignkey9 values(1101,1001);
INSERT INTO Foreignkey9 values(1102,1002);
INSERT INTO Foreignkey9 values(1103,1003);
```

```
from foreignkey9;
INSERT INTO Prisoner
VALUES(1, 'Jim Jones', 27, 'Male', 'O+', 'Bella
Thorne', 'Borger, Texas', 101, 1001, 111);
Results
        Explain
                  Describe
                           Saved SQL
                                       History
 SID
        B_ID
 1101
        1001
 1102
        1002
 1103
        1003
3 rows returned in 0.00 seconds
                                 CSV Export
```



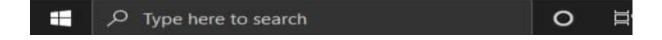
Foreign Key10 Table:

INSERT INTO Foreignkey10 values(201,1);

INSERT INTO Foreignkey10 values(202,2);

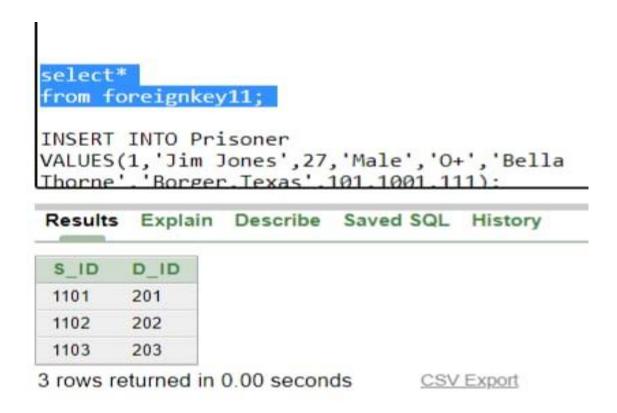
INSERT INTO Foreignkey10 values(203,3);

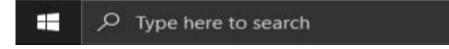




Foreign Key11 Table:

INSERT INTO Foreignkey11 values(1101,201);
INSERT INTO Foreignkey11 values(1102,202);
INSERT INTO Foreignkey11 values(1103,203);





Query Writing

Subquery:

Question-1: Display Staff's id, name, gender, salary and designation of those who have salary higher than 'Jon Rogers'.

Answer: SELECT S_id, S_name, S_gender, S_salary, S_designation

FROM Staff

WHERE S_salary > (SELECT S_salary

FROM Staff

WHERE S_name = 'Jon Rogers');

SELECT S id, S name, S gender, S salary, S designation FROM Staff
WHERE S salary > (SELECT S salary FROM Staff WHERE S name = 'Jon Rogers');

Results Explain Describe Saved SQL History

S_ID	S_NAME	S_GENDER	S_SALARY	S_DESIGNATION
1101	Zakaria	Male	3000	Deputy Warden
1102	Joshua	Female	2500	Probation Officer

Question-2: Display the name, id ,salary,gender and age of the staff whose salary is less than the salary of the staff who's age is less than 25.

Answer: SELECT S_id, S_name, S_gender, S_salary,s_age

FROM Staff

WHERE S_salary = (SELECT S_salary FROM Staff WHERE S_age < 25);



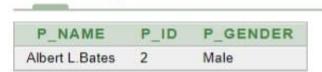


Question-3: Display the prisoner's name,id,gender who have "A+" blood group.

Answer:

```
select p_name,p_id,p_gender
from prisoner
where p_blood=(select p_blood
from prisoner where p_blood='A+');
```

```
select p name.p id.p gender
from prisoner
where p blood=(select p blood
from prisoner
where p blood='A+');
```



Describe

1 rows returned in 0.00 seconds

Explain

CSV Export

History

Saved SQL

Language: en-gb

Results

Question-4: Display the visitor name and id who's verification is less than 3413.

Answer:

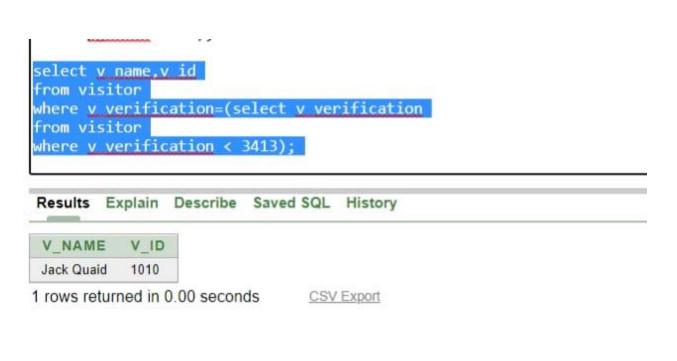
```
select v_name,v_id

from visitor

where v_verification=(select v_verification

from visitor

where v_verification < 3413);
```





Joining:

(Equi-join)

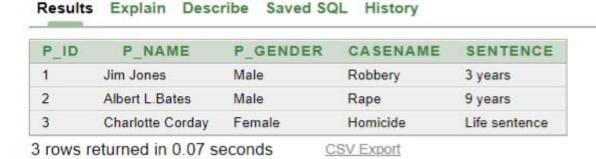
Question-1: Display prisoner's id,name,gender caseName and sentence of the prisoners.

Answer: select p_id,p_name,p_gender,caseName,sentence

from prisoner,p_record

where prisoner.A_id=p_record.A_id;

select p id.p name.p gender.caseName.sentence from prisoner.p record where prisoner.A id=p record.A id;





Question-2: Display prisoner's id,name,gender and blocktype of all the prisoners.

Answer: select p_id,p_name,p_gender,blocktype

from prisoner, Block

where prisoner.b_id=Block.b_id;

select p id.p name.p gender.blocktype from prisoner.Block where prisoner.b id=Block.b id;





(Outer join)

Question-3: Get all the matching and non-matching records from the tables.

Answer: select p id,p name,p gender,blocktype

from prisoner, Block

where prisoner.b_id(+)=Block.b_id;

select p id.p name.p gender.blocktype
from prisoner.Block
where prisoner.b id(+)=Block.b id;

Insert into Block values(1004, 'Block-D(Female)');

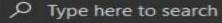
Explain Desc	ribe Saved SG	L History
P_NAME	P_GENDER	BLOCKTYPE
Jim Jones	Male	Block-A(Male)
Albert L.Bates	Male	Block-B(Female)
Charlotte Corday	Female	Block-C(Male)
	•	Block-D(Female)
	P_NAME Jim Jones Albert L.Bates Charlotte Corday	P_NAME P_GENDER Jim Jones Male Albert L.Bates Male Charlotte Corday Female

4 rows returned in 0.00 seconds

CSV Export

Language: en-gb





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VIEW:

Question-1: Create one view called StaffPhone based on the S_name and S_phone from the Staff table.

Answer: Create view StaffPhone as select S_name,S_phone from staff;

