



DATABASE SYSTEMS LAB

FINAL PROJECT

Name : AMAN SHAHEEN

Roll no : i170232

Lab Section A

Name : HAFSA SAQIB

Roll no : i170321

Lab Section G

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Roll no : i180446

Lab Section C

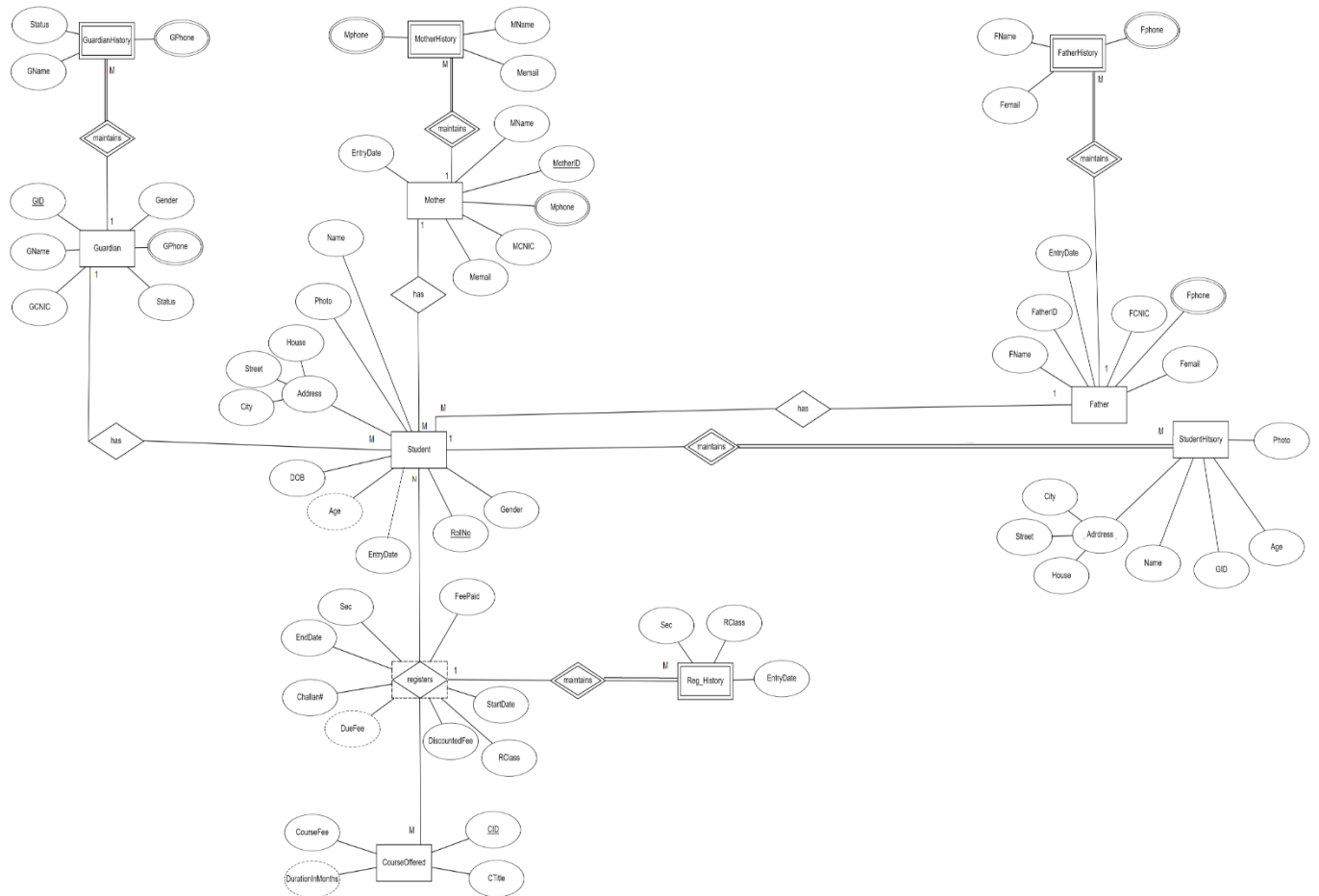
Submitted to: Sir Turab Ali

TABLE OF CONTENTS

The following report contains

- **ER diagram**
- **Relational schemas/ Mapping**
- **Description of all tables**
- **Datasets**
- **SQL statements used to create tables populate tables (insert statements).**
- **SQL statements as the answer to the needed 15 queries with images**

ER Diagram



Schema Diagram /ER MAPPING

Mother

<u>MID</u>	MCNIC	MName	Mphone	Memail	EntryDate
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Mother_History

<u>MID</u>	<u>SrNo</u>	MName	Mphone	Memail
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Father

<u>FID</u>	FCNIC	FName	Fphone	Femail	EntryDate
------------	-------	-------	--------	--------	-----------

Father_History

<u>FID</u>	<u>SrNo</u>	FName	Fphone	Femail
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Guardian

<u>GID</u>	GCNIC	GName	Gphone	Gender	Status	relation
------------	-------	-------	--------	--------	--------	----------

Guardian_History

<u>GID</u>	<u>SrNo</u>	GName	Gphone	Status
------------	-------------	-------	--------	--------

Students

<u>RollNo</u>	Name	Gender	DOB	Age	Photo	House	Street	City	EntryDate	GID	FID	MID
---------------	------	--------	-----	-----	-------	-------	--------	------	-----------	-----	-----	-----

Student_History

<u>RollNo</u>	<u>SrNo</u>	Name	Age	House	Street	City	Photo	GID
---------------	-------------	------	-----	-------	--------	------	-------	-----

Courses_Offered

<u>CID</u>	CTitle	CourseFee	Duration
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Registration

<u>RollNo</u>	<u>CID</u>	<u>SrNo</u>	Class	Sec	StartDate	EndDate	Discounted Fee	FeePaid	DueFee	Challan#
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Registration_History

<u>RollNo</u>	<u>CID</u>	<u>SrNO</u>	<u>rNO</u>	Class	Sec	EntryDate
---------------	------------	-------------	------------	-------	-----	-----------

Tables Description

Mother

<u>MID</u>	Mother identifier	PK	NUMBER(6)	
MCNIC	Mother CNIC		VC(20)	
MName	Mother Name		VC(20)	
Mphone	Mother Phone		VC(20)	
Memail	Mother email		VC(30)	
EntryDate	Date of the mother added to the database		DATE	

Mother_History

<u>MID</u>	Mother identifier	FK,PK	NUMBER(6)	Ref Mother
<u>SrNo</u>	Mother identifier along with serial no	INDXU,PK	INT	
MName	Mother Name		VC(20)	
Mphone	Mother Phone		VC(20)	
Memail	Mother email		VC(30)	

Father

<u>FID</u>	Father identifier	PK	NUMBER(6)	
FCNIC	Father CNIC		VC(20)	
FName	Father Name		VC(20)	
Fphone	Father Phone		VC(20)	
Femail	Father email		VC(30)	
EntryDate	Date of the Father added to the database		DATE	

Father_History

<u>FID</u>	Father identifier	FK,PK	NUMBER(6)	Ref Father
<u>SrNo</u>	Father identifier along with serial no	INDXU,PK	INT	
FName	Father Name		VC(20)	
Fphone	Father Phone		VC(20)	
Femail	Mother email		VC(30)	

Guardian

<u>GID</u>	Guardian identifier	PK	PK	NUMBER(6)
GCNIC	Guardian CNIC		INT	VC2(20)
GName	Guardian Name		VC(20)	VC2(20)
GPhone	Guardian Phone		VC(20)	VC2(20)
Gender	M/F		CHAR	Char
Status	Pregnant/Handicapped			VC2(30)
Relation	Relation to students			VC2(20)

Guardian_History

<u>GID</u>	Guardian identifier	FK,PK	INT	Ref Gaurdian
<u>SrNo</u>	Guardian identifier along with serial no	INDXU,PK	INT	
GName	Guardian Name		VC(20)	
Gphone	Guardian Phone		VC(20)	
Status			VC(30)	

Student

<u>RollNo</u>	Student Identifier	PK	NUMBER(4)	
SName	StudentName		VC2(20)	
Gender	Student Gender		CHAR(1)	
DOB	Student DOB		DATE	
Age	Student Age		NUMBER(2)	
House	Student House No		VC2(10)	
Street	Student street No		VC2(20)	
City	Student City		VC2(10)	
Photo	Student Photo		VC2(30)	
EntryDate	Date of the student got admission and was added to the database		DATE	
<i>GID</i>	Guardian identifier	FK	NUMBER(6)	Ref Guardian
<i>FID</i>	Father identifier	FK	NUMBER(6)	Ref Father
<i>MID</i>	Mother identifier	FK	NUMBER(6)	Ref Mother

Student_History

<u>RollNo</u>	Student Identifier	FK,PK	NUMBER(4)	Ref Student
<u>SrNo</u>	Student Identifier with Serial No	INDXU,PK	INT	
GID	Guardian identifier		NUMBER(6)	
Name	StudentName		VC2(20)	
Age	Student Age		NUMBER(2)	
House	Student House No		VC2(10)	
Street	Student street No		VC2(20)	
City	Student City		VC2(10)	
Photo	Student Photo		VC2(30)	

Courses_Offered

<u>CID</u>	Course identifier	PK	VC2(6)	
CTitle	Course Title		VC2(50)	
CourseFee	Course Fee		NUMBER(5)	
Duration_in_Months	Course Duration		NUMBER(2)	

Registration

<u>RollNo</u>	Student identifier	FK,PK	NUMBER(4)	Ref Student
<u>CID</u>	Course identifier	FK,PK	VC2(6)	Ref Course
<u>SrNo</u>	Registration no along with Student identifier and course identifier	INDXY,PK	INT	
Class	Student class		CHAR	
Sec	Student section of course		CHAR	
StartDate	Student Registration Date/Start of Classes Date		DATE	
EndDate	End of classes Date		DATE	
FeePaid	Amount of fee paid		FLOAT(4)	
DiscountedFee	Discount on fee		FLOAT(4)	
DueFee	Amount of fee due		FLOAT(4)	
Challan#	Voucher Number Of Challan received from Bank(Third Party)		VC2(30)	

Registration_History

<u>RollNo</u>	Student identifier	FK,PK	NUMBER(4)	Ref Registration
<u>CID</u>	Course identifier	FK,PK	VC2(6)	Ref Registration
<u>SrNO</u>	Registration no	FK,PK	INT	Ref Registration
<u>Rno</u>		INDXY,PK	INT	
Class	Student class		CHAR	
Sec	Student section of course		CHAR	
EntryDate	Date of the registration into a class added to the database		DATE	

DATA SETS

MOTHER

```
SQL> select * from mother;
```

MOTHERID	MCNIC	MNAME	MPHONE	MEMAIL	ENTRYDATE
171509	7150123274	Amna	+925192251	amnakhan@gmail.com	01-JUN-20
171582	7150123474	Zulaika	+925192151	zulaikhamir@hotmail.com	01-JUN-20
172217	7150123223	Emaan	+923458961	emaan@gmail.com	01-JUN-19
151162	7150123234	Maham	+923179001	mahamk@hotmail.com	01-JUN-20
191151	7150123232	Maham	+923175251	mahambutt@hotmail.com	01-JUN-20
181215	7150133225	Halima	+925115291	halimak@gmail.com	01-JUN-20
111566	7150123211	Marrium	+925422521	marriumj@gmail.com	01-JUN-20
111521	7150123267	Izza	+923175281	izzaamir@yahoo.com	01-JUN-20
227820	7150123299	Amen	+923121111	amenkhan@gmail.com	01-JUN-19
178911	7123456782	Tahira	+928923231	tahira@gmail.com	01-JUN-19

```
10 rows selected.
```

MOTHER_HISTORY

```
SQL> select * from mother_history;
```

MOTHERID	SRNO	MNAME	MPHONE	MEMAIL
171509	1	Amna	+925192251	amnakhan@gmail.com
171582	1	Zulaika	+925192151	zulaikhamir@hotmail.com
172217	1	Emaan	+923458961	emaan@gmail.com
151162	1	Maham	+923179001	mahamk@hotmail.com
191151	1	Maham	+923175251	mahambutt@hotmail.com
181215	1	Halima	+925115291	halimak@gmail.com
111566	1	Marrium	+925422521	marriumj@gmail.com
111521	1	Izza	+923175281	izzaamir@yahoo.com
227820	1	Amen	+923121111	amenkhan@gmail.com
178911	1	Tahira	+928923231	tahira@gmail.com

```
10 rows selected.
```

FATHER

```
SQL> select * from father;
```

FATHERID	FCNIC	FNAME	FPHONE	FEMAIL	ENTRYDATE
221912	2321516775	Ghayur Ahmed	+923131522	ghayur@gmail.com	01-JUN-19
717172	2321516740	Dildar Khan	+923178212	dildar@yahoo.com	01-JUN-20
221221	2321516744	Iftakhar Niazi	+923001513	iftakhar@gmail.com	01-JUN-20
158912	2321516746	Ghulam Ali	+923142273	ghulam@hotmail.com	01-JUN-19
211152	2321516748	Ejaz Khan	+923157973	ejaz@yahoo.com	01-JUN-19
722152	2321516750	Mohsin Abbasi	+923925214	mohsin@gmail.com	01-JUN-20
889988	2321516752	Haider Butt	+923235894	haider@yahoo.com	01-JUN-20
525150	2321516758	Moiz Butt	+923232935	moiz@yahoo.com	01-JUN-20
221212	2321516778	Maaz Khan	+923242296	maaz@hotmail.com	01-JUN-19

```
9 rows selected.
```

FATHER_HISTORY

```
SQL> select * from father_history;
```

FATHERID	SRNO	FNAME	FPHONE	FEMAIL
221912	1	Ghayur Ahmed	+923131522	ghayur@gmail.com
717172	1	Dildar Khan	+923178212	dildar@yahoo.com
221221	1	Iftakhar Niazi	+923001513	iftakhar@gmail.com
158912	1	Ghulam Ali	+923142273	ghulam@hotmail.com
211152	1	Ejaz Khan	+923157973	ejaz@yahoo.com
722152	1	Mohsin Abbasi	+923925214	mohsin@gmail.com
889988	1	Haider Butt	+923235894	haider@yahoo.com
525150	1	Moiz Butt	+923232935	moiz@yahoo.com
221212	1	Maaz Khan	+923242296	maaz@hotmail.com

```
9 rows selected.
```

GUARDIAN

```
SQL> select * from guardian;
```

GID GCNIC	GNAME	GPHONE	G STATUS	RELATION
818252 2712367238	Zulfiqar Ali	+924566541	M	Uncle
278215 2712367210	Maham Safdar	+924964544	F	Aunt
112299 2712367212	Marium Karim	+924589541	F Pregnant	Aunt
125862 2712367214	Ahmed Naseem	+924577741	M	Uncle
717279 2712367216	Tufail Murtaza	+927565541	M	Grand Father
715856 2712367218	Zorab Tarar	+929815339	M Handicapped	Uncle
612255 2712367220	Nagina Sheikh	+923569541	F	Aunt
621212 2712367222	Yasmin Rasheed	+920222541	F Pregnant	Grand Mother
615155 2712367224	Noor ul Ain	+923336678	F	Aunt
787822 2712367226	Noureen Abid	+924444231	F Handicapped	Aunt

10 rows selected.

GUARDIAN_HISTORY

```
SQL> select * from guardian_history;
```

GID	SRNO	GNAME	GPHONE	STATUS
818252	1	Zulfiqar Ali	+924566541	Pregnant
278215	1	Maham Safdar	+924964544	
112299	1	Marium Karim	+924589541	
125862	1	Ahmed Naseem	+924577741	
717279	1	Tufail Murtaza	+927565541	Handicapped
715856	1	Zorab Tarar	+929815339	
612255	1	Nagina Sheikh	+923569541	Pregnant
621212	1	Yasmin Rasheed	+920222541	
615155	1	Noor ul Ain	+923336678	Handicapped
787822	1	Noureen Abid	+924444231	

10 rows selected.

STUDENT

```
SQL> select * from student;
```

ROLLNO	MOTHERID	FATHERID	GID SNAME	G DOB	AGE HOUSE	STREET	CITY	PHOTO	ENTRYDATE
1701	171509	717172	615155 Qadeer	M 01-FEB-15	5 NA-154	7th road	RWP	p1.png	01-JUN-20
1702	172217	158912	278215 Saad	M 01-SEP-18	2 26/17	Harley Street	RWP	p2.png	01-JUN-20
1703	178911	211152	612255 Hamza	M 01-MAY-07	13 15-21	DHA	ISB	p3.png	01-JUN-19
1704	191151	717172	615155 Sobhan	M 05-SEP-18	2 NA-154	7th road	RWP	p4.png	01-JUN-20
1705	181215	525150	818252 Almira	F 25-FEB-08	12 19,15	Saddar	RWP	p5.png	01-JUN-20
1706	172217	158912	278215 Hayat	M 22-MAR-15	5 26/17	Harley Street	RWP	p6.png	01-JUN-20
1707	172217	158912	112299 Maryam	F 25-JAN-12	8 26/17	Harley Street	RWP	p7.png	01-JUN-20
1708	111566	889988	818252 Hamza	M 15-SEP-13	7 19,15	Saddar	RWP	p8.png	01-JUN-20
1709	172217	158912	112299 Maria	F 19-NOV-07	13 26/17	Harley Street	RWP	p9.png	01-JUN-19
1710	227820	221212	787822 Mubir	M 21-MAY-07	13 54-91	DHA	RWP	p10.png	01-JUN-19
1801	171582		621212 Ahsan	M 21-MAY-17	3 DK-56	Ali Street	RWP	p11.png	01-JUN-20
1802	171582		621212 Aleena	F 02-APR-16	4 DK-56	Ali Street	RWP	p12.png	01-JUN-20
1803	111521		125862 Asad	M 21-JAN-11	9 H#101	F-7/2	ISB	p13.png	01-JUN-20
1804	111521		125862 Sara	F 21-APR-10	10 H#101	F-7/2	ISB	p14.png	01-JUN-20
1901			717279 Mujtaba	M 01-JUL-09	11 NA-91	A Block	RWP	p15.png	01-JUN-19
1902			717279 Areesha	F 15-JUL-08	12 NA-91	A Block	RWP	p16.png	01-JUN-20
1910		221912	715856 Umar	M 11-MAY-08	12 11-91	DHA	ISB	p17.png	01-JUN-20
1911		221912	715856 Asim	M 01-MAR-06	14 11-91	DHA	ISB	p18.png	01-JUN-19
1111		221221	612255 Anwar	M 01-JAN-14	6 DK/121	E-Block	RWP	p19.png	01-JUN-20
1112		722152	612255 Aima	F 07-MAR-12	8 C-91	Bahria	RWP	p20.png	01-JUN-20
2201		221912	621212 Tayyab	M 01-JUN-10	10 E-8989	Saidpur Rd	RWP	p21.png	01-JUN-20

21 rows selected.

STUDENT_HISTORY

```
SQL> select * from student_history;
```

ROLLNO	SRNO	GID SNAME	AGE HOUSE	STREET	CITY	PHOTO
1701	1	615155 Qadeer	5 NA-154	7th road	RWP	p1.png
1702	1	278215 Saad	2 26/17	Harley Street	RWP	p2.png
1703	1	612255 Hamza	13 15-21	DHA	ISB	p3.png
1704	1	615155 Sobhan	2 NA-154	7th road	RWP	p4.png
1705	1	818252 Almira	12 19,15	Saddar	RWP	p5.png
1706	1	278215 Hayat	5 26/17	Harley Street	RWP	p6.png
1707	1	112299 Maryam	8 26/17	Harley Street	RWP	p7.png
1708	1	818252 Hamza	7 19,15	Saddar	RWP	p8.png
1709	1	112299 Maria	13 26/17	Harley Street	RWP	p9.png
1710	1	787822 Mubir	13 54-91	DHA	RWP	p10.png
1801	1	621212 Ahsan	3 DK-56	Ali Street	RWP	p11.png
1802	1	621212 Aleena	4 DK-56	Ali Street	RWP	p12.png
1803	1	125862 Asad	9 H#101	F-7/2	ISB	p13.png
1804	1	125862 Sara	10 H#101	F-7/2	ISB	p14.png
1901	1	717279 Mujtaba	11 NA-91	A Block	RWP	p15.png
1902	1	717279 Areesha	12 NA-91	A Block	RWP	p16.png
1910	1	715856 Umar	12 11-91	DHA	ISB	p17.png
1911	1	715856 Asim	14 11-91	DHA	ISB	p18.png
1111	1	612255 Anwar	6 DK/121	E-Block	RWP	p19.png
1112	1	612255 Aima	8 C-91	Bahria	RWP	p20.png
2201	1	621212 Tayyab	10 E-8989	Saidpur Rd	RWP	p21.png

21 rows selected.

COURSES_OFFERED

```
SQL> select * from courses_offered;
```

CID	CTITLE	FEE	DURATION_IN_MONTHS
IL-01	Pillars of Islam	10000	6
IL-02	Brief History of Muslims	10000	12
SS-05	Philosophy of Iqbal	15000	6
SS-09	Art and Craft	10000	24
HM-02	Sociology	5000	12
HM-05	Geography	5000	6
HM-09	Enviroment Science	5000	24
PK-01	Pakistan Studies	5000	6
PK-05	Polititcal Science	5000	24
MM-02	Basic Mathematics	10000	12

10 rows selected.

```
SQL>
```

REGISTRATION

```
SQL> select * from registration;
```

ROLLNO	CID	SRNO	RCLASS	SEC	STARTDATE	ENDDATE	FEEPAID	DISCOUNT	DUEFEE	CHALLANNO
1709	PK-01	1	5	G	24-MAY-19	24-NOV-19	5000	0	0	HL-12256907
1703	PK-01	1	5	B	24-MAY-19	24-NOV-19	5000	0	0	HL-12286909
1710	PK-01	1	5	B	24-MAY-19	24-NOV-19	0	5000	0	
1901	PK-01	1	4	B	24-MAY-19	24-NOV-19	5000	0	0	HL-12222309
1911	PK-01	1	6	B	24-MAY-19	24-NOV-19	5000	0	0	HL-56256257
1801	MM-02	1	1	K	24-MAY-20	24-MAY-21	10000	0	0	ALFALAH-1738
1802	MM-02	1	1	K	24-MAY-20	24-MAY-21	5000	5000	5000	ALFALAH-1718
1706	MM-02	1	2	K	24-MAY-20	24-MAY-21	5000	5000	0	ALHABIB-1708
1701	MM-02	1	2	K	24-MAY-20	24-MAY-21	10000	0	0	ALHABIB-0708
1111	MM-02	1	2	K	24-MAY-20	24-MAY-21	10000	0	0	ALHABIB-1798
1708	MM-02	1	3	K	24-MAY-20	24-MAY-21	9000	0	1000	ALHABIB-1708
1708	MM-02	2	3	K	24-MAY-20	24-MAY-21	1000	0	0	SILK-2208
1707	MM-02	1	3	K	24-MAY-20	24-MAY-21	5000	5000	0	BOP/2708
1112	MM-02	1	3	K	24-MAY-20	24-MAY-21	10000	0	0	BOP/1708/ISB
1803	MM-02	1	4	B	24-MAY-20	24-MAY-21	10000	0	0	BOP/1711/ISB
2201	MM-02	1	4	B	24-MAY-20	24-MAY-21	10000	0	0	BOP/1721/ISB
1804	MM-02	1	4	G	24-MAY-20	24-MAY-21	10000	0	0	BOP/1291/ISB
1901	MM-02	1	5	B	24-MAY-20	24-MAY-21	10000	0	0	BOP/9901/ISB
1902	MM-02	1	5	G	24-MAY-20	24-MAY-21	10000	0	0	BOP/9991/ISB
1705	MM-02	1	5	G	24-MAY-20	24-MAY-21	10000	0	0	UBL-9991/RWP
1910	MM-02	1	5	B	24-MAY-20	24-MAY-21	10000	0	0	HL-0891/ISB
1703	MM-02	1	6	B	24-MAY-20	24-MAY-21	10000	0	0	Askari930292
1710	MM-02	1	6	B	24-MAY-20	24-MAY-21	10000	0	0	Askari91039
1709	MM-02	1	6	G	24-MAY-20	24-MAY-21	5000	5000	0	Askari288282
1911	MM-02	1	6	B	24-MAY-20	24-MAY-21	10000	0	0	Askari38383

25 rows selected.

REGISTRATION_HISTORY

```
SQL> select * from registration_history;
```

ROLLNO	CID	SRNO	RNO	RCLASS	SEC	ENTRYDATE
1709	PK-01	1	1	5	G	01-JUN-19
1703	PK-01	1	1	5	B	01-JUN-19
1710	PK-01	1	1	5	B	01-JUN-19
1901	PK-01	1	1	4	B	01-JUN-19
1911	PK-01	1	1	6	B	01-JUN-19
1801	MM-02	1	1	1	K	01-JUN-20
1802	MM-02	1	1	1	K	01-JUN-20
1706	MM-02	1	1	2	K	01-JUN-20
1701	MM-02	1	1	2	K	01-JUN-20
1111	MM-02	1	1	2	K	01-JUN-20
1708	MM-02	1	1	3	K	01-JUN-20
1708	MM-02	2	1	3	K	01-JUN-20
1707	MM-02	1	1	3	K	01-JUN-20
1112	MM-02	1	1	3	K	01-JUN-20
1803	MM-02	1	1	4	B	01-JUN-20
2201	MM-02	1	1	4	B	01-JUN-20
1804	MM-02	1	1	4	G	01-JUN-20
1901	MM-02	1	1	5	B	01-JUN-20
1902	MM-02	1	1	5	G	01-JUN-20
1705	MM-02	1	1	5	G	01-JUN-20
1910	MM-02	1	1	5	B	01-JUN-20
1703	MM-02	1	1	6	B	01-JUN-20
1710	MM-02	1	1	6	B	01-JUN-20
1709	MM-02	1	1	6	G	01-JUN-20
1911	MM-02	1	1	6	B	01-JUN-20

```
25 rows selected.
```

DDL

- SQL statements used to create tables.
- SQL statements used to populate tables (insert statements).

/* MOTHERS Table */

Create table Mother

```
(  
    MotherID          number(6),  
    MCNIC varchar2(20),  
    MName      varchar2(20)  NOT NULL,  
    Mphone     varchar2(20)  NOT NULL,  
    Memail varchar2(30),  
    EntryDate date default sysdate,  
    CONSTRAINT pk_Mother primary key (MotherID)  
);
```

/* Inserting values in MOTHERS Table */

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail)

Values ('171509','7150123274','Amna','+925192251','amnakhan@gmail.com');

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail)

Values ('171582','7150123474','Zulaika','+925192151','zulaikhamir@hotmail.com');

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail,EntryDate)

Values ('172217','7150123223','Emaan','+923458961','emaan@gmail.com',add_months(sysdate,-12));

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail)

Values ('151162','7150123234','Maham','+923179001','mahamk@hotmail.com');

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail)

Values ('191151','7150123232','Maham','+923175251','mahambutt@hotmail.com');

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail)

Values ('181215','7150133225','Halima','+925115291','halimak@gmail.com');

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail)

Values ('111566','7150123211','Marrium','+925422521','marriumj@gmail.com');

```

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail)
Values ('111521','7150123267','Izza','+923175281','izzaamir@yahoo.com');

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail,EntryDate)
Values ('227820','7150123299','Amen','+923121111','amenkhan@gmail.com',add_months(sysdate,-12));

Insert into Mother (MotherID,MCNIC,MName,Mphone,Memail,EntryDate)
Values ('178911','7123456782','Tahira','+928923231','tahira@gmail.com',add_months(sysdate,-12));

/* MOTHERS_HISTORY Table */

Create table Mother_History
(
    MotherID          number(6),
    SrNo    int DEFAULT '1',
    MName      varchar2(20)  NOT NULL,
    Mphone     varchar2(20)  NOT NULL,
    Memail varchar2(30),
    FOREIGN KEY (MotherID) REFERENCES Mother(MotherID)
);

/* Inserting values in MOTHERS_HISTORY Table */

Insert into Mother_History(MotherID,MName,Mphone,Memail)
Select MotherID,MName,Mphone,Memail
From Mother;

/* Applying Constraints to MOTHERS_HISTORY table */

ALTER TABLE Mother_History
ADD CONSTRAINT pk_Mother_History PRIMARY KEY (SrNo,MotherID);

/* Triggers for MOTHERS_HISTORY */

CREATE OR REPLACE TRIGGER trg_Mother_History
Before insert on Mother_History

```



```

referencing new as new old as old for each row

declare

begin

select nvl(max(SrNo),0) + 1

into :new.SrNo

from Mother_History

where MotherID = :new.MotherID;

end;

/

CREATE TRIGGER Mother_History_insert_trigger

AFTER INSERT ON Mother

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

insert into Mother_History(MotherID,MName,Mphone,Memail)

values (:NEW.MotherID,:NEW.MName,:NEW.Mphone,:NEW.Memail);

END;

/

CREATE TRIGGER Mother_History_update_trigger

AFTER UPDATE ON Mother

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

insert into Mother_History(MotherID,MName,Mphone,Memail)

values (:NEW.MotherID,:NEW.MName,:NEW.Mphone,:NEW.Memail);

END;

/

CREATE TRIGGER M_History_delete_trigger

BEFORE DELETE ON Mother

```

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

 Delete from Mother_History

 where MotherID=:OLD.MotherID;

END;

/

/* Father Table */

Create table Father

(

 FatherID number(6),

 FCNIC varchar2(20),

 FName varchar2(20) NOT NULL,

 FPhone varchar2(20) NOT NULL,

 Femail varchar2(30),

 EntryDate date default sysdate,

 CONSTRAINT pk_Father primary key (FatherID)

);

/* Inserting values in Father Table */

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail,EntryDate)

Values ('221912','2321516775','Ghayur
Ahmed','+923131522','ghayur@gmail.com',add_months(sysdate,-12));

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail)

Values ('717172','2321516740','Dildar Khan','+923178212','dildar@yahoo.com');

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail)

Values ('221221','2321516744','Iftakhar Niazi','+923001513','iftakhar@gmail.com');

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail,EntryDate)

Values ('158912','2321516746','Ghulam
Ali','+923142273','ghulam@hotmail.com',add_months(sysdate,-12));

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail,EntryDate)

Values ('211152','2321516748','Ejaz Khan','+923157973','ejaz@yahoo.com',add_months(sysdate,-12));

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail)

Values ('722152','2321516750','Mohsin Abbasi','+923925214','mohsin@gmail.com');

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail)

Values ('889988','2321516752','Haider Butt','+923235894','haider@yahoo.com');

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail)

Values ('525150','2321516758','Moiz Butt','+923232935','moiz@yahoo.com');

Insert into Father (FatherID,FCNIC,FName,FPhone,Femail,EntryDate)

Values ('221212','2321516778','Maaz Khan','+923242296','maaz@hotmail.com',add_months(sysdate,-12));

/* Father_HISTORY Table */

Create table Father_History

```
(
    FatherID          number(6),
    SrNo    int DEFAULT '1',
    FName varchar2(20)  NOT NULL,
    FPhone varchar2(20)  NOT NULL,
    Femail varchar2(30),
    FOREIGN KEY (FatherID) REFERENCES Father(FatherID)
);
```

/* Inserting values in Father_HISTORY Table */

Insert into Father_History(FatherID,FName,FPhone,Femail)

Select FatherID,FName,FPhone,Femail

From Father;

/* Applying Constraints to Father_HISTORY table */

ALTER TABLE Father_History

ADD CONSTRAINT pk_Father_History PRIMARY KEY (SrNo,FatherID);

/* Triggers for Father_HISTORY */

CREATE OR REPLACE TRIGGER trg_Father_History

Before insert on Father_History

referencing new as new old as old for each row

declare

begin

select nvl(max(SrNo),0) + 1

into :new.SrNo

from Father_History

where FatherID = :new.FatherID;

end;

/

CREATE TRIGGER Father_History_insert_trigger

AFTER INSERT ON Father

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

insert into Father_History(FatherID,FName,FPhone,Femail)

values (:NEW.FatherID,:NEW.FName,:NEW.FPhone,:NEW.Femail);

END;

/

CREATE TRIGGER Father_History_update_trigger

AFTER UPDATE ON Father

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

insert into Father_History(FatherID,FName,FPhone,Femail)

```

        values (:NEW.FatherID,:NEW.FName,:NEW.FPhone,:NEW.Femail);

END;

/

CREATE TRIGGER F_History_delete_trigger
BEFORE DELETE ON Father
referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

    Delete from Father_History

        where FatherID=:OLD.FatherID;

END;

/

/* GUARDIANS Table */

Create table Guardian

(

    GID          number(6),

    GCNIC  varchar2(20)  NOT NULL,

    GName varchar2(20)  NOT NULL,

    Gphone      varchar2(20)  NOT NULL,

    Gender char          NOT NULL CHECK (Gender IN ('M','F')),

    Status  varchar2(30)  CHECK (Status IN ('Pregnant','Handicapped')),

    relation varchar2(20)  NOT NULL,

    CONSTRAINT pk_Guardian primary key (GID)

);

/* Inserting values in GUARDIANS Table */

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,relation)

Values ('818252','2712367238','Zulfiqar Ali','+924566541','M','Uncle');

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,relation)

Values ('278215','2712367210','Maham Safdar','+924964544','F','Aunt');

```

```

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,Status,relation)
Values ('112299','2712367212','Marium Karim','+924589541','F','Pregnant','Aunt');

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,relation)
Values ('125862','2712367214','Ahmed Naseem','+924577741','M','Uncle');

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,relation)
Values ('717279','2712367216','Tufail Murtaza','+927565541','M','Grand Father');

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,Status,relation)
Values ('715856','2712367218','Zorab Tarar','+929815339','M','Handicapped','Uncle');

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,relation)
Values ('612255','2712367220','Nagina Sheikh','+923569541','F','Aunt');

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,Status,relation)
Values ('621212','2712367222','Yasmin Rasheed','+920222541','F','Pregnant','Grand Mother');

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,relation)
Values ('615155','2712367224','Noor ul Ain','+923336678','F','Aunt');

Insert into Guardian (GID,GCNIC,GName,Gphone,Gender,Status,relation)
Values ('787822','2712367226','Noureen Abid','+924444231','F','Handicapped','Aunt');

```

```

/* GUARDIANS_HISTORY Table */

```

```

Create table Guardian_History

```

```

(
    GID          number(6),
    SrNo    int DEFAULT '1',
    GName varchar2(20)    NOT NULL,
    Gphone      varchar2(20)    NOT NULL,
    Status  varchar2(30),
    FOREIGN KEY (GID) REFERENCES Guardian(GID)
);

```

```

/* Inserting values in GUARDIANS_HISTORY Table */

```

```

Insert into Guardian_History(GID,GName,Gphone,Status)

```

Select GID,GName,Gphone,Status

From Guardian;

/* Applying Constraints to GUARDIANS_HISTORY table */

ALTER TABLE Guardian_History

ADD CONSTRAINT pk_Guardian_History PRIMARY KEY (SrNo,GID);

/* Triggers for GUARDIANS_HISTORY */

CREATE OR REPLACE TRIGGER trg_Guardian_History

Before insert on Guardian_History

referencing new as new old as old for each row

declare

begin

select nvl(max(SrNo),0) + 1

into :new.SrNo

from Guardian_History

where GID = :new.GID;

end;

/

CREATE TRIGGER G_History_insert_trigger

AFTER INSERT ON Guardian

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

insert into Guardian_History(GID,GName,Gphone,Status)

values (:NEW.GID,:NEW.GName,:NEW.Gphone,:NEW.Status);

END;

/

CREATE TRIGGER G_History_update_trigger

AFTER UPDATE ON Guardian

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

insert into Guardian_History(GID,GName,Gphone,Status)

values (:NEW.GID,:NEW.GName,:NEW.Gphone,:NEW.Status);

END;

/

CREATE TRIGGER G_History_delete_trigger

BEFORE DELETE ON Guardian

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

Delete from Guardian_History

where GID=:OLD.GID;

END;

/

/* Student Table */

Create table Student

(

RollNo number(4),

MotherID number(6),

FatherID number(6),

GID number(6) NOT NULL,

SName varchar2(20) NOT NULL,

Gender char NOT NULL CHECK (Gender IN ('M','F')),

DOB date,

Age number(4) CHECK (Age < 15),

House varchar2(10),


```
Street varchar2(20),  
City varchar2(10),  
Photo varchar2(25),  
EntryDate date default sysdate,  
CONSTRAINT pk_Student primary key (RollNo),  
CONSTRAINT fk_Student_M foreign key (MotherID) references Mother(MotherID),  
CONSTRAINT fk_Student_F foreign key (FatherID) references Father(FatherID),  
CONSTRAINT fk_Student_G foreign key (GID) references Guardian(GID)  
);
```

```
Insert into Student( RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)  
values ('1701','171509','717172','615155','Qadeer','M',date '2015-02-01',extract(year from sysdate) -  
extract(year from date '2015-02-01'),'NA-154','7th road','RWP','p1.png');
```

```
Insert into Student( RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)  
values ('1702','172217','158912','278215','Saad','M', date '2018-09-01',extract(year from sysdate) -  
extract(year from date '2018-09-01'),'26/17','Harley Street','RWP','p2.png');
```

```
Insert into Student(  
RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo,EntryDate)  
values ('1703','178911','211152','612255','Hamza','M',date '2007-05-01',extract(year from sysdate) -  
extract(year from date '2007-05-01'),'15-21','DHA','ISB','p3.png',add_months(sysdate,-12));
```

```
Insert into Student( RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)  
values ('1704','191151','717172','615155','Sobhan','M',date '2018-09-05',extract(year from sysdate) -  
extract(year from date '2018-09-05'),'NA-154','7th road','RWP','p4.png');
```

```
Insert into Student( RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)  
values ('1705','181215','525150','818252','Almira','F',date '2008-02-25',extract(year from sysdate) -  
extract(year from date '2008-02-25'),'19,15','Saddar','RWP','p5.png');
```

```
Insert into Student( RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)
values ('1706','172217','158912','278215','Hayat','M',date '2015-03-22',extract(year from sysdate) -
extract(year from date '2015-03-22'),'26/17','Harley Street','RWP','p6.png');
```

```
Insert into Student( RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)
values ('1707','172217','158912','112299','Maryam','F',date '2012-01-25',extract(year from sysdate) -
extract(year from date '2012-01-25'),'26/17','Harley Street','RWP','p7.png');
```

```
Insert into Student( RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)
values ('1708','111566','889988','818252','Hamza','M',date '2013-09-15',extract(year from sysdate) -
extract(year from date '2013-09-15'),'19,15','Saddar','RWP','p8.png');
```

```
Insert into Student(
RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo,EntryDate)
values ('1709','172217','158912','112299','Maria','F',date '2007-11-19',extract(year from sysdate) -
extract(year from date '2007-11-19'),'26/17','Harley Street','RWP','p9.png',add_months(sysdate,-12));
```

```
Insert into Student(
RollNo,MotherID,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo,EntryDate)
values ('1710','227820','221212','787822','Mubir','M',date '2007-05-21',extract(year from sysdate) -
extract(year from date '2007-05-21'),'54-91','DHA','RWP','p10.png',add_months(sysdate,-12));
```

```
Insert into Student( RollNo,MotherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)
values ('1801','171582','621212','Ahsan','M',date '2017-05-21',extract(year from sysdate) -
extract(year from date '2017-05-21'),'DK-56','Ali Street','RWP','p11.png');
```

```
Insert into Student( RollNo,MotherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)
values ('1802','171582','621212','Aleena','F',date '2016-04-02',extract(year from sysdate) -
extract(year from date '2016-04-02'),'DK-56','Ali Street','RWP','p12.png');
```

```
Insert into Student( RollNo,MotherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)
```

values ('1803','111521','125862','Asad','M',date '2011-01-21',extract(year from sysdate) - extract(year from date '2011-01-21'),'H#101','F-7/2','ISB','p13.png');

Insert into Student(RollNo,MotherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)

values ('1804','111521','125862','Sara','F',date '2010-04-21',extract(year from sysdate) - extract(year from date '2010-04-21'),'H#101','F-7/2','ISB','p14.png');

Insert into Student(RollNo,GID,SName,Gender,DOB,Age,House,Street,City,Photo,EntryDate)

values ('1901','717279','Mujtaba','M',date '2009-07-01',extract(year from sysdate) - extract(year from date '2009-07-01'),'NA-91','A Block','RWP','p15.png',add_months(sysdate,-12));

Insert into Student(RollNo,GID,SName,Gender,DOB,Age,House,Street,City,Photo)

values ('1902','717279','Areesha','F',date '2008-07-15',extract(year from sysdate) - extract(year from date '2008-07-15'),'NA-91','A Block','RWP','p16.png');

Insert into Student(RollNo,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)

values ('1910','221912','715856','Umar','M',date '2008-05-11',extract(year from sysdate) - extract(year from date '2008-05-11'),'11-91','DHA','ISB','p17.png');

Insert into Student(RollNo,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo,EntryDate)

values ('1911','221912','715856','Asim','M',date '2006-03-01',extract(year from sysdate) - extract(year from date '2006-03-01'),'11-91','DHA','ISB','p18.png',add_months(sysdate,-12));

Insert into Student(RollNo,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)

values ('1111','221221','612255','Anwar','M',date '2014-01-01',extract(year from sysdate) - extract(year from date '2014-01-01'),'DK/121','E-Block','RWP','p19.png');

Insert into Student(RollNo,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)

values ('1112','722152','612255','Aima','F',date '2012-03-07',extract(year from sysdate) - extract(year from date '2012-03-07'),'C-91','Bahria','RWP','p20.png');

Insert into Student(RollNo,FatherID,GID,SName,Gender,DOB,Age,House,Street,City,Photo)

values ('2201','221912','621212','Tayyab','M',date '2010-06-01',extract(year from sysdate) -
extract(year from date '2010-06-01'),'E-8989' ,'Saidpur Rd','RWP','p21.png');

Create table Student_History

```
(  
    RollNo  number(4),  
    SrNo    int DEFAULT '1',  
    GID      number(6)          NOT NULL,  
    SName   varchar2(20)  NOT NULL,  
    Age      Number(4)      CHECK (Age < 15),  
    House   varchar2(10),  
    Street  varchar2(20),  
    City    varchar2(10),  
    Photo   varchar2(25),  
    foreign key (RollNo) references Student(RollNo)  
);
```

/* Inserting values in STUDENTS_HISTORY Table */

Insert into Student_History(RollNo,GID,SName,Age,House,Street,City,Photo)

Select RollNo,GID,SName,Age,House,Street,City,Photo

From Student;

/* Applying Constraints to STUDENTS_HISTORY table */

ALTER TABLE Student_History

ADD CONSTRAINT pk_Student_History PRIMARY KEY (SrNo,RollNo);

/* Triggers for STUDENTS_HISTORY */

CREATE OR REPLACE TRIGGER trg_Student_History

Before insert on Student_History

referencing new as new old as old for each row

declare

```

        begin
        select nvl(max(SrNo),0) + 1
        into :new.SrNo
        from Student_History
        where RollNo = :new.RollNo;
        end;

/

CREATE or replace TRIGGER S_History_insert_trigger
AFTER INSERT ON Student
referencing new as new old as old FOR EACH ROW
DECLARE
BEGIN
    insert into Student_History(RollNo,GID,SName,Age,House,Street,City,Photo)
    values
    (:NEW.RollNo,:NEW.GID,:NEW.SName,:NEW.Age,:NEW.House,:NEW.Street,:NEW.City,:NEW.Photo);
END;

/

CREATE or replace TRIGGER S_History_update_trigger
AFTER UPDATE ON Student
referencing new as new old as old FOR EACH ROW
DECLARE
BEGIN
    insert into Student_History(RollNo,GID,SName,Age,House,Street,City,Photo)
    values
    (:NEW.RollNo,:NEW.GID,:NEW.SName,:NEW.Age,:NEW.House,:NEW.Street,:NEW.City,:NEW.Photo);
END;

/

CREATE or replace TRIGGER St_History_delete_trigger
BEFORE DELETE ON Student

```

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

 Delete from Student_History

 where RollNo=:OLD.RollNo;

END;

/

Create Table Courses_Offered

(

 CID varchar2(6),

 CTitle varchar2(50) NOT NULL,

 Fee Number(5),

 Duration_in_Months int,

 CONSTRAINT pk_Course primary key (CID)

);

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)

values ('IL-01','Pillars of Islam','10000','6');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)

values ('IL-02','Brief History of Muslims','10000','12');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)

values ('SS-05','Philosophy of Iqbal','15000','6');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)

values ('SS-09','Art and Craft','10000','24');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)

values ('HM-02','Sociology','5000','12');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)

values ('HM-05','Geography','5000','6');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)

values ('HM-09','Enviroment Science','5000','24');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)
values ('PK-01','Pakistan Studies','5000','6');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)
values ('PK-05','Political Science','5000','24');

Insert into Courses_Offered(CID,CTitle,Fee,Duration_in_Months)
values ('MM-02','Basic Mathematics','10000','12');

Create Table Registration(

RollNo number(4),
CID varchar2(6),
SrNo int DEFAULT '1',
RClass char(10) CHECK (RClass in('1','2','3','4','5','6')) NOT NULL,
Sec char(10) default 'K',CHECK (Sec in('K','G','B')),
StartDate Date NOT NULL,
EndDate Date,
FeePaid float(4) NOT NULL,
Discount float(4) default 0.00,
DueFee float(4),
ChallanNo varchar(30),
Foreign key (RollNo) references Student(Rollno),
Foreign key (CID) references Courses_Offered(CID),
CONSTRAINT pk_Registraion PRIMARY KEY (RollNo,CID,SrNo)

);

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)
values ('1709','PK-01','5','G',add_months(sysdate,-12),add_months(add_months(sysdate,-12),6),'5000.00','0.00','0.00','HBL-12256907');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)
values ('1703','PK-01','5','B',add_months(sysdate,-12),add_months(add_months(sysdate,-12),6),'5000.00','0.00','0.00','HBL-12286909');

```
insert into Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee)
values ('1710','PK-01','5','B',add_months(sysdate,-12),add_months(add_months(sysdate,-
12),6),'0.00','5000.00','0.00');
```

```
insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)
values ('1901','PK-01','4','B',add_months(sysdate,-12),add_months(add_months(sysdate,-
12),6),'5000.00','0.00','0.00','HBL-12222309');
```

```
insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)
values ('1911','PK-01','6','B',add_months(sysdate,-12),add_months(add_months(sysdate,-
12),6),'5000.00','0.00','0.00','HBL-56256257');
```

```
CREATE OR REPLACE TRIGGER trg_Registration
```

```
Before insert on Registration
```

```
referencing new as new old as old for each row
```

```
declare
```

```
begin
```

```
select nvl(max(SrNo),0) + 1
```

```
into :new.SrNo
```

```
from Registration
```

```
where RollNo = :new.RollNo and CID = :new.CID;
```

```
end;
```

```
/
```

```
insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)
values ('1801','MM-02','1','K',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','ALFALAH-
1738');
```

```
insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)
values ('1802','MM-
02','1','K',sysdate,add_months(sysdate,12),'5000.00','5000.00','5000.00','ALFALAH-1718');
```

```
insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)
```


values ('1706','MM-02','2','K',sysdate,add_months(sysdate,12),'5000.00','5000.00','0.00','ALHABIB-1708');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1701','MM-02','2','K',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','ALHABIB-0708');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1111','MM-02','2','K',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','ALHABIB-1798');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1708','MM-02','3','K',sysdate,add_months(sysdate,12),'9000.00','0.00','1000.00','ALHABIB-1708');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1708','MM-02','3','K',sysdate,add_months(sysdate,12),'1000.00','0.00','0.00','SILK-2208');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1707','MM-02','3','K',sysdate,add_months(sysdate,12),'5000.00','5000.00','0.00','BOP/2708');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1112','MM-02','3','K',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','BOP/1708/ISB');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1803','MM-02','4','B',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','BOP/1711/ISB');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('2201','MM-02','4','B',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','BOP/1721/ISB');

insert into

Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

```

values ('1804','MM-
02','4','G',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','BOP/1291/ISB');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1901','MM-
02','5','B',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','BOP/9901/ISB');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1902','MM-
02','5','G',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','BOP/9991/ISB');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1705','MM-02','5','G',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','UBL-
9991/RWP');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1910','MM-02','5','B',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','HBL-0891/ISB');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1703','MM-02','6','B',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','Askari930292');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1710','MM-02','6','B',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','Askari91039');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1709','MM-
02','6','G',sysdate,add_months(sysdate,12),'5000.00','5000.00','0.00','Askari288282');

insert into
Registration(RollNo,CID,RClass,Sec,StartDate,EndDate,FeePaid,Discount,DueFee,ChallanNO)

values ('1911','MM-02','6','B',sysdate,add_months(sysdate,12),'10000.00','0.00','0.00','Askari38383');

Create Table Registration_History(
    RollNo          number(4),
    CID              varchar2(6),

```

```

        SrNo          int ,
        rNO           int    Default '1',
        RClass        char(10),
        Sec           char(10) ,
        EntryDate     date default sysdate,
        Foreign key (RollNo,CID,SrNo) references Registration(RollNo,CID,SrNo)
    );

Insert into Registration_History(RollNo,CID,SrNo,RClass,Sec,EntryDate)

Select RollNo,CID,SrNo,RClass,Sec,StartDate
From registration;

ALTER TABLE Registration_History
ADD CONSTRAINT pk_Registration_History PRIMARY KEY (RollNo,CID,SrNo,rNO);

CREATE OR REPLACE TRIGGER trg_Registration_History
    Before insert on Registration_History
    referencing new as new old as old for each row
    declare
    begin
    select nvl(max(rNo),0) + 1
    into :new.rNo
    from Registration_History
    where RollNo = :new.RollNo and CID = :new.CID and SrNo=:new.SrNo;
    end;

/

CREATE or replace TRIGGER R_History_insert_trigger
AFTER INSERT ON Registration
referencing new as new old as old FOR EACH ROW

```

DECLARE

BEGIN

insert into Registration_History(RollNo,CID,SrNo,RClass,Sec)
 values (:new.RollNo,:new.CID,:new.SrNo,:new.RClass,:new.Sec);

END;

/

CREATE or replace TRIGGER R_History_update_trigger

AFTER UPDATE ON Registration

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

insert into Registration_History(RollNo,CID,SrNo,RClass,Sec)
 values (:new.RollNo,:new.CID,:new.SrNo,:new.RClass,:new.Sec);

END;

/

CREATE or replace TRIGGER R_History_delete_trigger

BEFORE DELETE ON Registration

referencing new as new old as old FOR EACH ROW

DECLARE

BEGIN

Delete from Registration_History
 where RollNo = :old.RollNo;

END;

/

SQL statements as the answer to the needed 15 queries

QUERY 1 - A list of all students

select * from student;

ROLLNO	MOTHERID	FATHERID	GID SNAME	G DOB	AGE HOUSE	STREET	CITY	PHOTO
1701	171509	717172	615155 Qadeer	M 01-FEB-15	5 NA-154	7th road	RWP	p1.png
1702	172217	158912	278215 Saad	M 01-SEP-18	2 26/17	Harley Street	RWP	p2.png
1703	178911	211152	612255 Hamza	M 01-MAY-07	13 15-21	DHA	ISB	p3.png
1704	191151	717172	615155 Sobhan	M 05-SEP-18	2 NA-154	7th road	RWP	p4.png
1705	181215	525150	818252 Almira	F 25-FEB-08	12 19,15	Saddar	RWP	p5.png
1706	172217	158912	278215 Hayat	M 22-MAR-15	5 26/17	Harley Street	RWP	p6.png
1707	172217	158912	112299 Maryam	F 25-JAN-12	8 26/17	Harley Street	RWP	p7.png
1708	111566	889988	818252 Hamza	M 15-SEP-13	7 19,15	Saddar	RWP	p8.png
1709	172217	158912	112299 Maria	F 19-NOV-07	13 26/17	Harley Street	RWP	p9.png
1710	227820	221212	787822 Mubir	M 21-MAY-07	13 54-91	DHA	RWP	p10.png
1801	171582		621212 Ahsan	M 21-MAY-17	3 DK-56	Ali Street	RWP	p11.png
1802	171582		621212 Aleena	F 02-APR-16	4 DK-56	Ali Street	RWP	p12.png
1803	111521		125862 Asad	M 21-JAN-11	9 H#101	F-7/2	ISB	p13.png
1804	111521		125862 Sara	F 21-APR-10	10 H#101	F-7/2	ISB	p14.png
1901			717279 Mujtaba	M 01-JUL-09	11 NA-91	A Block	RWP	p15.png
1902			717279 Areesha	F 15-JUL-08	12 NA-91	A Block	RWP	p16.png
1910		221912	715856 Umar	M 11-MAY-08	12 11-91	DHA	ISB	p17.png
1911		221912	715856 Asim	M 01-MAR-06	14 11-91	DHA	ISB	p18.png
1111		221221	612255 Anwar	M 01-JAN-14	6 DK/121	E-Block	RWP	p19.png
1112		722152	612255 Aima	F 07-MAR-12	8 C-91	Bahria	RWP	p20.png
2201		221912	621212 Tayyab	M 01-JUN-10	10 E-8989	Saidpur Rd	RWP	p21.png

21 rows selected.

QUERY 2 - A LIST OF ALL MOTHERS AND THEIR SPOUSES

```
select DISTINCT m.*,f.fname SpouseName  
from mother m,father f,student s  
where m.motherid=s.motherid  
and f.fatherid=s.fatherid;
```

```
SQL> select DISTINCT m.*,f.fname SpouseName  
2  from mother m,father f,student s  
3  where m.motherid=s.motherid  
4  and f.fatherid=s.fatherid;
```

MOTHERID	MCNIC	MNAME	MPHONE	MEMAIL	SPOUSENAME
191151	7150123232	Maham	+923175251	mahambutt@hotmail.com	Dildar Khan
172217	7150123223	Emaan	+923458961	emaan@gmail.com	Ghulam Ali
178911	7123456782	Tahira	+928923231	tahira@gmail.com	Ejaz Khan
111566	7150123211	Marrium	+925422521	marriumj@gmail.com	Haider Butt
171509	7150123274	Amna	+925192251	amnakhan@gmail.com	Dildar Khan
181215	7150133225	Halima	+925115291	halimak@gmail.com	Moiz Butt
227820	7150123299	Amen	+923121111	amenkhan@gmail.com	Maaz Khan

```
7 rows selected.
```

QUERY 3 - A list of all guardians, grouped by relation to students (show students as well)

```
select g.* ,s.sname Student_Name
```

```
from guardian g,student s
```

```
where g.gid=s.gid;
```

```
SQL> select g.* ,s.sname Student_Name
2  from guardian g,student s
3  where g.gid=s.gid;
```

GID GCNIC	GNAME	GPHONE	G STATUS	RELATION	STUDENT_NAME
615155 2712367224	Noor ul Ain	+923336678	F	Aunt	Qadeer
278215 2712367210	Maham Safdar	+924964544	F	Aunt	Saad
612255 2712367220	Nagina Sheikh	+923569541	F	Aunt	Hamza
615155 2712367224	Noor ul Ain	+923336678	F	Aunt	Sobhan
818252 2712367238	Zulfiqar Ali	+924566541	M	Uncle	Almira
278215 2712367210	Maham Safdar	+924964544	F	Aunt	Hayat
112299 2712367212	Marium Karim	+924589541	F Pregnant	Aunt	Maryam
818252 2712367238	Zulfiqar Ali	+924566541	M	Uncle	Hamza
112299 2712367212	Marium Karim	+924589541	F Pregnant	Aunt	Maria
787822 2712367226	Noureen Abid	+924444231	F Handicapped	Aunt	Mubir
621212 2712367222	Yasmin Rasheed	+920222541	F Pregnant	Grand Mother	Ahsan
621212 2712367222	Yasmin Rasheed	+920222541	F Pregnant	Grand Mother	Aleena
125862 2712367214	Ahmed Naseem	+924577741	M	Uncle	Asad
125862 2712367214	Ahmed Naseem	+924577741	M	Uncle	Sara
717279 2712367216	Tufail Murtaza	+927565541	M	Grand Father	Mujtaba
717279 2712367216	Tufail Murtaza	+927565541	M	Grand Father	Aneesha
715856 2712367218	Zorab Tarar	+929815339	M Handicapped	Uncle	Umar
715856 2712367218	Zorab Tarar	+929815339	M Handicapped	Uncle	Asim
612255 2712367220	Nagina Sheikh	+923569541	F	Aunt	Anwar
612255 2712367220	Nagina Sheikh	+923569541	F	Aunt	Aima
621212 2712367222	Yasmin Rasheed	+920222541	F Pregnant	Grand Mother	Tayyab

21 rows selected.

QUERY 4 - A LIST OF ALL PARENTS AND THEIR CHILDREN

```
select m.motherid,m.mname MOTHER_NAME,f.fatherid,f.fname  
FATHER_NAME,s.sname CHILD_NAME
```

```
from mother m,father f,student s
```

```
where m.motherid(+)=s.motherid
```

```
and f.fatherid(+)=s.fatherid;
```

```
SQL> select m.motherid,m.mname MOTHER_NAME,f.fatherid,f.fname FATHER_NAME,s.sname CHILD_NAME  
2 from mother m,father f,student s  
3 where m.motherid(+)=s.motherid  
4 and f.fatherid(+)=s.fatherid;
```

MOTHERID	MOTHER_NAME	FATHERID	FATHER_NAME	CHILD_NAME
171509	Amna	717172	Dildar Khan	Qadeer
171582	Zulaika			Ahsan
171582	Zulaika			Aleena
172217	Emaan	158912	Ghulam Ali	Saad
172217	Emaan	158912	Ghulam Ali	Hayat
172217	Emaan	158912	Ghulam Ali	Maryam
172217	Emaan	158912	Ghulam Ali	Maria
191151	Maham	717172	Dildar Khan	Sobhan
181215	Halima	525150	Moiz Butt	Almira
111566	Marrium	889988	Haider Butt	Hamza
111521	Izza			Asad
111521	Izza			Sara
227820	Amen	221212	Maaz Khan	Mubir
178911	Tahira	211152	Ejaz Khan	Hamza
				Mujtaba
				Areasha
		722152	Mohsin Abbasi	Aima
		221221	Iftakhar Niazi	Anwar
		221912	Ghayur Ahmed	Umar
		221912	Ghayur Ahmed	Asim
		221912	Ghayur Ahmed	Tayyab

```
21 rows selected.
```


QUERY 5 - A LIST OF ALL STUDENTS WITH SIBLINGS TAKING CLASSES GROUPED BY CLASS

create view registered_students as

select DISTINCT r.rollno,r.rclass,s.sname,s.fatherid,s.motherid

from registration r,student s

where r.rollno=s.rollno;

select DISTINCT rr.rollno,rr.rclass,rr.sname STUDENT,rv.sname SIBLING

from registered_students rr,registered_students rv

where (rr.fatherid=rv.fatherid and rr.rollno!=rv.rollno)

OR (rr.motherid=rv.motherid and rr.rollno!=rv.rollno)

order by rr.rclass;

```
SQL> create view registered_students as
  2  select DISTINCT r.rollno,r.rclass,s.sname,s.fatherid,s.motherid
  3  from registration r,student s
  4  where r.rollno=s.rollno;
```

View created.

```
SQL> select DISTINCT rr.rollno,rr.rclass,rr.sname STUDENT,rv.sname SIBLING
  2  from registered_students rr,registered_students rv
  3  where (rr.fatherid=rv.fatherid and rr.rollno!=rv.rollno)
  4  OR (rr.motherid=rv.motherid and rr.rollno!=rv.rollno)
  5  order by rr.rclass;
```

ROLLNO	RCLASS	STUDENT	SIBLING
1801	1	Ahsan	Aleena
1802	1	Aleena	Ahsan
1706	2	Hayat	Maria
1706	2	Hayat	Maryam
1707	3	Maryam	Hayat
1707	3	Maryam	Maria
1803	4	Asad	Sara
1804	4	Sara	Asad
2201	4	Tayyab	Asim
2201	4	Tayyab	Umar
1709	5	Maria	Hayat
1709	5	Maria	Maryam
1910	5	Umar	Asim
1910	5	Umar	Tayyab
1709	6	Maria	Hayat
1709	6	Maria	Maryam
1911	6	Asim	Tayyab
1911	6	Asim	Umar

18 rows selected.

QUERY 6 - LIST OF STUDENTS HAVE BEEN ASSIGNED TO A NEW CLASS IN GIVEN TIME SPAN

update registration

set rclass='6'

where rollno='1910'

and cid='MM-02';

select DISTINCT s.*

from student s,

(select r1.rollno

from registration_history r1

where r1.rNo!='1') t

where s.rollno=t.rollno

and EntryDate between '01-JULY-19' and '01-JULY-20';

```
SQL> update registration
```

```
2 set rclass='6'
```

```
3 where rollno='1910'
```

```
4 and cid='MM-02';
```

```
1 row updated.
```

```
SQL> select DISTINCT s.*
```

```
2 from student s,
```

```
3 (select r1.rollno
```

```
4 from registration_history r1
```

```
5 where r1.rNo!='1') t
```

```
6 where s.rollno=t.rollno
```

```
7 and EntryDate between '01-JULY-19' and '01-JULY-20';
```

ROLLNO	MOTHERID	FATHERID	GID SNAME	G DOB	AGE HOUSE	STREET	CITY	PHOTO	ENTRYDATE
1910		221912	715856 Umar	M 11-MAY-08	12 11-91	DHA	ISB	p17.png	01-JUN-20

QUERY 7 - A list of all new students in given time span grouped by class

select * from student

where EntryDate between '01-JULY-19' and '01-JULY-20';

```
SQL> select * from student
```

```
2 where EntryDate between '01-JULY-19' and '01-JULY-20';
```

ROLLNO	MOTHERID	FATHERID	GID SNAME	G DOB	AGE HOUSE	STREET	CITY	PHOTO	ENTRYDATE
1701	171509	717172	615155 Qadeer	M 01-FEB-15	5 NA-154	7th road	RWP	p1.png	01-JUN-20
1702	172217	158912	278215 Saad	M 01-SEP-18	2 26/17	Harley Street	RWP	p2.png	01-JUN-20
1704	191151	717172	615155 Sobhan	M 05-SEP-18	2 NA-154	7th road	RWP	p4.png	01-JUN-20
1705	181215	525150	818252 Almira	F 25-FEB-08	12 19,15	Saddar	RWP	p5.png	01-JUN-20
1706	172217	158912	278215 Hayat	M 22-MAR-15	5 26/17	Harley Street	RWP	p6.png	01-JUN-20
1707	172217	158912	112299 Maryam	F 25-JAN-12	8 26/17	Harley Street	RWP	p7.png	01-JUN-20
1708	111566	889988	818252 Hamza	M 15-SEP-13	7 19,15	Saddar	RWP	p8.png	01-JUN-20
1801	171582		621212 Ahsan	M 21-MAY-17	3 DK-56	Ali Street	RWP	p11.png	01-JUN-20
1802	171582		621212 Aleena	F 02-APR-16	4 DK-56	Ali Street	RWP	p12.png	01-JUN-20
1803	111521		125862 Asad	M 21-JAN-11	9 H#101	F-7/2	ISB	p13.png	01-JUN-20
1804	111521		125862 Sara	F 21-APR-10	10 H#101	F-7/2	ISB	p14.png	01-JUN-20
1902			717279 Areesha	F 15-JUL-08	12 NA-91	A Block	RWP	p16.png	01-JUN-20
1910		221912	715856 Umar	M 11-MAY-08	12 11-91	DHA	ISB	p17.png	01-JUN-20
1111		221221	612255 Anwar	M 01-JAN-14	6 DK/121	E-Block	RWP	p19.png	01-JUN-20
1112		722152	612255 Aima	F 07-MAR-12	8 C-91	Bahria	RWP	p20.png	01-JUN-20
2201		221912	621212 Tayyab	M 01-JUN-10	10 E-8989	Saidpur Rd	RWP	p21.png	01-JUN-20

16 rows selected.

QUERY 8 - A list of all new parents in given time span (include children info)

```
select m.motherid,m.mname MOTHER_NAME,f.fatherid,f.fname
FATHER_NAME,s.sname CHILD_NAME,s.EntryDate
from mother m,father f,student s
where m.motherid(+)=s.motherid
and f.fatherid(+)=s.fatherid
and s.EntryDate between '01-JULY-19' and '01-JULY-20';
```

```
SQL> select m.motherid,m.mname MOTHER_NAME,f.fatherid,f.fname FATHER_NAME,s.sname CHILD_NAME,s.EntryDate
2 from mother m,father f,student s
3 where m.motherid(+)=s.motherid
4 and f.fatherid(+)=s.fatherid
5 and s.EntryDate between '01-JULY-19' and '01-JULY-20';
```

MOTHERID	MOTHER_NAME	FATHERID	FATHER_NAME	CHILD_NAME	ENTRYDATE
171509	Amna	717172	Dildar Khan	Qadeer	01-JUN-20
171582	Zulaika			Ahsan	01-JUN-20
171582	Zulaika			Aleena	01-JUN-20
172217	Emaan	158912	Ghulam Ali	Saad	01-JUN-20
172217	Emaan	158912	Ghulam Ali	Hayat	01-JUN-20
172217	Emaan	158912	Ghulam Ali	Maryam	01-JUN-20
191151	Maham	717172	Dildar Khan	Sobhan	01-JUN-20
181215	Halima	525150	Moiz Butt	Almira	01-JUN-20
111566	Marrium	889988	Haider Butt	Hamza	01-JUN-20
111521	Izza			Asad	01-JUN-20
111521	Izza			Sara	01-JUN-20
				Areesha	01-JUN-20
		722152	Mohsin Abbasi	Aima	01-JUN-20
		221221	Iftakhar Niazi	Anwar	01-JUN-20
		221912	Ghayur Ahmed	Umar	01-JUN-20
		221912	Ghayur Ahmed	Tayyab	01-JUN-20

16 rows selected.

QUERY 9 - LIST OF PARENTS THAT ARE EARLY INTRODUCERS

```
select m.motherid,m.mname,f.fatherid,f.fname  
from mother m,father f,(select * from student where age< 3) s  
where m.motherid(+)=s.motherid  
and f.fatherid(+)=s.fatherid;
```

```
SQL> select m.motherid,m.mname,f.fatherid,f.fname  
2  from mother m,father f,(select * from student where age< 3) s  
3  where m.motherid(+)=s.motherid  
4  and f.fatherid(+)=s.fatherid;
```

MOTHERID	MNAME	FATHERID	FNAME
172217	Emaan	158912	Ghulam Ali
191151	Maham	717172	Dildar Khan

```
SQL>
```

QUERY 10 - Class change history of given student IN A GIVEN COURSE

select rclass,sec

from registration_history

where rollno='1910' and cid='MM-02';

```
SQL> select rclass,sec
      2  from registration_history
      3  where rollno='1910' and cid='MM-02';
```

RCLASS	SEC
5	B
6	B