

CS204 Database Systems

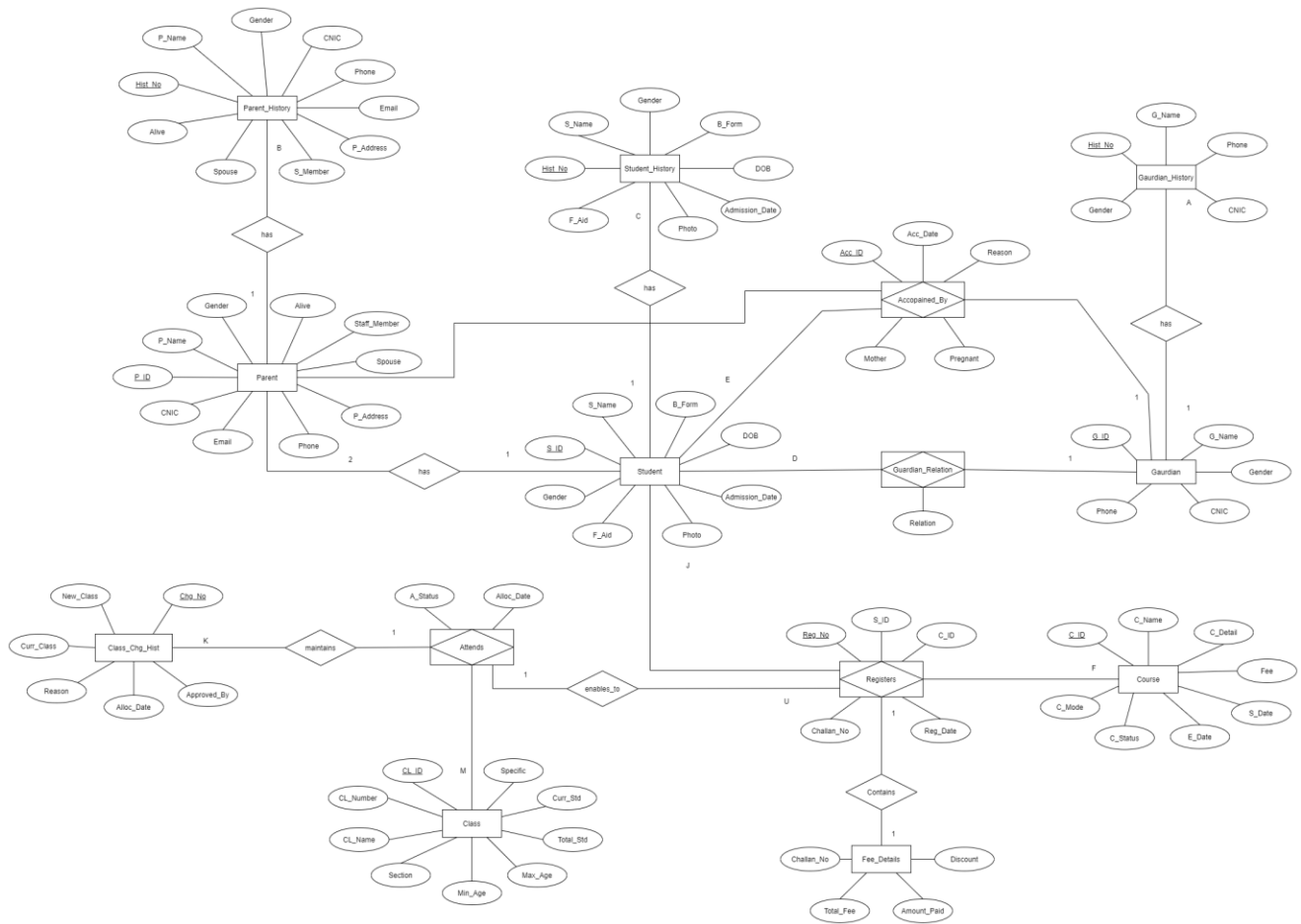
Semester Project

Hamarey Bachchey System

Group Members

| | |
|---------------|----------|
| Humayun Afzal | 18I-0738 |
| Aitzaz Ahmad | 18I-0589 |
| Hassan Riaz | 18I-0580 |

ER Diagram



Schema Diagram

Parent History:

| | | | | | | | | | | |
|------|---------|--------|--------|------|-------|-------|-----------|--------|----------|-------|
| P_ID | Hist_No | P_Name | Gender | CNIC | Email | Phone | P_Address | Spouse | S_Member | Alive |
|------|---------|--------|--------|------|-------|-------|-----------|--------|----------|-------|

Parent:

| | | | | | | | | | |
|-------------|--------|--------|------|-------|-------|-----------|--------|----------|-------|
| <u>P_ID</u> | P_Name | Gender | CNIC | Email | Phone | P_Address | Spouse | S_Member | Alive |
|-------------|--------|--------|------|-------|-------|-----------|--------|----------|-------|

Guardian_History:

| | | | | | |
|------|---------|--------|--------|------|-------|
| G_ID | Hist_No | G_Name | Gender | CNIC | Phone |
|------|---------|--------|--------|------|-------|

Guardian:

| | | | | |
|-------------|--------|--------|------|-------|
| <u>G_ID</u> | G_Name | Gender | CNIC | Phone |
|-------------|--------|--------|------|-------|

Guardian_Relation:

| | | |
|------|------|----------|
| S_ID | G_ID | Relation |
|------|------|----------|

Accompanied_By

| | | | | | | |
|--------|------|------|--------|----------|--------|----------|
| Acc_No | S_ID | G_ID | Reason | Pregnant | Mother | Acc_Date |
|--------|------|------|--------|----------|--------|----------|

Student_History:

| | | | | | | | | | | |
|------|---------|--------|--------|-----|--------|------|------|----------------|-------|-------|
| S_ID | Hist_No | S_Name | Gender | DOB | B_Form | M_ID | F_ID | Admission_Date | F_Aid | Photo |
|------|---------|--------|--------|-----|--------|------|------|----------------|-------|-------|

Student:

| | | | | | | | | | |
|-------------|--------|--------|-----|--------|------|------|----------------|-------|-------|
| <u>S_ID</u> | S_Name | Gender | DOB | B_Form | M_ID | F_ID | Admission_Date | F_Aid | Photo |
|-------------|--------|--------|-----|--------|------|------|----------------|-------|-------|

Course

| | | | | | | | |
|-------------|--------|----------|-----|--------|--------|----------|--------|
| <u>C_ID</u> | C_Name | C_Detail | Fee | S_Date | E_Date | C_Status | C_Mode |
|-------------|--------|----------|-----|--------|--------|----------|--------|

Registers

| | | | | |
|---------------|------|------|------------|----------|
| <u>Reg_No</u> | S_ID | C_ID | Challan_No | Reg_Date |
|---------------|------|------|------------|----------|

Fee_Details

| | | | | |
|--------|------------|-----------|-------------|----------|
| Reg_No | Challan_No | Total_Fee | Amount_Paid | Discount |
|--------|------------|-----------|-------------|----------|

Attends

| | | | |
|--------|-------|------------|----------|
| Reg_No | CL_ID | Alloc_Date | A_Status |
|--------|-------|------------|----------|

Class

| | | | | | | | | |
|--------------|-----------|---------|---------|---------|---------|-----------|----------|----------|
| <u>CL_ID</u> | CL_Number | CL_Name | Section | Min_Age | Max_Age | Total_Std | Curr_Std | Specific |
|--------------|-----------|---------|---------|---------|---------|-----------|----------|----------|

Class_Chg_Hist

| | | | | | | |
|--------|--------|------------|-----------|------------|--------|-------------|
| Reg_No | Chg_No | Curr_Class | New_Class | Alloc_Date | Reason | Approved_By |
|--------|--------|------------|-----------|------------|--------|-------------|

Creation Script

```
-- Insertion and Deletion of tables script

-- Deleting all tables/entities
DROP TABLE Parent CASCADE CONSTRAINTS;
DROP TABLE Parent_History CASCADE CONSTRAINTS;
DROP TABLE Guardian CASCADE CONSTRAINTS;
DROP TABLE Guardian_History CASCADE CONSTRAINTS;
DROP TABLE Student CASCADE CONSTRAINTS;
DROP TABLE Student_History CASCADE CONSTRAINTS;
DROP TABLE Guardian_Relation CASCADE CONSTRAINTS;
DROP TABLE Accompanied_By CASCADE CONSTRAINTS;
DROP TABLE Course CASCADE CONSTRAINTS;
DROP TABLE Registers CASCADE CONSTRAINTS;
DROP TABLE Fee_Details CASCADE CONSTRAINTS;
DROP TABLE Class CASCADE CONSTRAINTS;
DROP TABLE Attends CASCADE CONSTRAINTS;
DROP TABLE Class_Chg_Hist CASCADE CONSTRAINTS;

-- Deleting all sequences
DROP SEQUENCE parent_id;
DROP SEQUENCE guardian_id;
DROP SEQUENCE accompanied_id;
DROP SEQUENCE student_id;
DROP SEQUENCE course_id;
DROP SEQUENCE class_id;
DROP SEQUENCE reg_num;

-- cleaning recycle bin
purge recyclebin;

-- Creation of Tables with Constraints
-- Parent Entity
CREATE TABLE Parent
(
    P_ID            NUMBER,
    P_Name          VARCHAR2(30),
    Gender          VARCHAR2(1),
    CNIC            VARCHAR2(20) UNIQUE NOT NULL,
    Email           VARCHAR2(30),
    Phone           VARCHAR2(20),
    P_Address       VARCHAR2(30),
    Spouse          NUMBER,
    S_Member        NUMBER,
    Alive           NUMBER
);

-- Parent: Primary Key
```

```

ALTER TABLE Parent
ADD CONSTRAINTS
parent_primary_key PRIMARY KEY(P_ID);

-- Auto Increment Primary Key: P_ID
-- Sequence for Auto Increment
CREATE SEQUENCE parent_id;

-- Trigger for Auto Increment
CREATE OR REPLACE TRIGGER parent_on_insert
    BEFORE INSERT ON Parent
    FOR EACH ROW
BEGIN
    IF :new.P_ID IS NULL THEN
        SELECT parent_id.nextval
        INTO :new.P_ID
        FROM dual;
    END IF;
END;
/

-- Parent History Entity
CREATE TABLE Parent_History
(
    P_ID          NUMBER,
    Hist_No       NUMBER,
    P_Name        VARCHAR2(30),
    Gender        VARCHAR2(1),
    CNIC          VARCHAR2(20),
    Email         VARCHAR2(30),
    Phone         VARCHAR2(20),
    P_Address     VARCHAR2(30),
    Spouse        NUMBER,
    S_Member      NUMBER,
    Alive         NUMBER
);

-- Parent History: Primary Key
ALTER TABLE Parent_History
ADD CONSTRAINTS
parent_hist_primary_key PRIMARY KEY(P_ID, Hist_No);

-- Auto Increment: P_Hist_ID
-- Trigger to Auto Increment P_Hist_No based on P_ID
CREATE OR REPLACE TRIGGER parent_on_update
    BEFORE UPDATE ON Parent
    FOR EACH ROW
DECLARE
    hist Parent_History.Hist_No%TYPE;

```

```

BEGIN
    BEGIN
        SELECT max( ph.Hist_No )
        INTO hist
        FROM Parent_History ph
        WHERE ph.P_ID = :new.P_ID;
    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            hist := NULL;
    END;
    IF hist IS NULL THEN
        hist := 1;
    ELSE
        hist := hist + 1;
    END IF;
    INSERT INTO Parent_History VALUES( :old.P_ID, hist, :old.P_Name, :old.Gender, :old.CNIC,
:old.Email, :old.Phone, :old.P_Address, :old.Spouse, :old.S_Member, :old.Alive );
END;
/

-- Guardian Entity
CREATE TABLE Guardian
(
    G_ID          NUMBER,
    G_Name        VARCHAR2(30),
    Gender        VARCHAR2(1),
    CNIC          VARCHAR2(20) UNIQUE NOT NULL,
    Phone         VARCHAR2(20)
);

-- Guardian: Primary Key
ALTER TABLE Guardian
ADD CONSTRAINTS
guardian_primary_key PRIMARY KEY(G_ID);

-- Auto Increment for Primary Key: G_ID
-- Sequence for Auto Increment
CREATE SEQUENCE guardian_id;

-- Trigger for Auto Increment
CREATE OR REPLACE TRIGGER guardian_on_insert
BEFORE INSERT ON Guardian
FOR EACH ROW
BEGIN
    IF :new.G_ID IS NULL THEN
        SELECT guardian_id.nextval
        INTO :new.G_ID
        FROM dual;
    END IF;

```

```

END;
/

-- Guardian History Entity
CREATE TABLE Guardian_History
(
    G_ID            NUMBER,
    Hist_No         NUMBER,
    G_Name          VARCHAR2(30),
    Gender          VARCHAR2(1),
    CNIC            VARCHAR2(20),
    Phone           VARCHAR2(20)
);

-- Guardian History: Primary Key
ALTER TABLE Guardian_History
ADD CONSTRAINTS
guardian_hist_primary_key PRIMARY KEY(G_ID, Hist_No);

-- Auto Increment: Hist_No
-- Trigger to Auto Increment Hist_No based on G_ID
CREATE OR REPLACE TRIGGER guardian_on_update
BEFORE UPDATE ON Guardian
FOR EACH ROW
DECLARE
    hist Guardian_History.Hist_No%TYPE;
BEGIN
    BEGIN
        SELECT max( g.Hist_No )
        INTO hist
        FROM Guardian_History g
        WHERE g.G_ID = :new.G_ID;

    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            hist := NULL;
    END;

    IF hist IS NULL THEN
        hist := 1;
    ELSE
        hist := hist + 1;
    END IF;

    INSERT INTO Guardian_History VALUES( :old.G_ID, hist, :old.G_Name, :old.Gender, :old.CNIC
, :old.Phone );
END;
/

```

```

-- Student Entity
CREATE TABLE Student
(
    S_ID          NUMBER,
    S_Name        VARCHAR2(30),
    Gender        VARCHAR2(1),
    DOB           Date,
    B_Form        VARCHAR2(20) UNIQUE NOT NULL,
    M_ID          NUMBER,
    F_ID          NUMBER,
    Admission_Date Date,
    F_Aid         NUMBER,
    Photo         VARCHAR2(50)
);

-- Student Primary Key
ALTER TABLE Student
ADD CONSTRAINTS
student_primary_key PRIMARY KEY(S_ID);

-- Mother ID
-- Student: M_ID Foreign Key
ALTER TABLE Student
ADD CONSTRAINTS
student_mother_foreign_key FOREIGN KEY (M_ID)
REFERENCES Parent(P_ID);

-- Father ID
-- Student: F_ID Foreign Key
ALTER TABLE Student
ADD CONSTRAINTS
student_father_foreign_key FOREIGN KEY (F_ID)
REFERENCES Parent(P_ID);

-- Auto Increment Primary Key: S_ID
-- Sequence for Auto Increment
CREATE SEQUENCE student_id;

-- Trigger for Auto Increment
CREATE OR REPLACE TRIGGER student_on_insert
BEFORE INSERT ON Student
FOR EACH ROW
BEGIN
    IF :new.S_ID IS NULL THEN
        SELECT student_id.nextval
        INTO :new.S_ID
        FROM dual;
    END IF;
END;
/

```



```

-- Student History Entity
CREATE TABLE Student_History
(
    S_ID            NUMBER,
    Hist_No         NUMBER,
    S_Name          VARCHAR2(30),
    Gender          VARCHAR2(1),
    DOB             Date,
    B_Form          VARCHAR2(20),
    M_ID           NUMBER,
    F_ID           NUMBER,
    Admission_Date  Date,
    F_Aid          Number,
    Photo           VARCHAR2(50)
);

-- Student History: Primary Key
ALTER TABLE Student_History
ADD CONSTRAINTS
std_hist_primary_key PRIMARY KEY(S_ID, Hist_No);

-- Auto Increment: Hist_No
-- Trigger to Auto Increment Hist_No based upon S_ID
CREATE OR REPLACE TRIGGER student_on_update
BEFORE UPDATE ON Student
FOR EACH ROW
DECLARE
    hist Student_History.Hist_No%TYPE;
BEGIN
    BEGIN
        SELECT max( s.Hist_No )
        INTO hist
        FROM Student_History s
        WHERE s.S_ID = :new.S_ID;
    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            hist := NULL;
    END;
    IF hist IS NULL THEN
        hist := 1;
    ELSE
        hist := hist + 1;
    END IF;

    INSERT INTO Student_History VALUES( :old.S_ID, hist, :old.S_Name, :old.Gender, :old.DOB,
:old.B_Form, :old.M_ID, :old.F_ID, :old.Admission_Date, :old.F_Aid, :old.Photo );
END;
/

```

```

-- Guardian Relation Entity
CREATE TABLE Guardian_Relation
(
    S_ID          NUMBER,
    G_ID          NUMBER,
    Relation      VARCHAR2(15)
);

-- Guardian_Relation: S_ID Foreign Key
ALTER TABLE Guardian_Relation
ADD CONSTRAINTS
gr_student_foreign_key FOREIGN KEY (S_ID)
REFERENCES Student(S_ID);

-- Guardian_Relation: G_ID Foreign Key
ALTER TABLE Guardian_Relation
ADD CONSTRAINTS
gr_guardian_foreign_key FOREIGN KEY (G_ID)
REFERENCES Guardian(G_ID);

-- Guardian Relation: Primary Key
ALTER TABLE Guardian_Relation
ADD CONSTRAINTS
gr_primary_key PRIMARY KEY(S_ID, G_ID);

-- Accompanied_By Entity
CREATE TABLE Accompanied_By
(
    Acc_No        Number,
    S_ID          NUMBER,
    G_ID          NUMBER,
    Reason        VARCHAR2(50) NOT NULL,
    Pregnant      NUMBER NOT NULL,
    Mother        NUMBER NOT NULL,
    Acc_Date      Date
);

-- Accompanied_By: S_ID Foreign Key
ALTER TABLE Accompanied_By
ADD CONSTRAINTS
acc_sid_foreign_key FOREIGN KEY (S_ID)
REFERENCES Student(S_ID);

-- Accompanied By: Primary Key
ALTER TABLE Accompanied_By
ADD CONSTRAINTS
acc_primary_key PRIMARY KEY( Acc_No );

```

```

-- Auto Increment: Acc_No
-- Sequence for Auto Increment
CREATE SEQUENCE accompanied_id;

-- Trigger for Auto Increment
CREATE OR REPLACE TRIGGER accompanied_on_insert
    BEFORE INSERT ON Accompanied_By
    FOR EACH ROW
BEGIN
    IF :new.Acc_No IS NULL THEN
        SELECT accompanied_id.nextval
        INTO :new.Acc_No
        FROM dual;
    END IF;
END;
/

-- Course Entity
CREATE TABLE Course
(
    C_ID          NUMBER,
    C_Name        VARCHAR2(50),
    C_Detail      VARCHAR2(50),
    Fee           NUMBER,
    S_Date        Date,
    E_Date        Date,
    C_Status      NUMBER,
    C_Mode        NUMBER
);

-- Course: Primary Key
ALTER TABLE Course
ADD CONSTRAINTS
course_primary_key PRIMARY KEY( C_ID );

-- Auto Key for Course: C_ID
CREATE SEQUENCE course_id;
CREATE OR REPLACE TRIGGER course_on_insert
    BEFORE INSERT ON Course
    FOR EACH ROW
BEGIN
    IF :new.C_ID IS NULL THEN
        SELECT course_id.nextval
        INTO :new.C_ID
        FROM dual;
    END IF;
END;
/

```

```

-- Class Entity
CREATE TABLE Class
(
    CL_ID            NUMBER,
    CL_Number        NUMBER,
    CL_Name          VARCHAR2(15),
    Section          VARCHAR2(1),
    Min_Age          NUMBER,
    Max_Age          NUMBER,
    Total_Std        NUMBER,
    Curr_Std         NUMBER,
    Specific          VARCHAR2(1)
);

-- Class: Primary Key
ALTER TABLE Class
ADD CONSTRAINTS
class_primary_key PRIMARY KEY( CL_ID );

-- Auto Key for Course: C_ID
CREATE SEQUENCE class_id;
CREATE OR REPLACE TRIGGER class_on_insert
    BEFORE INSERT ON Class
    FOR EACH ROW
BEGIN
    IF :new.CL_ID IS NULL THEN
        SELECT class_id.nextval
        INTO :new.CL_ID
        FROM dual;
    END IF;
END;
/

-- Registers Entity
CREATE TABLE Registers
(
    Reg_No           NUMBER,
    S_ID             NUMBER,
    C_ID             NUMBER,
    Challan_No       VARCHAR2(15),
    Reg_Date         Date
);

-- Registers: Primary Key
ALTER TABLE Registers
ADD CONSTRAINTS
reg_primary_key PRIMARY KEY( Reg_No );

```

```

-- Registers: S_ID Foreign Key
ALTER TABLE Registers
ADD CONSTRAINTS
reg_sid_foreign_key FOREIGN KEY (S_ID)
REFERENCES Student(S_ID);

-- Registers: C_ID Foreign Key
ALTER TABLE Registers
ADD CONSTRAINTS
reg_cid_foreign_key FOREIGN KEY (C_ID)
REFERENCES Course(C_ID);

-- Auto Key for Registers: Reg_No
CREATE SEQUENCE reg_num;
CREATE OR REPLACE TRIGGER registers_on_insert
BEFORE INSERT ON Registers
FOR EACH ROW
BEGIN
    IF :new.Reg_No IS NULL THEN
        SELECT reg_num.nextval
        INTO :new.Reg_No
        FROM dual;
    END IF;
END;
/

-- Fee_Details
CREATE TABLE Fee_Details
(
    Reg_No          Number,
    Challan_No      VARCHAR2(15),
    Total_Fee       NUMBER,
    Amount_Paid     NUMBER,
    Discount        NUMBER
);

-- Fee_Details: Challan No foreign Key
ALTER TABLE Fee_Details
ADD CONSTRAINTS
reg_foreign_key FOREIGN KEY (Reg_no)
REFERENCES Registers(Reg_No);

-- Fee Details: Primary Key
ALTER TABLE Fee_Details
ADD CONSTRAINTS
fee_primary_key PRIMARY KEY( Reg_No );

```

```

-- Attends Entity
CREATE TABLE Attends
(
    Reg_No          NUMBER,
    CL_ID           NUMBER,
    Alloc_Date      Date,
    A_Status        NUMBER
);

-- Attends: Cl_ID Foreign Key
ALTER TABLE Attends
ADD CONSTRAINTS
att_clid_foreign_key FOREIGN KEY (CL_ID)
REFERENCES Class(CL_ID);

-- Attends: Primary Key
ALTER TABLE Attends
ADD CONSTRAINTS
att_primary_key PRIMARY KEY( Reg_No );

-
- Attends: Trigger to increment current number of students in the class when a new record is
entered
CREATE OR REPLACE TRIGGER attends_on_insert
AFTER INSERT ON Attends
FOR EACH ROW
DECLARE
    Num Class.Curr_Std%TYPE;
BEGIN
    BEGIN
        SELECT c.Curr_Std
        INTO Num
        FROM Class c
        WHERE c.CL_ID = :new.CL_ID;
    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            Num := NULL;
    END;
    IF Num IS NULL THEN
        Num := 1;
    ELSE
        Num := Num + 1;
    END IF;

    IF NUM >= 0 THEN
        UPDATE Class c
        SET c.Curr_Std = Num
        WHERE c.CL_ID = :new.CL_ID;
    END IF;
END;

```

```

/

-
- Attends: trigger to decrement the number of students in class when a student leaves or updates the record
CREATE OR REPLACE TRIGGER attends_on_update
AFTER UPDATE OR DELETE ON Attends
FOR EACH ROW
DECLARE
    Num Class.Curr_Std%TYPE;
BEGIN
    BEGIN
        SELECT c.Curr_Std
        INTO Num
        FROM Class c
        WHERE c.CL_ID = :old.CL_ID;
    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            Num := NULL;
    END;
    IF Num IS NULL THEN
        Num := 0;
    ELSE
        Num := Num - 1;

        IF Num >= 0 AND :old.A_Status = 0 THEN
            UPDATE Class c
            SET c.Curr_Std = Num
            WHERE c.CL_ID = :old.CL_ID;
        END IF;

        END IF;
END;
/

-- Class_Chg_Hist Entity
CREATE TABLE Class_Chg_Hist
(
    Reg_No          NUMBER,
    Chg_No          NUMBER,
    Curr_Class      NUMBER,
    New_Class       NUMBER,
    Alloc_Date      Date,
    Reason          VARCHAR2(20),
    Approved_By     VARCHAR2(20)
);

-- Class_Chg_Hist: Primary Key
ALTER TABLE Class_Chg_Hist

```

```
ADD CONSTRAINTS
cch_primary_key PRIMARY KEY( Reg_No, Chg_No );

-- Class Change History: Trigger to increment change number
CREATE OR REPLACE TRIGGER chg_on_insert
BEFORE INSERT ON Class_Chg_Hist
FOR EACH ROW
DECLARE
    hist Class_Chg_Hist.Chg_No%TYPE;
BEGIN
    BEGIN
        SELECT max( s.Chg_No )
        INTO hist
        FROM Class_Chg_Hist s
        WHERE s.Reg_No = :new.Reg_No;
    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            hist := NULL;
    END;
    IF hist IS NULL THEN
        hist := 1;
    ELSE
        hist := hist + 1;
    END IF;

    :new.Chg_No := hist;

END;
/

commit;
```


DataSet

```
-- Dataset Script

-- Total Class Records: 14
-- Class 1
INSERT INTO Class VALUES(NULL, 1, 'Unbeatable', 'A', 3, 4, 5, 0, 'N');
INSERT INTO Class VALUES(NULL, 1, 'Players', 'B', 3, 4, 5, 0, 'N');
-- Class 2
INSERT INTO Class VALUES(NULL, 2, 'Tigers', 'A', 5, 6, 5, 0, 'N');
INSERT INTO Class VALUES(NULL, 2, 'Minion', 'B', 5, 6, 5, 0, 'N');
-- Class 3
INSERT INTO Class VALUES(NULL, 3, 'Friends', 'A', 7, 8, 5, 0, 'N');
INSERT INTO Class VALUES(NULL, 3, 'Bosses', 'B', 7, 8, 5, 0, 'N');
-- Class 4
INSERT INTO Class VALUES(NULL, 4, 'A_Team', 'A', 9, 10, 5, 0, 'N');
INSERT INTO Class VALUES(NULL, 4, 'Dolphins', 'B', 9, 10, 5, 0, 'N');
-- Class 5
INSERT INTO Class VALUES(NULL, 5, 'Players', 'A', 11, 12, 5, 0, 'N');
INSERT INTO Class VALUES(NULL, 5, 'Kings', 'B', 11, 12, 5, 0, 'N');
-- Class 6
INSERT INTO Class VALUES(NULL, 6, 'Fantastic', 'A', 13, 14, 5, 0, 'N');
INSERT INTO Class VALUES(NULL, 6, 'Shield', 'B', 13, 14, 5, 0, 'N');
-- Class 7
INSERT INTO Class VALUES(NULL, 7, 'Champions', 'A', 15, 16, 5, 0, 'N');
INSERT INTO Class VALUES(NULL, 7, 'Royals', 'B', 15, 16, 5, 0, 'N');

-- Total Parent Record: 8
-- F1
INSERT INTO Parent VALUES( 50, 'Asad', 'M', '23433-8712973-8', 'asad653@gmail.com', '03578123452', 'Islamabad', 0, 0, 1 );
INSERT INTO Parent VALUES( 51, 'Maham', 'F', '67541-8972831-0', 'maham294@gmail.com', '03878757218', 'Islamabad', 50, 1, 1 );
-- F2
INSERT INTO Parent VALUES( 52, 'Umair', 'M', '45342-9189231-9', 'umair101@gmail.com', '03234257612', 'Lahore', 0, 0, 1);
INSERT INTO Parent VALUES( 53, 'Zoha', 'F', '98712-1232451-2', 'zoha1006@gmail.com', '03273541985', 'Lahore', 52, 0, 1);
-- F3
INSERT INTO Parent VALUES( 54, 'Usman', 'M', '65556-7871253-4', 'usman1676@gmail.com', '03441278542', 'Islamabad', 0, 0, 1 );
INSERT INTO Parent VALUES( 55, 'Neha', 'F', '83279-6724172-8', NULL, NULL, 'Islamabad', 54, 0, 0 );
-- F4
INSERT INTO Parent VALUES( 56, 'Arslan', 'M', '14432-7769234-8', 'arslan88@gmail.com', '03554128761', 'Karachi', 0, 1, 1);
INSERT INTO Parent VALUES( 57, 'Sadaf', 'F', '98120-9808642-3', 'sadafarslan282@gmail.com', '03452576541', 'Karachi', 56, 0, 1);
```

```

-- Update Commands to generate Parent History
UPDATE Parent SET Email = 'arslan7878@gmail.com' WHERE P_ID = 56;
UPDATE Parent SET Phone = '03558711288' WHERE P_ID = 51;

-- Total Child Record: 12
-- C1
INSERT INTO Student VALUES( 80, 'Mubashir', 'M', to_timestamp('28-JAN-04','DD-MON-RR HH.MI.SSXFF AM'), '56743-2346198-4', 51, 50, to_timestamp('13-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child1.jpg' );
INSERT INTO Student VALUES( 81, 'Afan', 'M', to_timestamp('21-JUN-05','DD-MON-RR HH.MI.SSXFF AM'), '87564-3423412-1', 51, 50, to_timestamp('13-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child2.jpg');
INSERT INTO Student VALUES( 82, 'Sana', 'F', to_timestamp('10-FEB-04','DD-MON-RR HH.MI.SSXFF AM'), '76512-9728192-2', 51, 50, to_timestamp('13-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child3.jpg');
INSERT INTO Student VALUES( 83, 'Zubair', 'M', to_timestamp('12-MAY-16','DD-MON-RR HH.MI.SSXFF AM'), '64523-8976512-9', 51, 50, to_timestamp('03-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child4.jpg');
-- C2
INSERT INTO Student VALUES( 84, 'Madiha', 'F', to_timestamp('02-APR-04','DD-MON-RR HH.MI.SSXFF AM'), '56398-9182310-6', 53, 52, to_timestamp('10-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child5.jpg');
INSERT INTO Student VALUES( 85, 'Daniel', 'M', to_timestamp('09-JUN-17','DD-MON-RR HH.MI.SSXFF AM'), '86542-8471920-2', 53, 52, to_timestamp('3-MAY-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child6.jpg');
INSERT INTO Student VALUES( 86, 'Hassan', 'M', to_timestamp('15-JAN-16','DD-MON-RR HH.MI.SSXFF AM'), '62735-7182372-8', 53, 52, to_timestamp('10-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child7.jpg');
-- C3
INSERT INTO Student VALUES( 87, 'Hanan', 'M', to_timestamp('07-MAR-17','DD-MON-RR HH.MI.SSXFF AM'), '98374-2873826-7', 55, 54, to_timestamp('21-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 1, 'child8.jpg' );
INSERT INTO Student VALUES( 88, 'Sohaib', 'M', to_timestamp('13-DEC-16','DD-MON-RR HH.MI.SSXFF AM'), '35214-8378672-2', 55, 54, to_timestamp('21-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 1, 'child9.jpg');
-- C4
INSERT INTO Student VALUES( 89, 'Sahil', 'M', to_timestamp('17-JUN-05','DD-MON-RR HH.MI.SSXFF AM'), '98653-9127638-4', 57, 56, to_timestamp('11-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child10.jpg');
INSERT INTO Student VALUES( 90, 'Amina', 'F', to_timestamp('22-MAY-17','DD-MON-RR HH.MI.SSXFF AM'), '12437-8965238-3', 57, 56, to_timestamp('11-JAN-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child11.jpg');
INSERT INTO Student VALUES( 91, 'Noor', 'F', to_timestamp('27-SEP-16','DD-MON-RR HH.MI.SSXFF AM'), '71232-8513243-6', 57, 56, to_timestamp('1-MAY-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 'child12.jpg' );

-- Update Command to generate Student History

```

```

UPDATE Student SET Photo = 'child13.jpg' WHERE S_ID = 89;

-- Guardians whose names were given in Admission
INSERT INTO Guardian VALUES( 201, 'Saad', 'M', '87654-6745320-8', '03452637516');
INSERT INTO Guardian VALUES( 202, 'Junaid', 'M', '67345-7812453-9', '03755342911');
INSERT INTO Guardian VALUES( 203, 'Usman', 'M', '65556-7871253-4', '03441278542');
INSERT INTO Guardian VALUES( 204, 'Qasim', 'M', '65342-7867510-2', '03986285401');
-- Guradian who record was inserted at the time of Admission as Accompanying Guardian
INSERT INTO Guardian VALUES( 205, 'Khadija', 'F', '66753-7645341-2', '03764592123');

-- Update Record to generate Guardian History
UPDATE Guardian SET Phone = '03675365712' WHERE G_ID = 204;

-- Guardian Relation Records: 12
INSERT INTO Guardian_Relation VALUES(80, 201, 'Grand Father' );
INSERT INTO Guardian_Relation VALUES(81, 201, 'Grand Father' );
INSERT INTO Guardian_Relation VALUES(82, 201, 'Grand Father' );
INSERT INTO Guardian_Relation VALUES(83, 201, 'Grand Father' );
INSERT INTO Guardian_Relation VALUES(84, 202, 'Uncle' );
INSERT INTO Guardian_Relation VALUES(85, 202, 'Uncle' );
INSERT INTO Guardian_Relation VALUES(86, 202, 'Uncle' );
INSERT INTO Guardian_Relation VALUES(87, 203, 'Father' );
INSERT INTO Guardian_Relation VALUES(88, 203, 'Father' );
INSERT INTO Guardian_Relation VALUES(89, 204, 'Grand Father' );
INSERT INTO Guardian_Relation VALUES(90, 204, 'Grand Father' );
INSERT INTO Guardian_Relation VALUES(91, 204, 'Grand Father' );

-- Total Accompanied By Records For kids: 7
INSERT INTO Accompanied_By VALUES( 240, 83, 51, '-', 0, 1, NULL);
INSERT INTO Accompanied_By VALUES( 241, 85, 53, '-', 0, 1, NULL);
INSERT INTO Accompanied_By VALUES( 242, 86, 53, '-', 0, 1, NULL);
INSERT INTO Accompanied_By VALUES( 243, 87, 205, '-', 0, 0, NULL);
INSERT INTO Accompanied_By VALUES( 244, 88, 205, '-', 0, 0, NULL);
INSERT INTO Accompanied_By VALUES( 245, 90, 57, '-', 0, 1, NULL);
INSERT INTO Accompanied_By VALUES( 246, 91, 57, '-', 0, 1, NULL);

-- Total Courses Records: 5
INSERT INTO Course VALUES( 130, 'Astronomy', 'Stars Satellites Space Galaxies information', 2
000, to_timestamp('10-APR-20','DD-MON-RR HH.MI.SSXFF AM'), to_timestamp('1-MAY-20','DD-MON-
RR HH.MI.SSXFF AM'), 1, 1);
INSERT INTO Course VALUES( 131, 'Art and Craft', 'Art using household things', 3000, to_times
tamp('27-SEP-20','DD-MON-RR HH.MI.SSXFF AM'), to_timestamp('27-SEP-20','DD-MON-
RR HH.MI.SSXFF AM'), 1, 1 );
INSERT INTO Course VALUES( 132, 'Robotics', 'making small robots', 3000, to_timestamp('27-
SEP-21','DD-MON-RR HH.MI.SSXFF AM'), to_timestamp('27-SEP-21','DD-MON-
RR HH.MI.SSXFF AM'), 1, 1);

```

```

INSERT INTO Course VALUES( 133, 'Art and Craft', 'Art on computer', 3000, to_timestamp('27-NOV-20','DD-MON-RR HH.MI.SSXFF AM'), to_timestamp('27-NOV-20','DD-MON-RR HH.MI.SSXFF AM'), 1, 1);
INSERT INTO Course VALUES( 134, 'Biology', 'brain, heart, bones related information', 2000, to_timestamp('10-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), to_timestamp('10-JUL-20','DD-MON-RR HH.MI.SSXFF AM'), 0, 0);

-- Total Registrations:
-- Registratios for Course 1: 10
INSERT INTO Registers VALUES( 150, 80, 130, 'J67564', to_timestamp('10-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 151, 81, 130, 'G56432', to_timestamp('3-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 152, 82, 130, 'Z76423', to_timestamp('4-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 153, 83, 130, 'S52372', to_timestamp('5-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 154, 84, 130, 'A67125', to_timestamp('5-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 155, 86, 130, 'F97442', to_timestamp('8-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 156, 87, 130, 'K98766', to_timestamp('7-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 157, 88, 130, 'P71524', to_timestamp('4-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 158, 89, 130, 'W32736', to_timestamp('4-APR-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 159, 90, 130, 'D23876', to_timestamp('9-APR-20','DD-MON-RR HH.MI.SSXFF AM') );

-- Total Fee_Details Records for Course 1: 10
INSERT INTO Fee_Details VALUES( 150, 'J67564', 2000, 0, 2000);
INSERT INTO Fee_Details VALUES( 151, 'G56432', 2000, 0, 2000);
INSERT INTO Fee_Details VALUES( 152, 'Z76423', 2000, 0, 2000);
INSERT INTO Fee_Details VALUES( 153, 'S52372', 2000, 0, 2000);
INSERT INTO Fee_Details VALUES( 154, 'A67125', 2000, 1600, 400);
INSERT INTO Fee_Details VALUES( 155, 'F97442', 2000, 1600, 400);
INSERT INTO Fee_Details VALUES( 156, 'K98766', 2000, 1000, 1000);
INSERT INTO Fee_Details VALUES( 157, 'P71524', 2000, 1000, 1000);
INSERT INTO Fee_Details VALUES( 158, 'W32736', 2000, 0, 2000);
INSERT INTO Fee_Details VALUES( 159, 'D23876', 2000, 0, 2000);

-- Total Attends Records for Course 1: 10
INSERT INTO Attends VALUES( 150, 13, to_timestamp('10-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);
INSERT INTO Attends VALUES( 151, 13, to_timestamp('3-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);
INSERT INTO Attends VALUES( 152, 13, to_timestamp('4-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);
INSERT INTO Attends VALUES( 153, 1, to_timestamp('5-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);

```

```

INSERT INTO Attends VALUES( 154, 13, to_timestamp('5-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);
INSERT INTO Attends VALUES( 155, 1, to_timestamp('8-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);
INSERT INTO Attends VALUES( 156, 1, to_timestamp('7-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);
INSERT INTO Attends VALUES( 157, 1, to_timestamp('4-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);
INSERT INTO Attends VALUES( 158, 14, to_timestamp('4-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);
INSERT INTO Attends VALUES( 159, 2, to_timestamp('9-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 1);

```

-- Generating Change Class History Record

```

UPDATE Attends SET CL_ID = 2 WHERE Reg_No = 156;
INSERT INTO Class_Chg_Hist VALUES(156, 1, 1, 2, to_timestamp('15-APR-20','DD-MON-RR HH.MI.SSXFF AM'), 'Misbehave', 'Azhar' );

```

-- Setting Current No. of Students = 0 for new Course

```

UPDATE Class
SET CURR_STD = 0;

```

-- Setting status of Courses Completed to 1 for new Course

```

UPDATE Attends a
SET A_Status = 1
WHERE Reg_No IN ( SELECT r.Reg_No FROM Registers r, Course c WHERE r.C_ID = c.C_ID AND c.E_Date < SYSDATE);

```

-- Total Registrations Records for Course 2: 11

```

INSERT INTO Registers VALUES( 166, 80, 134, 'E23878', to_timestamp('1-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 167, 82, 134, 'Q28367', to_timestamp('2-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 168, 83, 134, 'L29733', to_timestamp('2-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 169, 84, 134, 'E32487', to_timestamp('5-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 170, 85, 134, 'I23763', to_timestamp('5-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 171, 86, 134, 'M28733', to_timestamp('3-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 172, 87, 134, 'R32867', to_timestamp('31-MAY-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 173, 88, 134, 'U23873', to_timestamp('6-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 174, 89, 134, 'F78734', to_timestamp('5-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 175, 90, 134, 'N37287', to_timestamp('2-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );
INSERT INTO Registers VALUES( 176, 91, 134, 'W23878', to_timestamp('4-JUN-20','DD-MON-RR HH.MI.SSXFF AM') );

```

-- Total Fee_Details Records for Course 2: 11

```
INSERT INTO Fee_Details VALUES( 166, 'E23878', 3000, 0, 3000);
INSERT INTO Fee_Details VALUES( 167, 'Q28367', 3000, 0, 3000);
INSERT INTO Fee_Details VALUES( 168, 'L29733', 3000, 0, 3000);
INSERT INTO Fee_Details VALUES( 169, 'E32487', 3000, 2400, 600);
INSERT INTO Fee_Details VALUES( 170, 'I23763', 3000, 2400, 600);
INSERT INTO Fee_Details VALUES( 171, 'M28733', 3000, 2400, 600);
INSERT INTO Fee_Details VALUES( 172, 'R32867', 3000, 1500, 1500);
INSERT INTO Fee_Details VALUES( 173, 'U23873', 3000, 1500, 1500);
INSERT INTO Fee_Details VALUES( 174, 'F78734', 3000, 0, 3000);
INSERT INTO Fee_Details VALUES( 175, 'N37287', 3000, 0, 3000);
INSERT INTO Fee_Details VALUES( 176, 'W23878', 3000, 0, 3000);
```

-- Total Attends Records for Course 2: 11

```
INSERT INTO Attends VALUES( 166, 13, to_timestamp('1-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 167, 14, to_timestamp('2-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 168, 1, to_timestamp('2-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 169, 14, to_timestamp('5-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 170, 1, to_timestamp('5-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 171, 1, to_timestamp('3-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 172, 1, to_timestamp('31-MAY-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 173, 2, to_timestamp('6-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 174, 13, to_timestamp('5-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 175, 2, to_timestamp('2-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
INSERT INTO Attends VALUES( 176, 2, to_timestamp('4-JUN-20','DD-MON-RR HH.MI.SSXFF AM'), 0);
```

commit;

Table Description

Parent:

| | | | | |
|-----------|---------------|------------------|--------------|--|
| P_ID | Parent ID | PRIMARY KEY | NUMBER | Unique ID for each record of Parent |
| P_Name | Parent Name | | VARCHAR2(30) | Name of Parent |
| Gender | Gender | | VARCHAR2(1) | Gender of Parent |
| CNIC | CNIC Number | NOT NULL, UNIQUE | VARCHAR2(20) | CNIC Number of Parent |
| Email | Email Address | | VARCHAR2(30) | Email Address of Parent |
| Phone | Phone Number | | VARCHAR2(20) | Phone Number of Parent |
| P_Address | Home Address | | VARCHAR2(30) | Permanent Address of Parent |
| Spouse | Spouse ID | | NUMBER | Spouse ID incase of Mother |
| S_Member | Staff Member | | NUMBER | Whether Father or Mother is a staff member or not? |
| Alive | Alive | | NUMBER | Is Parent Alive or not? |

Parent_History:

| | | | | |
|-----------|----------------|-------------|--------------|--|
| P_ID | Parent ID | PRIMARY KEY | NUMBER | Unique ID for each record of Parent |
| Hist_No | History Number | PRIMARY KEY | NUMBER | Change number for a parent |
| P_Name | Parent Name | | VARCHAR2(30) | Name of Parent |
| Gender | Gender | | VARCHAR2(1) | Gender of Parent |
| CNIC | CNIC Number | | VARCHAR2(20) | CNIC Number of Parent |
| Email | Email Address | | VARCHAR2(30) | Email Address of Parent |
| Phone | Phone Number | | VARCHAR2(20) | Phone Number of Parent |
| P_Address | Home Address | | VARCHAR2(30) | Permanent Address of Parent |
| Spouse | Spouse ID | | NUMBER | Spouse ID incase of Mother |
| S_Member | Staff Member | | NUMBER | Whether Father or Mother is a staff member or not? |

| | | | | |
|-------|-------|--|--------|-------------------------|
| Alive | Alive | | NUMBER | Is Parent Alive or not? |
|-------|-------|--|--------|-------------------------|

Guardian:

| | | | | |
|--------|---------------|------------------|--------------|-----------------------------|
| G_ID | Guardian ID | PRIMARY KEY | NUMBER | Unique ID for each guardian |
| G_Name | Guardian Name | | VARCHAR2(30) | Name of Guardian |
| Gender | Gender | | VARCHAR2(1) | Gender of Guardian |
| CNIC | CNIC Number | NOT NULL, UNIQUE | VARCHAR2(20) | CNIC number of guardian |
| Phone | Phone Number | | VARCHAR2(20) | Phone number of guardian |

Guardian_History:

| | | | | |
|---------|----------------|-------------|--------------|-----------------------------------|
| G_ID | Guardian ID | PRIMARY KEY | NUMBER | Unique ID for each guardian |
| Hist_No | History Number | PRIMARY KEY | NUMBER | History/Change Number of guardian |
| G_Name | Guardian Name | | VARCHAR2(30) | Name of Guardian |
| Gender | Gender | | VARCHAR2(1) | Gender of Guardian |
| CNIC | CNIC Number | | VARCHAR2(20) | CNIC number of guardian |
| Phone | Phone Number | | VARCHAR2(20) | Phone number of guardian |

Student:

| | | | | |
|----------------|----------------|------------------|--------------|---|
| S_ID | Student ID | PRIMARY KEY | NUMBER | Unique ID for student |
| S_Name | Student Name | | VARCHAR2(30) | Student Name |
| Gender | Gender | | VARCHAR2(1) | Gender of Student |
| DOB | Date of Birth | | DATE | Date of Birth of Student |
| B_Form | B Form Number | NOT NULL, UNIQUE | VARCHAR2(20) | B Form Number of Student |
| M_ID | Mother ID | FOREIGN KEY | NUMBER | Mother ID of Student. Ref. P_ID in Parent |
| F_ID | Father ID | FOREIGN KEY | NUMBER | Father ID of Student. Ref. P_ID in Parent |
| Admission_Date | Admission Date | | DATE | Admission Date |

| | | | | |
|-------|---------------|--|--------------|-------------------------------------|
| F_Aid | Financial Aid | | NUMBER | Is Student on Financial Aid or not? |
| Photo | Photo | | VARCHAR2(50) | Name of the file of student's photo |

Student_History:

| | | | | |
|----------------|----------------|-------------|--------------|--|
| S_ID | Student ID | PRIMARY KEY | NUMBER | Unique ID for student |
| Hist_No | History Number | PRIMARY KEY | NUMBER | History/Change Number for a Student's record |
| S_Name | Student Name | | VARCHAR2(30) | Student Name |
| Gender | Gender | | VARCHAR2(1) | Gender of Student |
| DOB | Date of Birth | | DATE | Date of Birth of Student |
| B_Form | B Form Number | | VARCHAR2(20) | B Form Number of Student |
| M_ID | Mother ID | | NUMBER | Mother ID of Student |
| F_ID | Father ID | | NUMBER | Father ID of Student |
| Admission_Date | Admission Date | | DATE | Admission Date |
| F_Aid | Financial Aid | | NUMBER | Is Student on Financial Aid or not? |
| Photo | Photo | | VARCHAR2(50) | Name of the file of student's photo |

Guardian_Relation:

| | | | | |
|----------|---------------|--------------------------|--------------|--|
| G_ID | Guardian ID | PRIMARY KEY, FOREIGN KEY | NUMBER | Guardian ID. Ref. G_ID in Guardian Entity |
| S_ID | Student_ID | PRIMARY KEY, FOREIGN KEY | NUMBER | Student ID. Ref. S_ID in Student Entity |
| Relation | Relation Type | | VARCHAR2(15) | Relationship type like Grand Father, Father, Uncle |

Accompanied_By:

| | | | | |
|--------|-----------------|-------------|--------|--|
| Acc_No | Accompanying ID | PRIMARY KEY | NUMBER | Unique ID assigned to each guardian accompanying the child |
|--------|-----------------|-------------|--------|--|

| | | | | |
|----------|-------------------|-------------|--------------|---|
| S_ID | Student ID | FOREIGN KEY | NUMBER | Student ID. Ref. S_ID in Student |
| G_ID | Guardian ID | FOREIGN KEY | NUMBER | Guardian ID. Ref. G_ID in Guardain |
| Reason | Reason | NOT NULL | VARCHAR2(50) | Reason for mother not coming |
| Pregnant | Pregnant | NOT NULL | NUMBER | Is the accompanying guardian pregnant or not? |
| Mother | Mother | NOT NULL | NUMBER | Is the accompanying guardian mother? |
| Acc_Date | Accompanying Date | | DATE | Accompanying Date |

Course:

| | | | | |
|----------|------------------|-------------|--------------|--|
| C_ID | Course ID | PRIMARY KEY | NUMBER | Unique key assigned to each course |
| C_Name | Course Name | | VARCHAR2(50) | Course Name |
| C_Detail | Course Details | | VARCHAR2(50) | Details about course |
| Fee | Fee Amount | | NUMBER | Fee for the course |
| S_Date | Start Date | | DATE | Start date of the course |
| E_Date | End Date | | DATE | End date of the course |
| C_Status | Offer Status | | NUMBER | Is Course currently been offered? |
| C_Mode | Separate or Join | | NUMBER | Will classes be separate for students of higher classes? |

Class:

| | | | | |
|-----------|--------------|-------------|--------------|--------------------------|
| CL_ID | Class ID | PRIMARY KEY | NUMBER | Unique ID for each class |
| CL_Number | Class Number | | NUMBER | Class Actual Number |
| CL_Name | Class Name | | VARCHAR2(15) | Class Name |
| Section | Section | | VARCHAR2(1) | Section |
| Min_Age | Minimum Age | | NUMBER | Minimum Age |
| Max_Age | Maximum Age | | NUMBER | Maximum Age |

| | | | | |
|-----------|-------------------------|--|-------------|---|
| Total_Std | Total No. of Students | | NUMBER | Total Number of Students that can be in the class |
| Curr_Std | Current No. of Students | | NUMBER | Current Number of students in this class |
| Specific | Specific | | VARCHAR2(1) | Is this class specific for Boys or girls. |

Registers:

| | | | | |
|------------|---------------------|-------------|--------------|----------------------------------|
| Reg_No | Registration Number | PRIMARY KEY | NUMBER | Unique ID for registration |
| S_ID | Student ID | FOREIGN KEY | NUMBER | Student ID. Ref. S_ID in Student |
| C_ID | Course ID | FOREIGN KEY | NUMBER | Course ID. Ref. C_ID in Course |
| Challan_No | Challan Number | | VARCHAR2(15) | Challan Number |
| Reg_Date | Registration Date | | DATE | Registration Date |

Fee_Details:

| | | | | |
|-------------|---------------------|--------------------------|--------------|--|
| Reg_No | Registration Number | PRIMARY KEY, FOREIGN KEY | NUMBER | Registration Number of Course. Ref. Reg_No. in Registers |
| Challan_No | Challan Number | | VARCHAR2(15) | Challan_Number |
| Total_Fee | Total Fee | | NUMBER | Total Fee to be paid for course |
| Amount_Paid | Amount Paid | | NUMBER | Amount Paid by the student for course |
| Discount | Discount | | NUMBER | Discount amount that student got |

Attends:

| | | | | |
|------------|---------------------|--------------------------|--------|---|
| Reg_No | Registration Number | PRIMARY KEY, FOREIGN KEY | NUMBER | Registration Number. Ref. Reg_No in Registers |
| CL_ID | Class ID | FOREIGN KEY | NUMBER | Class ID. Ref. CL_ID in Class |
| Alloc_Date | Allocation Date | | DATE | Allocation Date |
| A_Status | Completed | | NUMBER | Student Completed the course or not? |

Class_Chg_Hist:

| | | | | |
|-------------|---------------------|-------------|--------------|--|
| Reg_No | Registration Number | PRIMARY KEY | NUMBER | Registration Number |
| Chg_No | Change Number | PRIMARY KEY | NUMBER | Change No. |
| Curr_Class | Current Class | | NUMBER | Curr Class ID |
| New_Class | New Class | | NUMBER | New Class ID |
| Alloc_Date | Allocation Date | | DATE | Allocation date of class |
| Reason | Reason | | VARCHAR2(20) | Reason for change of class |
| Approved_By | Approved by | | VARCHAR2(20) | Name of staff member who approved the change |

SQL Queries

```
-- SQL Queries

-- 1
-- A list of all students
SELECT * FROM Student;

-- 2
--A list of all mothers and their spouses
SELECT p1.p_Name "Mother", p2.p_Name "Husband"
FROM Parent p1, Parent p2
WHERE p1.Spouse = p2.P_ID;

-- 3
-- A list of all guardians, grouped by relation to students (show students as well)
Select gr.Relation "Relation", g.G_Name Guardian, s.S_Name Student
From Guardian_Relation gr, Guardian g, Student s
Where gr.S_ID = s.S_ID and g.G_ID = gr.G_ID
order by gr.Relation, g.G_Name;

-- 4
--A list of parents and their children
SELECT p1.P_Name "Father Name", p2.P_Name "Mother Name", s.S_Name "Child Name"
From Student s, Parent p1, Parent p2
Where s.F_ID = p1.P_ID and s.M_ID = p2.P_ID
order by p1.P_Name, p2.P_Name;

-- 5
-- A list of all students with siblings taking classes, grouped by class
Select cl.CL_Number "Class", cl.Section "Section", s1.S_Name "Student", s2.S_Name "Sibling"
From Student s1, Student s2, Registers r1, Registers r2, Attends a1, Attends a2, Class cl
Where (s1.F_ID = s2.F_ID and s1.M_ID = s2.M_ID and s1.S_ID != s2.S_ID)
and ( r1.S_ID = s1.S_ID and r2.S_ID = s2.S_ID )
and ( a1.Reg_No = r1.Reg_No and a2.Reg_No = r2.Reg_No )
and ( a1.CL_ID = a2.CL_ID )
and ( a1.A_Status = 0 and a1.CL_ID = cl.CL_ID )
order by cl.CL_Number, cl.Section;

-- 6
-
- A list of all students who have been assigned to a new class in the given time span (use check for including or ignoring new admissions)
-- ignoring new admission
Select s.S_Name "Student_Name"
from Student s, Registers r, Attends a
where r.S_ID = s.S_ID and a.Reg_No = r.Reg_No
and a.Alloc_Date >= to_date( '&Start_Date' , 'DD-MM-YYYY')
and a.Alloc_Date <= to_date( '&End_Date' , 'DD-MM-YYYY');
```

```

-- including new admission
Select s.S_Name "Student_Name"
from Student s, Registers r, Attends a
where r.S_ID = s.S_ID and a.Reg_No = r.Reg_No
and a.Alloc_Date >= to_date('&Start_Date', 'DD-MM-YYYY')
and a.Alloc_Date >= to_date('&End_Date', 'DD-MM-YYYY')
and s.Admission_Date >= to_date('&Admission_Date', 'DD-MM-YYYY');

--7
-- A list of all new students in given time span grouped by class
Select cl.CL_Number "Class", cl.Section "Section", s.S_Name "Student"
From Student s, Registers r, Attends a, Class cl
Where r.S_ID = s.S_ID and a.Reg_No = r.Reg_No and cl.CL_ID = a.CL_ID
and s.Admission_Date >= to_date('&Admission_Date', 'DD-MM-YYYY')
order by cl.CL_Number, cl.Section;

-- 8
-- A list of all new parents in given time span (include children info)
select p1.P_Name "Father", p2.P_Name "Mother", s.S_Name "Student Name"
from Parent p1, Parent p2, Student s
where s.F_ID = p1.P_ID and s.M_ID = p2.P_ID
and s.Admission_Date >= to_date('&Min_Date', 'DD-MM-YYYY')
and s.Admission_Date <= to_date('&Max_Date', 'DD-MM-YYYY');

-- 9
-
- A list of all parents who are early introducers (enroll their children into courses as soon
  as the children are old enough)
select DISTINCT p1.P_Name "Father", p2.P_Name "Mother", s.S_Name "Student Name"
from Parent p1, Parent p2, Student s, Registers r
where s.F_ID = p1.P_ID and s.M_ID = p2.P_ID
and r.S_ID = s.S_ID
and trunc((r.Reg_Date - s.DOB)/365) In (3,4);

-- 10
-- Class change history of given student
Select DISTINCT r.Reg_No "Reg_Number", c.C_Name "Course", h.Chg_No "#",
cl1.CL_Number "Old Class", cl1.Section "Old Section", cl2.CL_Number "New Class", cl2.Section
"New Section", h.Alloc_Date "Change Date"
From Registers r, Course c, Class cl1, Class cl2, Class_Chg_Hist h
Where r.S_ID = &Student_ID and h.Reg_No = r.Reg_No and c.C_ID = r.C_ID and cl1.CL_ID = h.Curr
_Class and cl2.CL_ID = h.New_Class;

```

```
SQL> SELECT * FROM Student;
```

| S_ID | S_NAME | G | DOB | B_FORM | M_ID | F_ID | ADMISSION | F_AID | PHOTO |
|------|----------|---|-----------|-----------------|------|------|-----------|-------|-------------|
| 80 | Mubashir | M | 28-JAN-04 | 56743-2346198-4 | 51 | 50 | 13-JAN-20 | 0 | child1.jpg |
| 81 | Afan | M | 21-JUN-05 | 87564-3423412-1 | 51 | 50 | 13-JAN-20 | 0 | child2.jpg |
| 82 | Sana | F | 10-FEB-04 | 76512-9728192-2 | 51 | 50 | 13-JAN-20 | 0 | child3.jpg |
| 83 | Zubair | M | 12-MAY-16 | 64523-8976512-9 | 51 | 50 | 03-JAN-20 | 0 | child4.jpg |
| 84 | Madiha | F | 02-APR-04 | 56398-9182310-6 | 53 | 52 | 10-JAN-20 | 0 | child5.jpg |
| 85 | Daniel | M | 09-JUN-17 | 86542-8471920-2 | 53 | 52 | 03-MAY-20 | 0 | child6.jpg |
| 86 | Hassan | M | 15-JAN-16 | 62735-7182372-8 | 53 | 52 | 10-JAN-20 | 0 | child7.jpg |
| 87 | Hanan | M | 07-MAR-17 | 98374-2873826-7 | 55 | 54 | 21-JAN-20 | 1 | child8.jpg |
| 88 | Sohaib | M | 13-DEC-16 | 35214-8378672-2 | 55 | 54 | 21-JAN-20 | 1 | child9.jpg |
| 89 | Sahil | M | 17-JUN-05 | 98653-9127638-4 | 57 | 56 | 11-JAN-20 | 0 | child13.jpg |
| 90 | Amina | F | 22-MAY-17 | 12437-8965238-3 | 57 | 56 | 11-JAN-20 | 0 | child11.jpg |
| 91 | Noor | F | 27-SEP-16 | 71232-8513243-6 | 57 | 56 | 01-MAY-20 | 0 | child12.jpg |

12 rows selected.

```
SQL> SELECT p1.p_Name "Mother", p2.p_Name "Husband"
2 FROM Parent p1, Parent p2
3 WHERE p1.Spouse = p2.P_ID;
```

| Mother | Husband |
|--------|---------|
| Maham | Asad |
| Zoha | Umair |
| Neha | Usman |
| Sadaf | Arslan |

```
SQL> Select gr.Relation "Relation", g.G_Name Guardian, s.S_Name Student
2 From Guardian_Relation gr, Guardian g, Student s
3 Where gr.S_ID = s.S_ID and g.G_ID = gr.G_ID
4 order by gr.Relation, g.G_Name;
```

| Relation | GUARDIAN | STUDENT |
|--------------|----------|----------|
| Father | Usman | Hanan |
| Father | Usman | Sohaib |
| Grand Father | Qasim | Amina |
| Grand Father | Qasim | Noor |
| Grand Father | Qasim | Sahil |
| Grand Father | Saad | Afan |
| Grand Father | Saad | Zubair |
| Grand Father | Saad | Sana |
| Grand Father | Saad | Mubashir |
| Uncle | Junaid | Hassan |
| Uncle | Junaid | Madiha |
| Uncle | Junaid | Daniel |

12 rows selected.

```
SQL> SELECT p1.P_Name "Father Name", p2.P_Name "Mother Name", s.S_Name "Child Name"
  2 From Student s, Parent p1, Parent p2
  3 Where s.F_ID = p1.P_ID and s.M_ID = p2.P_ID
  4 order by p1.P_Name, p2.P_Name;
```

| Father Name | Mother Name | Child Name |
|-------------|-------------|------------|
| Arslan | Sadaf | Sahil |
| Arslan | Sadaf | Amina |
| Arslan | Sadaf | Noor |
| Asad | Maham | Sana |
| Asad | Maham | Zubair |
| Asad | Maham | Mubashir |
| Asad | Maham | Afan |
| Umair | Zoha | Hassan |
| Umair | Zoha | Madiha |
| Umair | Zoha | Daniel |
| Usman | Neha | Hanan |
| Usman | Neha | Sohaib |

12 rows selected.

```
SQL> Select cl.CL_Number "Class", cl.Section "Section", s1.S_Name "Student", s2.S_Name "Sibling"
  2 From Student s1, Student s2, Registers r1, Registers r2, Attends a1, Attends a2, Class cl
  3 Where (s1.F_ID = s2.F_ID and s1.M_ID = s2.M_ID and s1.S_ID != s2.S_ID)
  4 and ( r1.S_ID = s1.S_ID and r2.S_ID = s2.S_ID )
  5 and ( a1.Reg_No = r1.Reg_No and a2.Reg_No = r2.Reg_No )
  6 and ( a1.CL_ID = a2.CL_ID )
  7 and ( a1.A_Status = 0 and a1.CL_ID = cl.CL_ID )
  8 order by cl.CL_Number, cl.Section;
```

| Class | S | Student | Sibling |
|-------|---|----------|---------|
| 1 | A | Hanan | Sohaib |
| 1 | A | Daniel | Hassan |
| 1 | A | Hassan | Daniel |
| 1 | A | Daniel | Hassan |
| 1 | B | Amina | Noor |
| 1 | B | Noor | Amina |
| 1 | B | Sohaib | Hanan |
| 1 | B | Noor | Amina |
| 7 | A | Mubashir | Sana |
| 7 | A | Mubashir | Afan |

10 rows selected.


```

SQL> Select s.S_Name "Student_Name"
  2  from Student s, Registers r, Attends a
  3  where r.S_ID = s.S_ID and a.Reg_No = r.Reg_No
  4  and a.Alloc_Date >= to_date( '&Start_Date' , 'DD-MM-YYYY')
  5  and a.Alloc_Date <= to_date( '&End_Date' , 'DD-MM-YYYY');
Enter value for start_date: 4-4-2020
old  4: and a.Alloc_Date >= to_date( '&Start_Date' , 'DD-MM-YYYY')
new  4: and a.Alloc_Date >= to_date( '4-4-2020' , 'DD-MM-YYYY')
Enter value for end_date: 9-4-2020
old  5: and a.Alloc_Date <= to_date( '&End_Date' , 'DD-MM-YYYY')
new  5: and a.Alloc_Date <= to_date( '9-4-2020' , 'DD-MM-YYYY')

Student_Name
-----
Sana
Zubair
Madiha
Hassan
Hanan
Sohaib
Sahil
Amina

8 rows selected.

```

```

SQL> Select s.S_Name "Student_Name"
  2  from Student s, Registers r, Attends a
  3  where r.S_ID = s.S_ID and a.Reg_No = r.Reg_No
  4  and a.Alloc_Date >= to_date( '&Start_Date' , 'DD-MM-YYYY')
  5  and a.Alloc_Date >= to_date( '&End_Date' , 'DD-MM-YYYY')
  6  and s.Admission_Date >= to_date( '&Admission_Date' , 'DD-MM-YYYY');
Enter value for start_date: 1-5-2020
old  4: and a.Alloc_Date >= to_date( '&Start_Date' , 'DD-MM-YYYY')
new  4: and a.Alloc_Date >= to_date( '1-5-2020' , 'DD-MM-YYYY')
Enter value for end_date: 10-5-2020
old  5: and a.Alloc_Date >= to_date( '&End_Date' , 'DD-MM-YYYY')
new  5: and a.Alloc_Date >= to_date( '10-5-2020' , 'DD-MM-YYYY')
Enter value for admission_date: 1-4-2020
old  6: and s.Admission_Date >= to_date( '&Admission_Date' , 'DD-MM-YYYY')
new  6: and s.Admission_Date >= to_date( '1-4-2020' , 'DD-MM-YYYY')

Student_Name
-----
Daniel
Noor

```

```
SQL> Select cl.CL_Number "Class", cl.Section "Section", s.S_Name "Student"
  2 From Student s, Registers r, Attends a, Class cl
  3 Where r.S_ID = s.S_ID and a.Reg_No = r.Reg_No and cl.CL_ID = a.CL_ID
  4 and s.Admission_Date >= to_date('&Admission_Date', 'DD-MM-YYYY')
  5 order by cl.CL_Number, cl.Section;
Enter value for admission_date: 1-4-2020
old  4: and s.Admission_Date >= to_date('&Admission_Date', 'DD-MM-YYYY')
new  4: and s.Admission_Date >= to_date('1-4-2020', 'DD-MM-YYYY')
```

Class S Student

```
-----
1 A Daniel
1 B Noor
```

```
SQL> select p1.P_Name"Father", p2.P_Name"Mother", s.S_Name "Student Name"
  2 from Parent p1, Parent p2, Student s
  3 where s.F_ID = p1.P_ID and s.M_ID = p2.P_ID
  4 and s.Admission_Date >= to_date('&Min_Date', 'DD-MM-YYYY')
  5 and s.Admission_Date <= to_date('&Max_Date', 'DD-MM-YYYY');
Enter value for min_date: 9-1-2020
old  4: and s.Admission_Date >= to_date('&Min_Date', 'DD-MM-YYYY')
new  4: and s.Admission_Date >= to_date('9-1-2020', 'DD-MM-YYYY')
Enter value for max_date: 12-1-2020
old  5: and s.Admission_Date <= to_date('&Max_Date', 'DD-MM-YYYY')
new  5: and s.Admission_Date <= to_date('12-1-2020', 'DD-MM-YYYY')
```

| Father | Mother | Student Name |
|--------|--------|--------------|
| Umair | Zoha | Madiha |
| Umair | Zoha | Hassan |
| Arslan | Sadaf | Sahil |
| Arslan | Sadaf | Amina |

```
SQL> select DISTINCT p1.P_Name "Father", p2.P_Name "Mother", s.S_Name "Student Name"
  2 from Parent p1, Parent p2, Student s, Registers r
  3 where s.F_ID = p1.P_ID and s.M_ID = p2.P_ID
  4 and r.S_ID = s.S_ID
  5 and trunc((r.Reg_Date - s.DOB)/365) In (3,4);
```

| Father | Mother | Student Name |
|--------|--------|--------------|
| Arslan | Sadaf | Amina |
| Usman | Neha | Hanan |
| Usman | Neha | Sohaib |
| Umair | Zoha | Hassan |
| Arslan | Sadaf | Noor |
| Asad | Maham | Zubair |

6 rows selected.

```
SQL> Select DISTINCT r.Reg_No "Reg_Number", c.C_Name "Course", h.Chg_No "#",
  2 c11.CL_Number "Old Class", c11.Section "Old Section", c12.CL_Number "New Class", c12.Section "New Section", h.Alloc_Date "Change Date"
  3 From Registers r, Course c, Class c11, Class c12, Class_Chg_Hist h
  4 Where r.S_ID = &Student_ID and h.Reg_No = r.Reg_No and c.C_ID = r.C_ID and c11.CL_ID = h.Curr_Class and c12.CL_ID = h.New_Class;
Enter value for student_id: 87
old  4: Where r.S_ID = &Student_ID and h.Reg_No = r.Reg_No and c.C_ID = r.C_ID and c11.CL_ID = h.Curr_Class and c12.CL_ID = h.New_Class
new  4: Where r.S_ID = 87 and h.Reg_No = r.Reg_No and c.C_ID = r.C_ID and c11.CL_ID = h.Curr_Class and c12.CL_ID = h.New_Class
```

| Reg_Number | Course | # | Old Class | O | New Class | N | Change Da |
|------------|-----------|---|-----------|---|-----------|---|-----------|
| 156 | Astronomy | 1 | 1 | A | 1 | B | 15-APR-20 |