DBMS LAB PROJECT

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(19i-2155)

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LAB SECTION A

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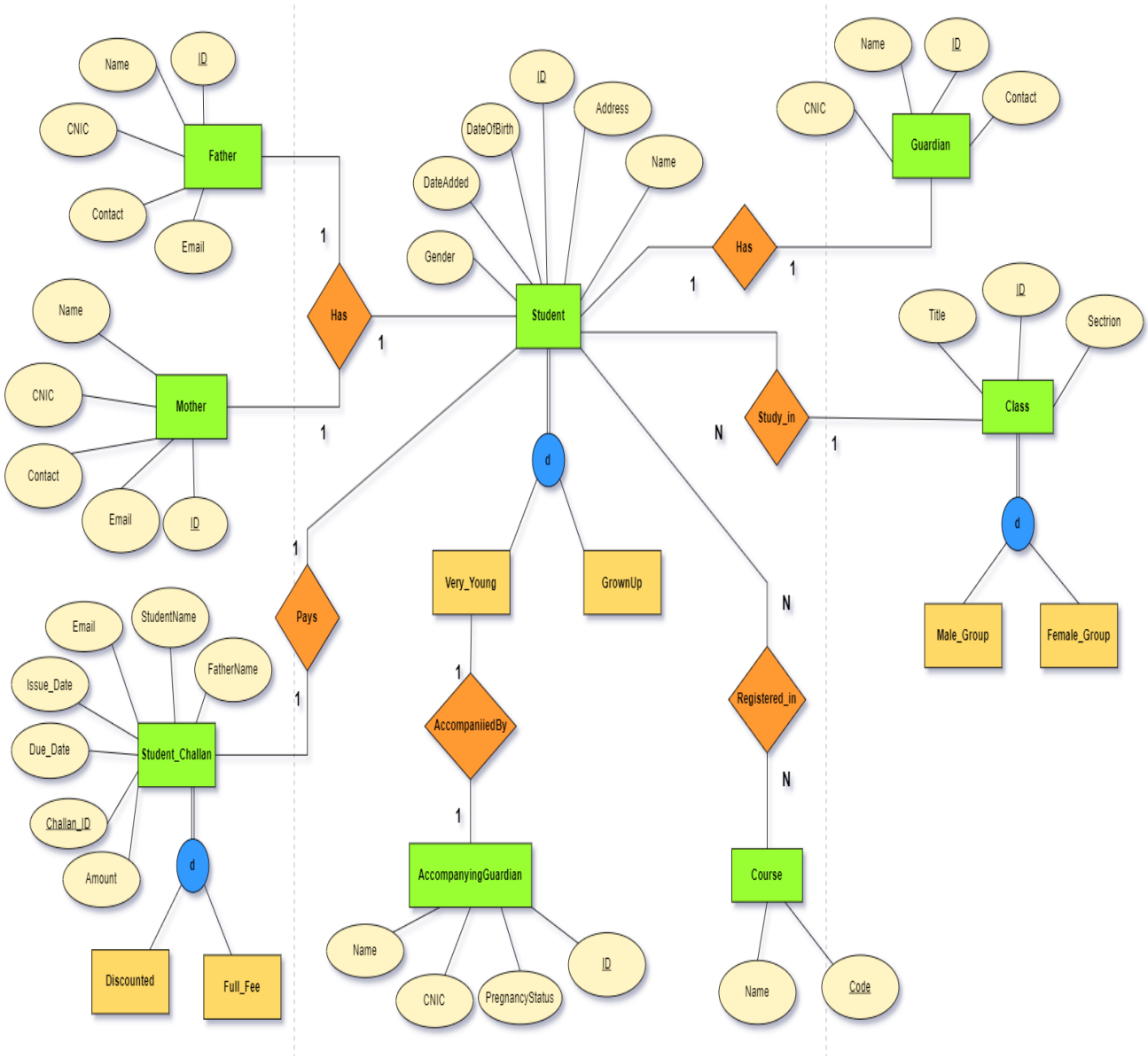
EER


Name
ID
CNIC
Father
Contact
Email
Has
1
1
Name
CNIC
Mother
Contact
Email
ID
1
1
Email
StudentName
FatherName
Issue_Date
Due_Date
Student_Challan
Challan_ID
Amount
d
Discounted
Full_Fee
Pays
1
1
ID
Address
DateOfBirth
Name
DateAdded
Gender
Student
d
Very_Young
GrownUp
1
AccompaniiedBy
1
AccompanyingGuardian
Name
CNIC
PregnancyStatus
ID
Has
1
1
Name
ID
CNIC
Contact
Guardian
Study_in
N
1
Title
ID
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Class
d
Male_Group
Female_Group
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Registered_in
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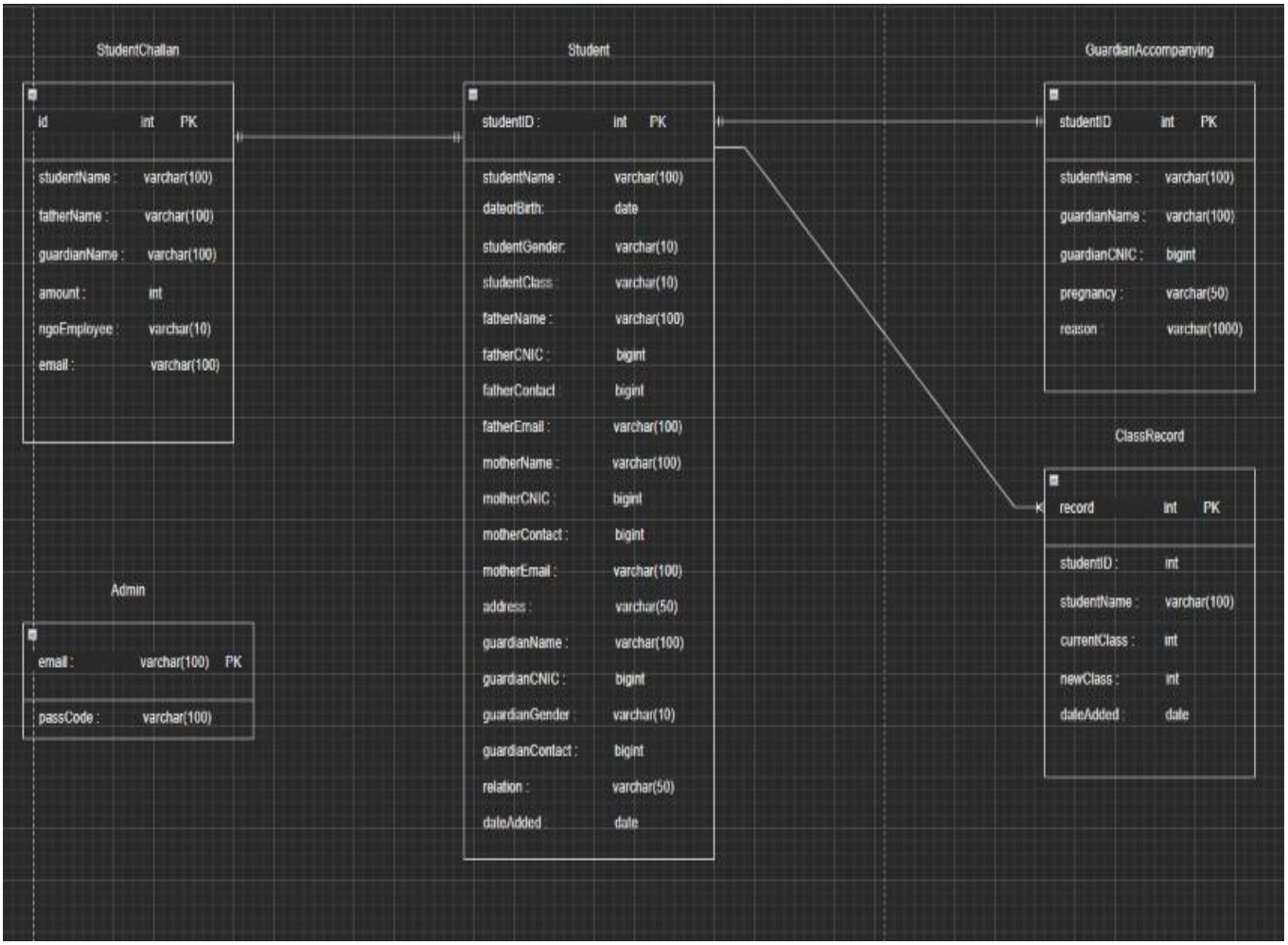
Course
Name
Code

Relational Schema



Description of Tables

Student

The Student table contains information about each student.

Along with Student ID (as integer) being the primary key, this table has fields of student name, gender, date of birth, address, each of his/her parents' and guardian's names and emails (as text descriptions). CNIC and Contact numbers of guardian and each parent are also integer type fields of the Student table. Lastly it has the field of dateAdded to contain the date when student took admission.

GuardianAccompanying

The GuardianAccompanying table contains information about the guardian accompanying the student of a younger class.

This table has Student ID of the student, the guardian is accompanying, as the primary key. Moreover, the student's name, guardian's name and reason (why mother is not accompanying the student) are text described (Varchar) fields of this table. Pregnancy is yet another text description (Varchar) to know the pregnancy status of the accompanying guardian. Integer data type field of guardianCNIC is also present to hold the guardians CNIC number.

ClassRecord

This table contains the record of the class a student is enrolled in.

It has the field of record as the primary key. StudentID, current class, new class are also its fields represented by integer data type. Date added is yet another field containing the date when student was enrolled in a particular class.

Admin

Admin table contains login information for the admin

It has email field (varchar) as primary key and passcode being the second field that too in varchar.

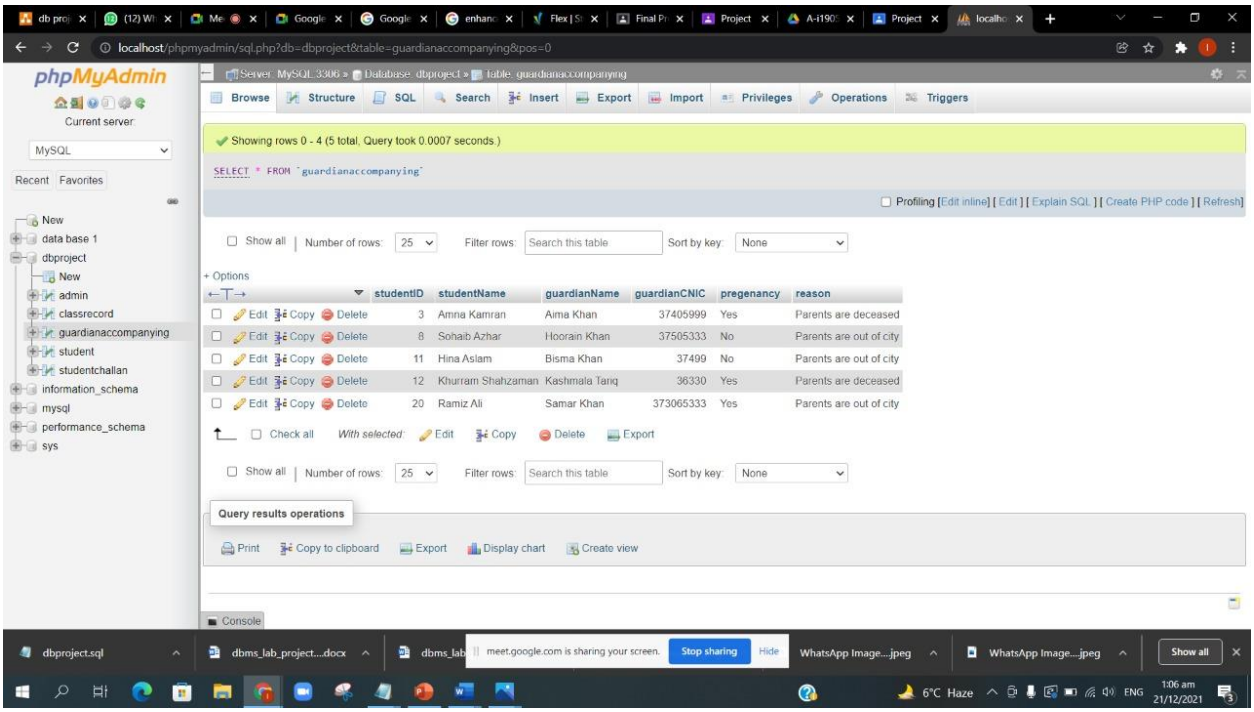
StudentChallan

Student Challan table holds information about the student fee.

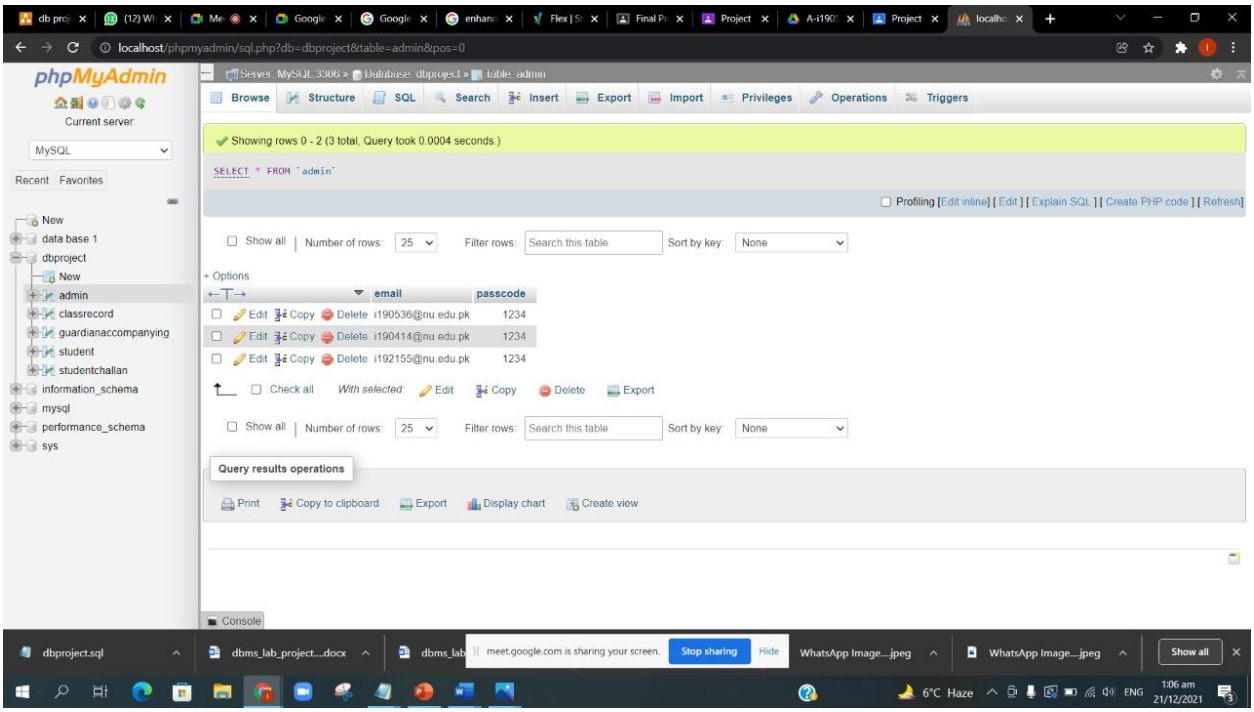
Its has the field of ID as primary key represented in an integer data type. The amount field (integer data type) contains the amount of fee the student has to pay. Along with these, this table has fields of StudentID, student name, his/her father's and guardian's name and email as Varchar data type.

Datasets

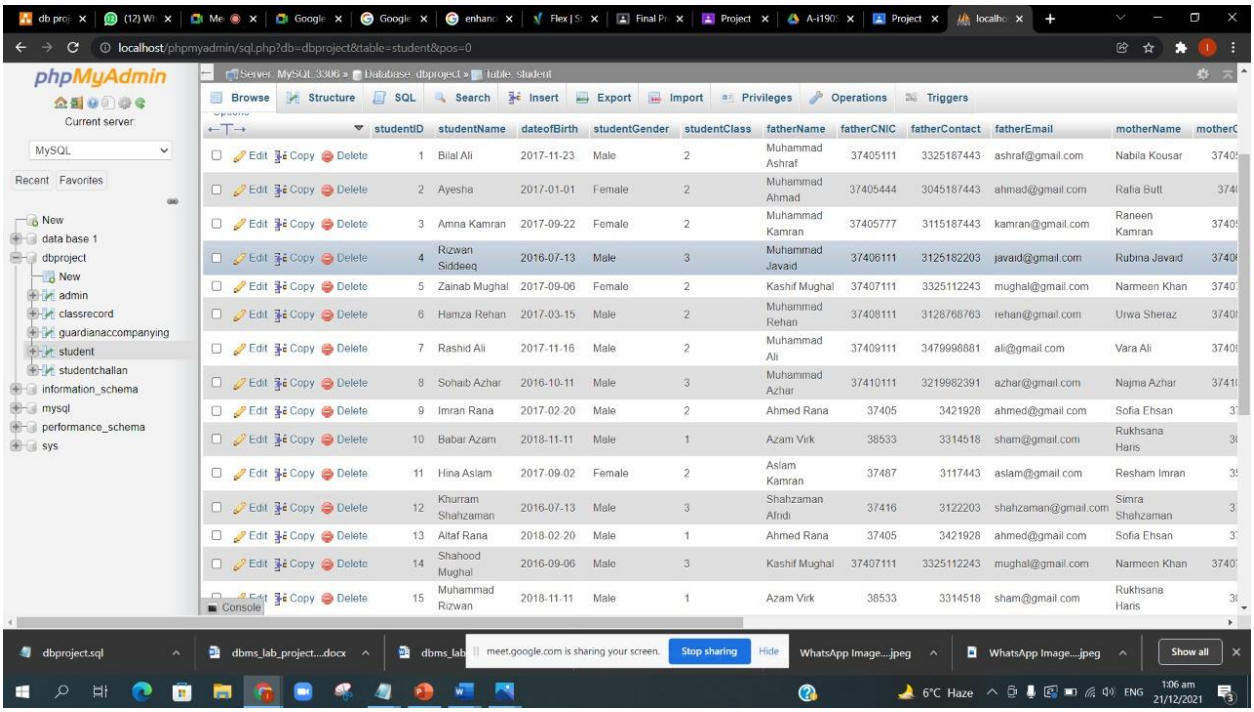
Guardian Accompanying



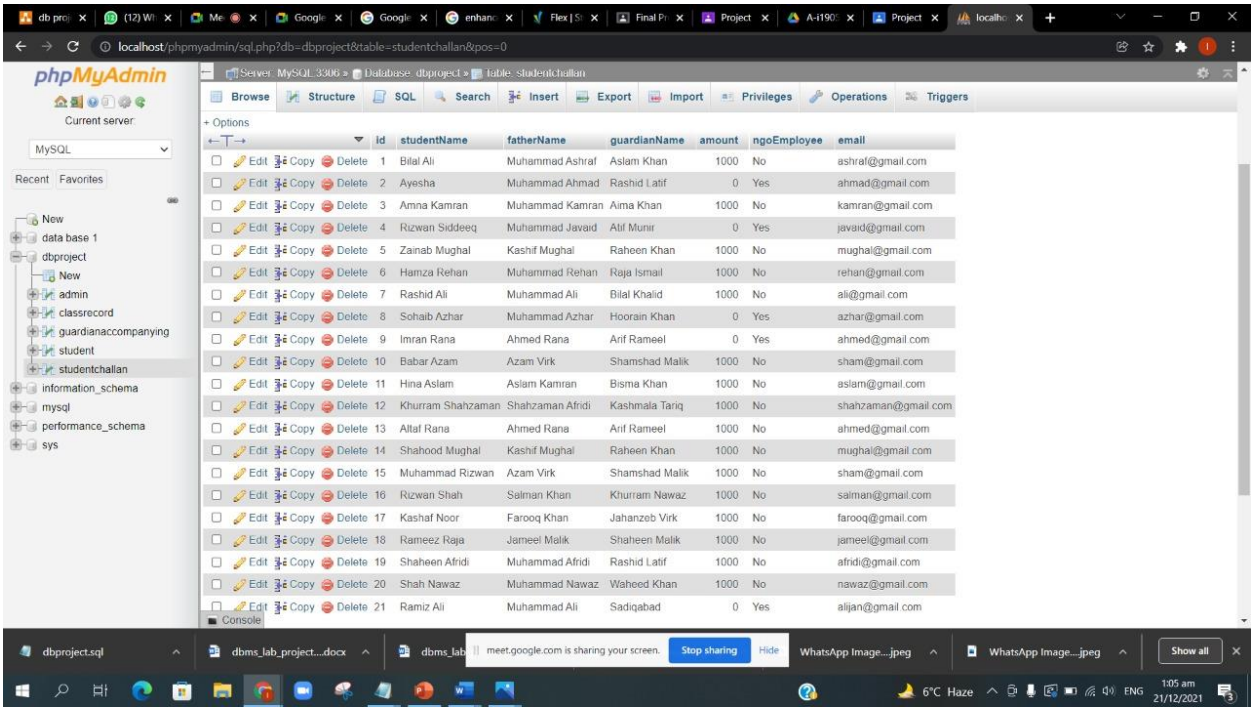
Admin:



Student



STUDENT CHALLAN



DATASET (FULL DATASET PROVIDED AT THIS LINK):
https://docs.google.com/spreadsheets/d/15GAoleDOIAdRbi7BB0vNoCERJ_7MTxHCnXGDbvmb6Fs/edit?usp=sharing

SQL Statements to Create Tables

Creating student table

CREATE TABLE student(studentID int NOT NULL AUTO_INCREMENT , studentName varchar(100), dateofBirth date, studentGender varchar(10), studentClass varchar(10), fatherName varchar(100), fatherCNIC bigint, fatherContact bigint, fatherEmail varchar(100), motherName varchar(100), motherCNIC bigint, motherContact bigint, motherEmail varchar(100), address varchar(50), GuardianName varchar(100), GuardianCNIC bigint, guardianGender varchar(10), guardianContact bigint, relation varchar(50), dateAdded date, PRIMARY KEY(studentID));

Creating admin table

CREATE TABLE admin(email varchar(100), passcode int, PRIMARY KEY(email));

Creating studentChallan table

CREATE TABLE studentchallan(id int NOT NULL AUTO_INCREMENT, studentName varchar(100), fatherName varchar(100), guardianName varchar(100), amount int, ngoEmployee varchar(10), email varchar(100), PRIMARY KEY(id));

Creating guardianAccompanying table

CREATE TABLE guardianAccompanying(studentID int, studentName varchar(100), guardianName varchar(100), gurdianCNIC int, pregenancy varchar(50),reason varchar(1000), PRIMARY KEY (studentID));

Creating classRecord table

CREATE TABLE classrecord(record int AUTO_INCREMENT, studentID int, studentName varchar(50), currentClass int, newClass int, dateAdded date, PRIMARY KEY(record));

SQL Statements to Populate Tables

QUERIES TO INSERT INTO ADMIN TABLE:

INSERT INTO `admin`(`email`, `passcode`) VALUES ('i190536@nu.edu.pk','1234'),

('i190414@nu.edu.pk','1234'), ('i192155@nu.edu.pk','1234');

QUERIES TO INSERT INTO STUDENTS:

INSERT INTO `student` (`studentName`, `dateofBirth`, `studentGender`, `studentClass`, `fatherName`, `fatherCNIC`, `fatherContact`, `fatherEmail`, `motherName`, `motherCNIC`, `motherContact`, `motherEmail`, `address`, `GuardianName`, `GuardianCNIC`, `guardianGender`, `guardianContact`, `relation`, `dateAdded`) VALUES

('Bilal Ali', '2017-11-23', 'Male', '2', 'Muhammad Ashraf', '37405111', '03325187443', 'ashraf@gmail.com', 'Nabila Kousar', '37405222', '03325187442', 'nabila@yahoo.com', 'Kamalabad', 'Aslam Khan', '37405333', 'Male', '03325187441', 'Uncle', '2021-11-23'),

('Ayesha', '2017-01-01', 'Female','2', 'Muhammad Ahmad', '37405444', '03045187443', 'ahmad@gmail.com', 'Rafia Butt', '3740555', '03025187442', 'rafia@gmail.com', 'Askari 13', 'Rashid Latif', '37405666', 'Male', '03125187441', 'Uncle', '2021-01-01'),

('Amna Kamran', '2017-09-22', 'Female','2', 'Muhammad Kamran', '37405777', '03115187443', 'kamran@gmail.com', 'Raneen Kamran', '37405888', '03425187242', 'raneen@yahoo.com', '6th Road', 'Aima Khan', '37405999', 'Female', '03655097441', 'Aunt','2021-09-22'),

('Rizwan Siddeeq', '2016-07-13', 'Male','3','Muhammad Javaid', '37406111', '03125182203', 'javaid@gmail.com', 'Rubina Javaid', '37406222', '03425998442', 'rubina@gmail.com', 'Askari 14', 'Atif Munir', '37406333', 'Male', '03321237441', 'Family Friend', '2021-07-13'),

('Zainab Mughal', '2017-09-06', 'Female','2', 'Kashif Mughal', '37407111', '03325112243', 'mughal@gmail.com', 'Narmeen Khan', '37407222', '03321238442', 'narmeen@yahoo.com', 'Lalkurti', 'Raheen Khan', '37407333', 'Male', '03325187441', 'Uncle', '2021-09-06'),

('Hamza Rehan', '2017-03-15', 'Male','2', 'Muhammad Rehan', '37408111', '03128768763', 'rehan@gmail.com', 'Urwa Sheraz', '37408222', '03110987442', 'urwa@gmail.com', 'DHA 1', 'Raja Ismail', '37408333', 'Male', '03224390813', 'Uncle', '2021-03-15'),

('Rashid Ali', '2017-11-16', 'Male','2', 'Muhammad Ali', '37409111', '03479998881', 'ali@gmail.com', 'Vara Ali', '37409222', '03179808903', 'vara@yahoo.com', 'Bahria Enclave', 'Bilal Khalid', '37409333', 'Male', '0322567438','Uncle', '2021-11-16'),

('Sohaib Azhar', '2016-10-11', 'Male','3', 'Muhammad Azhar', '37410111', '03219982391', 'azhar@gmail.com', 'Najma Azhar', '37410222', '03169471442', 'najma@yahoo.com', 'Kamalabad', 'Hoorain Khan', '37505333', 'Female', '03115129668', 'Aunt', '2021-10-11'),

('Imran Rana', '2017-02-20', 'Male','2', 'Ahmed Rana', '37405', '03421928', 'ahmed@gmail.com', 'Sofia Ehsan', '37400', '03325187', 'sofia@yahoo.com', 'Faizabad', 'Arif Rameel', '37401', 'Male', '03126187', 'Uncle', '2021-02-20'),

('Babar Azam', '2018-11-11', 'Male', '1', 'Azam Virk', '38533', '03314518', 'sham@gmail.com', 'Rukhsana Haris', '30555', '03027442', 'rukhsana@gmail.com', 'Shamsabad', 'Shamshad Malik', '37666', 'Male', '03125181', 'Uncle','2021-11-11'),

('Hina Aslam', '2017-09-02', 'Female','2', 'Aslam Kamran', '37487', '03117443', 'aslam@gmail.com', 'Resham Imran', '35888', '03427242', 'resham@yahoo.com', 'Layalpur', 'Bisma Khan', '37499', 'Female', '03655441', 'Aunt','2021-09-02'),

('Khurram Shahzaman', '2016-07-13', 'Male','3', 'Shahzaman Afridi', '37416', '03122203', 'shahzaman@gmail.com', 'Simra Shahzaman', '37492', '03425992', 'simra@gmail.com', 'Rawat', 'Kashmala Tariq', '36330', 'Female', '03237441', 'Aunt','2021-07-13'),

('Altaf Rana', '2018-02-20', 'Male','1', 'Ahmed Rana', '37405', '03421928', 'ahmed@gmail.com', 'Sofia Ehsan', '37400', '03325187', 'sofia@yahoo.com', 'Faizabad', 'Arif Rameel', '37401', 'Male', '03126187', 'Uncle','2021-02-20'),

('Shahood Mughal', '2016-09-06', 'Male','3', 'Kashif Mughal', '37407111', '03325112243', 'mughal@gmail.com', 'Narmeen Khan', '37407222', '03321238442', 'narmeen@yahoo.com', 'Lalkurti', 'Raheen Khan', '37407333', 'Male', '03325187441', 'Uncle', '2021-09-06'),

('Muhammad Rizwan', '2018-11-11', 'Male', '1', 'Azam Virk', '38533', '03314518', 'sham@gmail.com', 'Rukhsana Haris', '30555', '03027442', 'rukhsana@gmail.com', 'Shamsabad', 'Shamshad Malik', '37666', 'Male', '03125181', 'Uncle', '2021-11-11'),

('Rizwan Shah', '2015-11-20', 'Male', '4', 'Salman Khan', '37321111', '03323217443', 'salman@gmail.com', 'Rukhsana Babar', '3333222', '03329877442', 'rukhsana@yahoo.com', 'Khayaban', 'Khurram Nawaz', '37400003', 'Male', '03325180001', 'Uncle', '2021-10-29'),

('Kashaf Noor', '2016-10-21', 'Female', '3', 'Farooq Khan', '37000111', '03323125443', 'farooq@gmail.com', 'Nur Zaman', '3330012', '03313377442', 'nur@yahoo.com', 'Tarnol', 'Jahanzeb Virk', '37409803', 'Male', '03305109801', 'Uncle', '2021-12-19'),

('Rameez Raja', '2014-11-20', 'Male', '5', 'Jameel Malik', '37456111', '03345617443', 'jameel@gmail.com', 'Shireen Anwar', '3388822', '03329879872', 'shireen@yahoo.com', 'Dhok', 'Shaheen Malik', '37787003', 'Male', '03325184321', 'Uncle', '2021-12-12'),

('Shaheen Afridi', '2011-11-23', 'Male', '8', 'Muhammad Afridi', '37405985', '03325156343', 'afridi@gmail.com', 'Zainab Kousar', '37495892', '03324097442', 'zainab@yahoo.com', 'DHA II', 'Rashid Latif', '37405498', 'Male', '03329987441', 'Uncle', '2021-12-26'),

('Shah Nawaz', '2012-11-23', 'Male', '7', 'Muhammad Nawaz', '37405629', '03325188903', 'nawaz@gmail.com', 'Saleha Fatima', '374097862', '0311334451', 'saleha@yahoo.com', 'Rehmanabad', 'Waheed Khan', '37309733', 'Male', '03324529041', 'Uncle', '2020-08-11'),

('Ramiz Ali', '2013-11-23', 'Male', '6', 'Muhammad Ali', '374092901', '03325428453', 'alijan@gmail.com', 'Wazeema Ali', '374068892', '03591122561', 'wazeema@yahoo.com', 'Sadiqabad', 'Samar Khan', '373065333', 'Female', '03125169441', 'Aunt', '2021-09-29');

QUERIES TO INSERT INTO GUARDIANACCOMPANYING:

INSERT INTO `guardianaccompanying`(`studentID`, `studentName`, `guardianName`, `guardianCNIC`, `pregenancy`, `reason`) VALUES

('3','Amna Kamran','Aima Khan', '37405999', 'Yes', 'Parents are deceased'),

('8','Sohaib Azhar', 'Hoorain Khan', '37505333', 'No', 'Parents are out of city'),

('11','Hina Aslam', 'Bisma Khan', '37499', 'No', 'Parents are out of city'),

('12','Khurram Shahzaman', 'Kashmala Tariq', '36330', 'Yes', 'Parents are deceased'),

('20','Ramiz Ali', 'Samar Khan', '373065333', 'Female', 'Yes', 'Parents are out of city');

QUERIES TO INSERT INTO STUDENTCHALLAN:

INSERT INTO `studentchallan`(`studentName`, `fatherName`, `guardianName`, `amount`, `ngoEmployee`, `email`) VALUES

('Bilal Ali', 'Muhammad Ashraf', 'Aslam Khan', '1000', 'No', 'ashraf@gmail.com'),

('Ayesha', 'Muhammad Ahmad', 'Rashid Latif', '0', 'Yes', 'ahmad@gmail.com'),

('Amna Kamran', 'Muhammad Kamran','Aima Khan','1000', 'No', 'kamran@gmail.com'),

('Rizwan Siddeeq', 'Muhammad Javaid', 'Atif Munir', '0', 'Yes', 'javaid@gmail.com'),

('Zainab Mughal', 'Kashif Mughal', 'Raheen Khan', '1000', 'No', 'mughal@gmail.com'),

('Hamza Rehan', 'Muhammad Rehan', 'Raja Ismail', '1000', 'No', 'rehan@gmail.com'),

('Rashid Ali', 'Muhammad Ali', 'Bilal Khalid', '1000', 'No', 'ali@gmail.com'),

('Sohaib Azhar', 'Muhammad Azhar', 'Hoorain Khan', '0', 'Yes', 'azhar@gmail.com'),

('Imran Rana', 'Ahmed Rana', 'Arif Rameel', '0', 'Yes', 'ahmed@gmail.com'),

('Babar Azam', 'Azam Virk', 'Shamshad Malik', '1000', 'No', 'sham@gmail.com'),

('Hina Aslam', 'Aslam Kamran','Bisma Khan', '1000', 'No', 'aslam@gmail.com'),

('Khurram Shahzaman','Shahzaman Afridi','Kashmala Tariq', '1000', 'No', 'shahzaman@gmail.com'),

('Altaf Rana', 'Ahmed Rana', 'Arif Rameel', '1000', 'No', 'ahmed@gmail.com'),

('Shahood Mughal', 'Kashif Mughal' ,'Raheen Khan', '1000', 'No', 'mughal@gmail.com'),

('Muhammad Rizwan','Azam Virk', 'Shamshad Malik', '1000', 'No', 'sham@gmail.com'),

('Rizwan Shah', 'Salman Khan', 'Khurram Nawaz', '1000', 'No', 'salman@gmail.com'),

('Kashaf Noor', 'Farooq Khan', 'Jahanzeb Virk', '1000', 'No', 'farooq@gmail.com'),

('Rameez Raja', 'Jameel Malik','Shaheen Malik' ,'1000', 'No','jameel@gmail.com'),

('Shaheen Afridi','Muhammad Afridi','Rashid Latif', '1000', 'No','afridi@gmail.com'),

('Shah Nawaz', 'Muhammad Nawaz', 'Waheed Khan', '1000', 'No','nawaz@gmail.com'),

('Ramiz Ali', 'Muhammad Ali', 'Sadiqabad', '0', 'Yes','alijan@gmail.com');

SQL statements as the answer to the needed 15 queries

Query 1 (Stored Procedure):

```
DELIMITER
  //
CREATE PROCEDURE allStudents_Name()
BEGIN
  SELECT
    studentID, studentName
  FROM
    student ;
END //
DELIMITER
  ;
```

Query 2:

```
DELIMITER
  //
CREATE PROCEDURE mother_spouses()
BEGIN
  SELECT
    motherName AS "Mothers", fatherName AS "Their Spouses"
```

```
    FROM
        student ;
END //
DELIMITER  ;
```

Query 3:

```
DELIMITER //
BEGIN
SELECT studentName, GuardianName, relation FROM student GROUP BY studentID;
END //
DELIMITER
;
```

Query 4:

```
DELIMITER
    //
CREATE PROCEDURE stundent_parent()
BEGIN
    SELECT
        studentName AS "Name", fatherName AS "Father Name", motherName AS "Mother
Name"
    FROM
        student ;
END //
DELIMITER
    ;
```

Query 5:

```
DELIMITER
    //
CREATE PROCEDURE sibilings_inSameClass()
```

```
BEGIN
   SELECT
      GROUP_CONCT(s.studentName SEPERATOR ',') AS Siblings , s.studentClass,
s.fatherName
   FROM
      student s
   INNER JOIN(
      SELECT
         st.fatherName,
         st.motherName,
         st.studentClass
      FROM
         student st
      GROUP BY
         st.fatherName,
         st.motherName,
         st.studentClass
      HAVING
         COUNT(*) > 1
   ) stu
ON
   stu.fatherName = s.fatherName AND stu.motherName = s.motherName AND stu.studentClass
= s.studentClass ;
END //
DELIMITER
   ;
```

Query 6:

Note: We selected all the records added before 2019.

```
DELIMITER //
CREATE PROCEDURE changedClasses_inTimeSpan()
BEGIN
   SELECT
      *
   FROM
      classrecord
   WHERE
      YEAR(dateAdded) <= 2019 ;
END //
DELIMITER  ;
```

Query 7:

Note: time span='2021-10-01' has been chosen

```
DELIMITER
   //
CREATE PROCEDURE newStudents()
BEGIN
   SELECT
      studentName
   FROM
      student
```

```
    WHERE
        dateAdded < '2021-10-01'
    GROUP BY studentID
END //
DELIMITER  ;
```

Query 8:

Note: time span='2021-09-01' has been chosen

```
DELIMITER
    //
CREATE PROCEDURE parentInfo()
BEGIN
    SELECT
        studentID AS "Roll #", studentName AS "Name", dateofBirth AS "BirthDate",
studentGender AS "Gender", fatherName AS "Father Name", motherName AS "MotherName"
    FROM
        student
    WHERE
        dateAdded < '2021-09-01' ;
END //
DELIMITER
    ;
```

Query 9:

Note: Timespan of 3 days is chosen

```
DELIMITER
    //
CREATE PROCEDURE early_parents()
BEGIN
    SELECT
        s.motherName, s.fatherName
```

```
    FROM
        student s
    JOIN classrecord c ON
        (s.studentID = c.studentID)
    WHERE
        DATEDIFF(c.dateAdded, s.dateAdded) > 365 AND DATEDIFF(c.dateAdded,
s.dateAdded) < 369 ;
END //
DELIMITER
    ;
```

Query 10: To find the class history of student whose ID is 1

```
DELIMITER
    //
CREATE PROCEDURE class_History()
BEGIN
    SELECT
        *
    FROM
        classrecord
    WHERE
        studentID = 1;
END //
DELIMITER
    ;
```

Report 1:

Query to search:

SELECT studentID, studentName, dateofBirth, studentGender FROM student WHERE studentID='$term';

Query to delete:

DELETE FROM student WHERE studentID = '$id';

Query to update:

UPDATE student SET studentName='$name', studentGender='$gender', dateofBirth='$birthDate' WHERE studentID='$id';

Query to display students of class 1:

SELECT studentID, studentName, dateofBirth, studentGender FROM student WHERE studentClass = 1;

Query to display students of class 2:

SELECT studentID, studentName, dateofBirth, studentGender FROM student WHERE studentClass = 2;

Query to display students of class 3:

SELECT studentID, studentName, dateofBirth, studentGender FROM student WHERE studentClass = 3;

Report 2:

Query to search:

SELECT Count(*) AS NumberofStudents FROM student WHERE studentClass='$term';

Query to get number of students in class 1:

SELECT Count(*) AS NumberofStudents FROM student WHERE studentClass=1;

Query to get number of boys in class1:

SELECT Count(studentGender) AS NumberofBoys FROM student WHERE studentClass=1 AND studentGender='Male';

Query to get number of girls in class1:

SELECT Count(studentGender) AS NumberofGirls FROM student WHERE studentClass=1 AND studentGender='Female';

Query to get number of students in class 2:

SELECT Count(*) AS NumberofStudents FROM student WHERE studentClass=2;

Query to get number of boys in class1:

SELECT Count(studentGender) AS NumberofBoys FROM student WHERE studentClass=2 AND studentGender='Male';

Query to get number of girls in class2:

SELECT Count(studentGender) AS NumberofGirls FROM student WHERE studentClass=2 AND studentGender='Female';

Query to get number of students in class 3:

SELECT Count(*) AS NumberofStudents FROM student WHERE studentClass=3;

Query to get number of boys in class3:

SELECT Count(studentGender) AS NumberofBoys FROM student WHERE studentClass=3 AND studentGender='Male';

Query to get number of girls in class3:

SELECT Count(studentGender) AS NumberofGirls FROM student WHERE studentClass=3 AND studentGender='Female';

Report 4:

Query to get a student' record:

SELECT * FROM student WHERE studentID='$studentID';

Query to get siblings:

SELECT studentName FROM student WHERE fatherCNIC IN(SELECT fatherCNIC FROM student WHERE studentName = '$studentName') AND studentName <> '$studentName';

Report 5:

Query to get a student' record:

SELECT * FROM student WHERE fatherCNIC='$fatherID' AND motherCNIC = '$motherID;