Cp2

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L1S23BSCS0324

Sorry time was short could’nt write it down , submitting as perfomed on mySql.

create database cp2;

use cp2;

create table Staff\_Member(

F\_Name varchar(255) not null,

L\_name varchar(255),

User\_No varchar(255),

constraint pk\_Staff\_Member primary key(User\_No)

);

create table Student(

F\_Name varchar(255) not null,

L\_Name varchar(255),

User\_No varchar(255),

Project\_No varchar(255),

Super\_No varchar(255),

Assessor1 varchar(255),

Assessor2 varchar(255),

constraint pk\_Student primary key(User\_No),

constraint fk\_StaffMember\_Student foreign key(Super\_No) references Staff\_Member(User\_No) on delete set null on update cascade

);

create table Project(

Proj\_No varchar(255),

Project\_Name varchar(255) not null,

Levels int not null check(Levels>0 and Levels<10),

Keywords varchar(255),

Description varchar(255),

constraint pk\_Project primary key(Proj\_No)

);

/\* adding foreign key to student table by altering the table \*/

alter table Student

add constraint fk\_Project\_Student foreign key(Project\_No) references Project(Proj\_No) on delete set null on update cascade;

/\* composite primary key both stud user no and exam no(partial key) are together making up the

composite primary key for this table.\*/

create table Exam(

Stud\_User\_No varchar(255),

Exam\_No varchar(255),

`Time` TIME ,

`Day` DATE,

Room\_No int check(Room\_No>0 and Room\_No<20),

constraint pk\_Exam primary key(Exam\_No , Stud\_User\_No),

constraint fk\_Student\_Exam foreign key(Stud\_User\_No) references Student(User\_NO) on update cascade on delete cascade

);

/\* <<<<<<<<<<<<< not related>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>\*/

/\* <<<<<<<<< converted all the varchar datatype to int >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>\*/

/\*changing datatype of user\_no from and avoiding referntial integrity\*/

alter table Student

drop foreign key fk\_StaffMember\_Student;

alter table Staff\_Member

modify User\_NO int;

alter table Student

modify Super\_No int;

alter table Student

add constraint foreign key(Super\_No) references Staff\_Member(User\_No) on delete set null on update cascade;

show columns from Staff\_Member;

show columns from Student;

/\* doing the same for project \*/

alter table Student

drop foreign key fk\_Project\_Student;

alter table Student

modify Project\_No int;

alter table Project

modify Proj\_No int;

alter table Student

add constraint fk\_Project\_Student foreign key(Project\_No) references Project(Proj\_No) on delete cascade on update cascade;

show columns from Student;

show columns from Project;

/\* altering the last remaining stud\_user\_no inside exam\*/

alter table Exam

drop foreign key fk\_Student\_Exam;

alter table Exam

modify Stud\_User\_No int;

alter table Student

modify User\_No int;

alter table Exam

add constraint fk\_Exam\_Student foreign key(Stud\_User\_No) references Student(User\_No) on delete cascade on update cascade;

show columns from Exam;

show columns from Student;

/\* <<<<<<<<< not related >>>>>>>>>>>>>>>>>>>>>>>\*/

/\*<<<<<<<<<< converted all the varchar to int >>>>>>>>>>>>>>>>>\*/

/\* <<<<<<<<<<<<<< 2 . POPULATE SENSIBLE DATA INTO THE RELATIIONS>>>>>>>>>>>>>>>>>>>>>>\*/

show columns from Staff\_Member;

insert into Staff\_Member

values

('Naeem' , 'Sabir' , 2001),

('Orangzaib' , 'Khan' , 2002),

('Mohsin' , 'Ghaffar Ghouri' , 2003 ) ,

('Waqas' , 'Ahmed' , 2004),

('Ayesha' , 'Zaheer' , 2005);

select\* from Staff\_Member;

show columns from Student;

insert into Student

values

('Saad' , 'Salman' , 1010 , null , 2001 , 'ali' , 'abbas' ) ,

('Abdul' , 'Muiz' , 1011 , null , 2002 , 'ali' , 'abbas' ),

('Muqaddas' , 'Hussain' , 1012 , null , 2003 , 'ali' , 'abbas' ),

('Kaun' , 'Talha' , 1013 , null , 2004 , 'ali' , 'abbas' ) ,

('Fahad' , 'Rizvi' , 1014 , null , 2005 , 'ali' , 'abbas' ) ;

select\* from Student;

show columns from Project;

insert into Project

values

(10 , 'Web' , 3 , 'web\_dev' , 'project related to web development'),

(1 , 'IOS' , 5 , 'ios\_dev' , 'project related to ios app development'),

(2 , 'Andriod' , 4 , 'andriod\_dev' , 'project realted to android app development'),

(3 , 'Ai' , 7 , 'AI\_ML' , 'project realted to machine learning and artifical intelligence'),

(4 , 'Cyber Security' , 6 , 'Security' , 'project related to cyber securtiy' );

select Proj\_No,Project\_Name,Levels,Keywords,Description

from Project;

/\* adding values where we left null, previous time \*/

show columns from Student;

select\* from Student;

update Student

set Project\_No = 10

where User\_No = 1010;

update Student

set Project\_No = 1

where User\_No = 1011;

update Student

set Project\_No = 2

where User\_No = 1012;

update Student

set Project\_No = 3

where User\_No = 1013;

update Student

set Project\_No = 4

where User\_No = 1014;

/\* inserting values into the final table exam\*/

alter table Exam

modify Exam\_No int; /\* converted the datatpye for exam to int \*/

show columns from Exam;

insert into Exam

values

(1010 , 1 , '12:30:00' , '2024-12-01' , 005),

(1011 , 2 , '12:30:00' , '2024-12-01' , 006),

(1012 , 3 , '12:30:00' , '2024-12-01' , 007),

(1013 , 4 , '12:30:00' , '2024-12-01' , 008 ),

(1014 , 5 , '12:30:00' , '2024-12-01' , 009);

select\* from Exam;

/\* <<<<<<<<<<<<<<<<<<<<<<<<<< 3 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>\*/

select\* from Student;

delete

from Student

where Project\_No = 10; /\* deleted the entire info of the student saad :( \*/

select\* from Student;

select\* from Exam; /\* as i has choosen on delete cascade , it also deleted the entire tuple in the exam relation where the user id 1011(saad) resided \*/

/\* <<<<<<<<<<<<<<<<<<<<<<<<<< 4 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>\*/

select\* from Project;

update Project

set Levels = 5

where Project\_Name ='Andriod'; /\* updated the android level from 4 to 5 \*/

select\* from Project;

/\* <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<< 5(1.) >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>\*/

select\* from student;

insert into Student

values

('Saad' , 'Salman' , 1010 , 10 , 2001 , 'ali' , 'abbas' );

insert into Exam

values

(1010 , 1 , '12:30:00' , '2024-12-01' , 005);

select\* from Exam;

select `Time`,day

from Exam

where Stud\_User\_No = 1010 and Room\_No = 5;

/\* as this was previously deleted so i readded the data and then displayed it \*/

/\* <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<< 5(2.) >>>>>>>>>>>>>>>>>>>>>>>>>>>> \*/

select Project\_Name

from Project

order by Project\_Name;

/\*<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<< 5(3.) >>>>>>>>>>>>>>>>>>>>>>>>>>>\*/

select F\_Name , L\_Name

from Staff\_Member

where F\_Name like 'a%a' and

L\_Name like '%a%';

/\*<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<< 5(4.) >>>>>>>>>>>>>>>>>>>>>>>>>>\*/

select\* from Student;

select F\_name , L\_Name

from Student

/\*where Super\_No = null; NOT THE CORRECT WAY TO CHECK NULL \*/

where Super\_no is NULL;

/\* <<<<<<<<<<<<<<<<<<<<<<<<<<<<< 5(5.) >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>\*/

select Stud\_User\_No

from Exam

where Room\_No>=5 and Room\_No<=9;