**Primary Key, Foriegn Key Joins (inner, multiple), Group By , Having Clause, SubQuery, Exist & Not Exists, Union/Union All, If/Case Statement, Update using Case Statement**

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**Table#1**

create table courses(

course\_id int,

course\_name varchar(255),

primary key (course\_id)

);

insert into courses(course\_id, course\_name)

values(1, "chemistry"),

(2, "english"),

(3, "maths"),

(4, "physics"),

(5, "biology");

**Table#2**

create table city(

city\_id int,

city\_name varchar(255),

primary key (city\_id)

);

insert into city(city\_id, city\_name)

values(1, "lahore"),

(2, "karachi"),

(3, "multan"),

(4, "islamabad"),

(5, "peshawar");

**Table#3 (Foriegn key)**

create table students(

student\_id int,

student\_name varchar(255),

age int,

courses int,

city int,

foreign key(courses) references courses(course\_id),

foreign key(city) references city(city\_id)

);

insert into students(student\_id, student\_name, age, courses, city)

values(1, "Ali",18, 1, 5),

(2, "Iqbal", 18, 1, 5),

(3, "Ehsaan", 18, 2, 4),

(4, "Bilal", 19, 2, 4),

(5, "Ameer", 19, 3, 3),

(6, "Husnain", 19, 3, 3),

(7, "Zunair", 20, 4, 2),

(8, "Waqi", 20, 4, 2),

(9, "Zohaib", 21, 5, 1),

(10, "Uzair", 21, 5, 1);

**Query#1 Inner join, Multiple Join**

select \* from students

inner join courses

on students.courses = courses.course\_id

inner join city

on students.city = city.city\_id;

**Query#2 Group By**

select courses.course\_name, count(courses)

from students

inner join courses

on students.courses = courses.course\_id

group by courses;

**Query#3 Group By with Having Clause**

select courses.course\_name, count(courses)

from students

inner join courses

on students.courses = courses.course\_id

group by courses

having count(courses) > 2;

**Query#4 SubQuery/Nested Query**

select \* from students

where city = (select city\_id from city where city\_name = "lahore");

select \* from students

where city in (select city\_id from city where city\_name in ("lahore","islamabad"));

**Query#5 Exists/Not Exists**

select \* from students

where exists (select city\_id from city where city\_name = "karachi");

select \* from students

where not exists (select city\_id from city where city\_name = "karachi");

**Query#6 Union/Union All**

use lecture8;

select book\_id, title from books

union all

select employee\_id, full\_name from employee;

select book\_id, title from books

union

select employee\_id, full\_name from employee;

**Query#7 If/Case Statement**

select student\_id, student\_name, age,

if(age >= 20, "adult","teenager")AS age\_group

from students;

select student\_id, student\_name, age,

case

when age=18 then "teen 18"

when age=19 then "teen 19"

when age=20 then "adult 20"

else "adult 21"

end as age\_groups

from students;

**Query#8 Update using Case Statement**

update students set

age= (case student\_id

when 6 then 20

when 9 then 20

end)

where student\_id in (6, 9);