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INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
يُونِيسَيْتِي إِسْلَامُ، إِنْتَارَا إِخْسِيَا مِلْدِسِيَا

Garden of Knowledge and Virtue

KULLIYAH OF INFORMATION & COMMUNICATION TECHNOLOGY

INFO 2103

DATABASE PROGRAMMING

SEMESTER 2, 2019/2020

SECTION 2

Group Project:

CLASSROOM SCHEDULE MAKER

PREPARED BY:

GROUP 6

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SUBMITTED TO

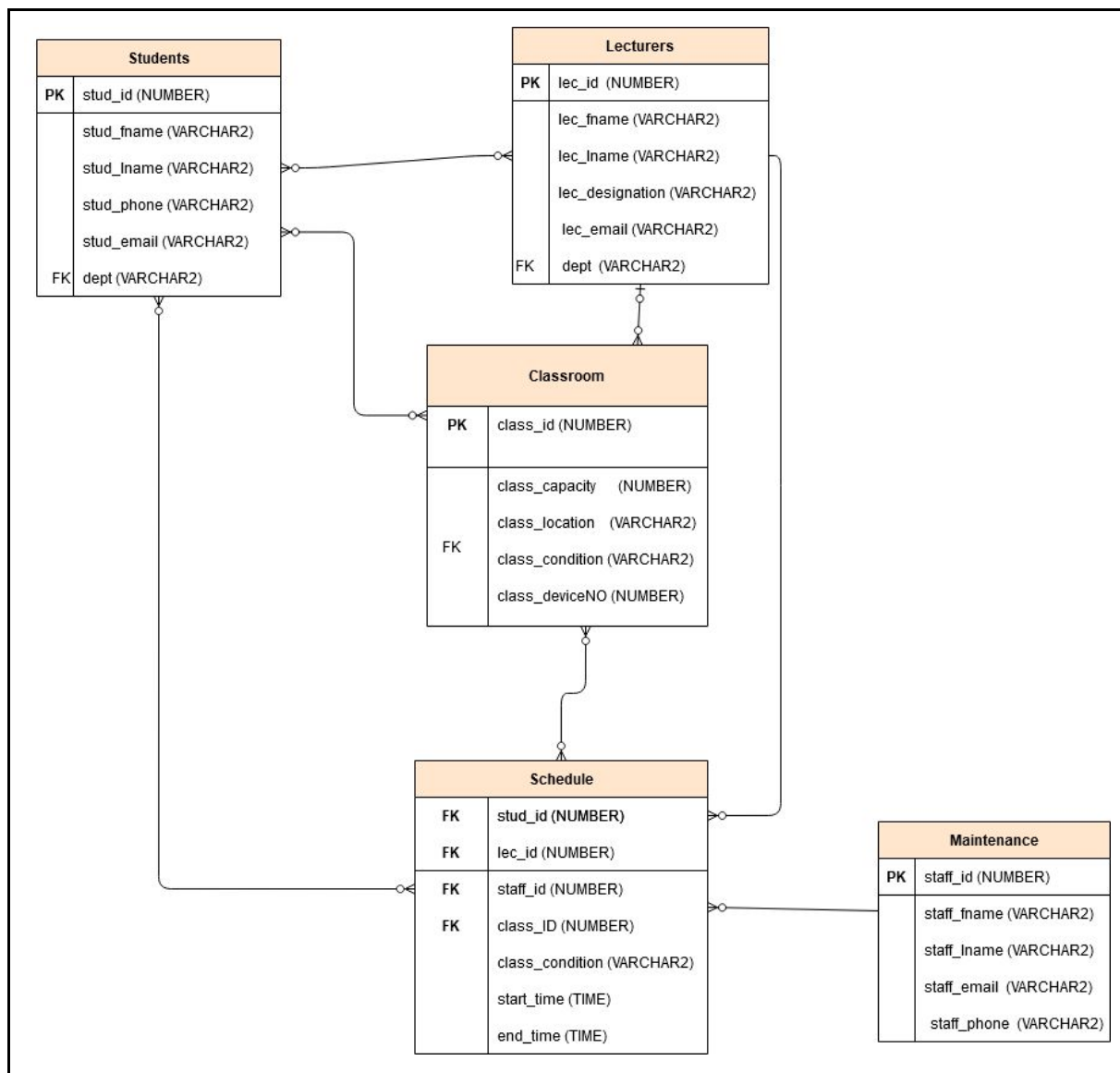
ZAINATUL SHIMA ABDULLAH SHIMA ABDULLAH

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TASK 1 : SCENARIO

Classroom schedule maker is a database that will help the lecturers, staff and students to book a classroom for various activities such as examination, discussion, revision, maintenance. Classroom can only be booked if it is not under any activity mentioned above. Schedule can be stated as starting time and ending time along with the purpose of booking.

Task 2: Entity Relation Diagram (ER Diagram)



TASK 3: Data Dictionary

Students

ATTRIBUTE NAME	DATA TYPE	NULL
stud_id	NUMBER	NO (PK)
stud_fname	VARCHAR2(15)	NO
stud_lname	VARCHAR2(15)	NO
stud_phone	NUMBER	YES
stud_email	VARCHAR2(30)	YES
dept	VARCHAR2(10)	NO

Lecturers

ATTRIBUTE NAME	DATA TYPE	NULL
lec_id	NUMBER	NO (PK)
lec_fname	VARCHAR2(15)	NO
lec_lname	VARCHAR2(15)	NO
lec_designation	VARCHAR(30)	YES
lec_email	VARCHAR2(30)	YES
dept	VARCHAR2(10)	NO

Maintenance

ATTRIBUTE NAME	DATA TYPE	NULL
staff_id	NUMBER	NO(PK)
staff_fname	VARCHAR(15)	NO
staff_lname	VARCHAR(15)	NO
staff_email	VARCHAR(30)	YES
staff_phone	NUMBER	YES

Classroom

ATTRIBUTE NAME	DATA TYPE	NULL
class_id	NUMBER	NO(PK)
class_capacity	NUMBER	NO
class_location	VARCHAR2(15)	YES
class_condition	VARCHAR2(30)	NO
class_deviceNO	NUMBER	YES

Schedule

ATTRIBUTE NAME	DATA TYPE	NULL
stud_id	NUMBER	YES(FK)
lec_id	NUMBER	YES(FK)
class_id	NUMBER	NO(FK)
staff_id	NUMBER	YES(FK)
class_condition	VARCHAR2(30)	NO
start_time	TIMESTAMP	YES
end_time	TIMESTAMP	YES

TASK 4: Create Required Tables

```
drop table Schedule;  
drop table Students;  
drop table Lecturers;  
drop table Classroom;  
drop table maintenance;  
  
create table Students(  
  stud_id number primary key not null,  
  stud_fname varchar2(15) not null,  
  stud_lname varchar2(15) not null,  
  stud_phone number,  
  stud_email varchar2(30),
```

```

dept varchar2(10) not null
);

create table Lecturers(
lec_id number primary key not null,
lec_fname varchar2(15) not null,
lec_lname varchar2(15) not null,
lec_designation varchar2(30) ,
lec_email varchar2(30),
dept varchar2(10) not null
);

create table Classroom(
class_id number primary key not null,
class_capacity number,
class_location varchar2(15),
class_condition VARCHAR2(30) not null,
class_deviceNO number
);

create table maintenance(
staff_id number primary key not null,
staff_fname varchar2(15) not null,
staff_lname varchar2(15) not null,
staff_email varchar2(30),
staff_phone number
);

create table Schedule(
stud_id number,
lec_id number,
class_id number not null,
staff_id number,
class_condition VARCHAR2(30) not null,
start_time TIMESTAMP,
end_time TIMESTAMP,
FOREIGN key(stud_id) REFERENCES Students(stud_id),
FOREIGN key(lec_id) REFERENCES Lecturers(lec_id),
FOREIGN key(class_id) REFERENCES Classroom(class_id),
FOREIGN key(staff_id) REFERENCES maintenance(staff_id)
);

--view description of table
desc schedule
desc Students
desc Lecturers
desc Classroom
desc maintenance

```

TASK 5: Populating Tables By Inserting Data

```
--insert into students table
insert into students values
(1625331,'Mahanad','Chamie',0114466243,'Mahanad@hotmail.com','CS');
insert into students values (1721485,'Fayek
Alvi','Rahman',0114434572,'fayek.lucse@gmail.com','CS');
insert into students values (1623433,'Saad','Abu
Sayed',0114423272,'saad@gmail.com','CS');
insert into students values
(1712235,'Amina','Ahmed',0123234572,'amina@hmail.com','CS');
insert into students values
(1716763,'Tanvir','Hasan',0121834334,'tanvir@ymail.com','GS');
insert into students values (1721834,'Tahmid','Lodi',0174434572,'tahmid@gmail.com','IT');
insert into students values
(1621485,'Junayed','Khan',0112234572,'junayed162@gmail.com','GS');
insert into students values
(1725334,'Zubair','Mohammad',0117273272,'kmzubair@gmail.com','CS');
insert into students values (1723232,'Ikram','Kayes',0182734722,'ikram@ymail.com','IT');
insert into students values (1725314,'Ejmen','Ramic',0161213272,'ejmen@gmail.com','IT');

--insert into lecturers table
insert into Lecturers values (6184,'Killua','Zoldyck','Asst. Prof','killua@gmail.com','CS');
insert into Lecturers values (5123,'Gon','Freecss','Asst. Prof','gon@gmail.com','IT');
insert into Lecturers values (2323,'Luffy','Delowar','Asst. Prof','luffy@gmail.com','IT');
insert into Lecturers values (5454,'Lelouch','Lamperouge','Asst.
Prof','lelouch@gmail.com','CS');
insert into Lecturers values (2356,'Light','Yagami','Assoc. Prof','light@gmail.com','IT');
insert into Lecturers values (7876,'Toshiro','Hitsugaya','Matriculation
Lecturer','Toshiro@iium.edu.my','GS');
insert into Lecturers values (3184,'Shinichi ','Kudo','Professor','Kudo@iium.edu.my','CS');
insert into Lecturers values (5928,'Roy','Mustang','Assoc.
Prof','jaki.fayek@live.iium.edu.my','GS');
insert into Lecturers values (2341,'Imad','Fakri','Professor','imadf@iium.edu.my','CS');
insert into Lecturers values (8544,'Zainatul Shima','Abdullah','Asst.
Prof','shima@iium.edu.my','IT');

--insert into classroom table
insert into Classroom values (121,50,'E5-121','Under Maintenance',NULL);
insert into Classroom values (122,40,'E4-122','Test',40);
insert into Classroom values (125,35,'D4-125','Class',35);
```

```

insert into Classroom values (89,40,'B3-89','Class',35);
insert into Classroom values (101,40,'C4-101','Quiz',40);
insert into Classroom values (117,50,'E4-117','Under Maintenance',NULL);
insert into Classroom values (118,40,'E4-118','Discussion',0);
insert into Classroom values (107,60,'C2-107','Class',0);
insert into Classroom values (78,50,'B2-78','Test',50);
insert into Classroom values (98,35,'B5-98','Quiz',35);

--insert into maintenance
insert into maintenance values (1234,'Halim','Khan','halim@gmail.com',0138492344);
insert into maintenance values (1123,'Lichi','Ahmed','lichi@gmail.com',0132323244);
insert into maintenance values (1623,'Kacchi','Rahman','kachi@gmail.com',0146592344);
insert into maintenance values (1934,'Onigiri','Sheikh','onigiri@gmail.com',0135764344);
insert into maintenance values
(1424,'Naruto','Uzumaki','Naruto@gmail.com',0169892344);
insert into maintenance values (1594,'Sasuke','Uchiha','Uchiha@gmail.com',0198672344);
insert into maintenance values (1093,'Ichigo','Kurosaki','Ichigo@gmail.com',0138569344);
insert into maintenance values (1034,'Izuke','Midoriya','Izuke@gmail.com',0100112344);
insert into maintenance values
(1991,'Mikasa','Ackerman','Mikasa@gmail.com',0139823244);
insert into maintenance values
(1221,'Gintoki','Sakata','Gintoki@gmail.com',01380777544);

-- insert into schedule
insert into schedule values (null,null,121,1594,'Under Maintenance',null,null);
insert into schedule values (null,6184,122,null,'Test',To_DATE('2020-Aug-01
14:00:00','YYYY-MON-DD HH24:MI:SS'),To_DATE('2020-JUNE-01
17:00:00','YYYY-MON-DD HH24:MI:SS'));
insert into schedule values (null,2356,125,null,'class',TIMESTAMP '2020-08-02
10:00:00',TIMESTAMP '2020-08-02 12:00:00');
insert into schedule values (null,2341,89,null,'class',TIMESTAMP '2020-07-26
14:00:05',TIMESTAMP '2020-07-26 16:45:05');
insert into schedule values (null,8544,101,null,'Quiz',TIMESTAMP '2020-07-27
17:00:00',TIMESTAMP '2020-07-27 19:00:00');
insert into schedule values (null,null,117,1034,'Under Maintenance',NULL,NULL);
insert into schedule values (1721485,null,118,null,'Discussion',TIMESTAMP '2020-08-01
08:00:00',TIMESTAMP '2020-08-01 11:00:50');
insert into schedule values (null,6184,107,null,'Class',TIMESTAMP '2020-08-03
20:00:00',TIMESTAMP '2020-08-03 22:25:06');
insert into schedule values (null,5454,78,null,'Test',TIMESTAMP '2020-08-09
12:00:00',TIMESTAMP '2020-08-09 15:00:00');
insert into schedule values (null,3184,98,null,'Quiz',TIMESTAMP '2020-08-08
11:00:00',TIMESTAMP '2020-08-08 12:30:30');
insert into schedule values (null,2341,98,null,'class',TIMESTAMP '2020-07-26
14:00:05',TIMESTAMP '2020-07-26 16:45:05');
insert into schedule values (null,2356,122,null,'class',TIMESTAMP '2020-08-02
10:00:00',TIMESTAMP '2020-08-02 12:00:00');
insert into schedule values (1721485,null,118,null,'Discussion',TIMESTAMP '2020-08-01
08:00:00',TIMESTAMP '2020-08-01 11:00:50');
insert into schedule values (1723232,null,118,null,'Discussion',TIMESTAMP '2020-06-06

```



```

010:00:00',TIMESTAMP '2020-06-06 14:00:50');
insert into schedule values (1712235,null,118,null,'Discussion',TIMESTAMP '2020-08-07
14:00:00',TIMESTAMP '2020-08-07 15:00:50');
insert into schedule values (null,5928,98,null,'class',TIMESTAMP '2020-08-10
15:00:05',TIMESTAMP '2020-08-10 16:45:05');
insert into schedule values (null,6184,98,null,'class',TIMESTAMP '2020-07-25
13:00:05',TIMESTAMP '2020-07-25 16:45:05');
insert into schedule values (null,6184,118,null,'class',TIMESTAMP '2020-07-15
13:00:05',TIMESTAMP '2020-07-15 16:45:05');

commit;

--view table data
select * from maintenance;
select * from classroom;
select * from lecturers;
select * from students;
select * from schedule;

```

Tables Created:

- P.S: These tables are viewed after updating from queries and functions.

	STUD_ID	STUD_FNAME	STUD_LNAME	STUD_PHONE	STUD_EMAIL	DEPT
1	1625331	Mahanad	Chamie	114466243	Mahanad@hotmail.com	CS
2	1721485	Fayek	Rahman	114434572	fayek.lucse@gmail.com	CS
3	1623433	Saad	Abu Sayed	114423272	saad@gmail.com	CS
4	1712235	Amina	Ahmed	123234572	amina@hmail.com	CS
5	1716763	Tanvir	Hasan	121834334	tanvir@ymail.com	GS
6	1721834	Tahmid	Lodi	174434572	tahmid@gmail.com	IT
7	1621485	Junayed	Khan	112234572	junayed162@gmail.com	GS
8	1725334	Zubair	Mohammad	117273272	kmzubair@gmail.com	CS
9	1723232	Ikram	Kayes	182734722	ikram@ymail.com	IT
10	1725314	Ejmen	Ramic	161213272	ejmen@gmail.com	IT

Figure: Students Datatable

	LEC_ID	LEC_FNAME	LEC_LNAME	LEC_DESIGNATION	LEC_EMAIL	DEPT
1	6184	Killua	Zoldyck	Asst. Prof	killua@gmail.com	CS
2	5123	Gon	Freeccs	Asst. Prof	gon@gmail.com	IT
3	2323	Luffy	Delowar	Asst. Prof	luffy@gmail.com	IT
4	5454	Lelouch	Lamperouge	Asst. Prof	lelouch@gmail.com	CS
5	2356	Light	Yagami	Assoc. Prof	light@gmail.com	IT
6	7876	Toshiro	Hitsugaya	Matriculation Lecturer	Toshiro@iium.edu.my	GS
7	3184	Shinichi	Kudo	Professor	Kudo@iium.edu.my	CS
8	5928	Roy	Mustang	Assoc. Prof	jaki.fayek@live.iium.edu.my	GS
9	2341	Imad	Fakri	Professor	imadf@iium.edu.my	CS
10	8544	Zainatul Shima	Abdullah	Asst. Prof	shima@iium.edu.my	IT

Figure: Lecturers Datatable

	CLASS_ID	CLASS_CAPACITY	CLASS_LOCATION	CLASS_CONDITION	CLASS_DEVICENO
1	121	50	E5-121	Under Maintenance	(null)
2	122	40	E4-122	Test	40
3	125	35	D4-125	Class	35
4	89	40	B3-89	Class	35
5	101	40	C4-101	Quiz	40
6	117	50	E4-117	Under Maintenance	(null)
7	118	40	E4-118	Discussion	0
8	107	60	C2-107	Class	0
9	78	50	B2-78	Test	50
10	98	35	B5-98	Quiz	35

Figure: Classroom Datatable

	STAFF_ID	STAFF_FNAME	STAFF_LNAME	STAFF_EMAIL	STAFF_PHONE
1	1234	Halim	Khan	halim@gmail.com	138492344
2	1123	Lichi	Ahmed	lichi@gmail.com	132323244
3	1623	Kacchi	Rahman	kachi@gmail.com	146592344
4	1934	Onigiri	Sheikh	onigiri@gmail.com	135764344
5	1424	Naruto	Uzumaki	Naruto@gmail.com	169892344
6	1594	Sasuke	Uchiha	Uchiha@gmail.com	198672344
7	1093	Ichigo	Kurosaki	Ichigo@gmail.com	138569344
8	1034	Izuke	Midoriya	Izuke@gmail.com	100112344
9	1991	Mikasa	Ackerman	Mikasa@gmail.com	139823244
10	1221	Gintoki	Sakata	Gintoki@gmail.com	1380777544

Figure: Maintenance Datatable

	STUD_ID	LEC_ID	CLASS_ID	STAFF_ID	CLASS_CONDITION	START_TIME	END_TIME
1	(null)	(null)	121	1594	Under Maintenance	(null)	(null)
2	(null)	6184	122	(null)	Test	01/08/2020 14:00:00.000000000	01/06/2020 17:00:00.000000000
3	(null)	2356	125	(null)	class	02/08/2020 10:00:00.000000000	02/08/2020 12:00:00.000000000
4	(null)	2341	89	(null)	class	26/07/2020 14:00:05.000000000	26/07/2020 16:45:05.000000000
5	(null)	8544	101	(null)	Quiz	27/07/2020 17:00:00.000000000	27/07/2020 19:00:00.000000000
6	(null)	(null)	117	1034	Under Maintenance	(null)	(null)
7	1721485	(null)	118	(null)	Discussion	01/08/2020 08:00:00.000000000	01/08/2020 11:00:50.000000000
8	(null)	6184	107	(null)	Class	03/08/2020 20:00:00.000000000	03/08/2020 22:25:06.000000000
9	(null)	5454	78	(null)	Test	09/08/2020 12:00:00.000000000	09/08/2020 15:00:00.000000000
10	(null)	3184	98	(null)	Quiz	08/08/2020 11:00:00.000000000	08/08/2020 12:30:30.000000000
11	(null)	2341	98	(null)	class	26/07/2020 14:00:05.000000000	26/07/2020 16:45:05.000000000
12	(null)	2356	122	(null)	class	02/08/2020 10:00:00.000000000	02/08/2020 12:00:00.000000000
13	1721485	(null)	118	(null)	Discussion	01/08/2020 08:00:00.000000000	01/08/2020 11:00:50.000000000
14	1712235	(null)	118	(null)	Discussion	07/08/2020 14:00:00.000000000	07/08/2020 15:00:50.000000000
15	(null)	5928	98	(null)	class	10/08/2020 15:00:05.000000000	10/08/2020 16:45:05.000000000
16	(null)	6184	98	(null)	class	25/07/2020 13:00:05.000000000	25/07/2020 16:45:05.000000000
17	(null)	6184	118	(null)	class	15/07/2020 13:00:05.000000000	15/07/2020 16:45:05.000000000
18	1625331	(null)	78	(null)	Discussion	01/08/2020 22:00:00.000000000	01/08/2020 22:45:00.000000000

Figure: Schedule Datatable

Task 6: SQL statements

- Print lecturer first name and last name that have booked a class. Prompt the user to insert class ID.

```
select lec_fname,lec_lname from lecturers where lec_id in
(select lec_id from schedule where class_id = &class_id);
```

```
SQL> select lec_fname,lec_lname from lecturers where lec_id in
2      (select lec_id from schedule where class_id = &class_id);
Enter value for class_id: 122
old 2:      (select lec_id from schedule where class_id = &class_id)
new 2:      (select lec_id from schedule where class_id = 122)

LEC_FNAME      LEC_LNAME
-----
Light           Yagami
Killua          Zoldyck
```

- Print lecture first name and last name who have booked the same classroom as the student.

```
select lec_fname,lec_lname from lecturers where lec_id =
(select lec_id from schedule where lec_id is not NULL AND class_id =
(select class_id from schedule where stud_id =
(select stud_id from students where stud_fname = 'Fayek Alvi')
group by class_id)
);
```

```
SQL> select lec_fname,lec_lname from lecturers where lec_id =
2      (select lec_id from schedule where lec_id is not NULL AND class_id =
3      (select class_id from schedule where stud_id =
4      (select stud_id from students where stud_fname = 'Fayek Alvi')
5      group by class_id)
6      );

LEC_FNAME      LEC_LNAME
-----
Killua          Zoldyck
```

- Update student data by prompting user to enter student id.

```
update students set stud_fname = 'Fayek' where stud_id = &student_id;
```

Before:

2	1721485	Fayek Alvi Rahman	114434572	fayek.lucse@gmail.com CS
---	---------	-------------------	-----------	--------------------------

After: 2 1721485 Fayek Rahman 114434572 fayek.lucse@gmail.com CS

- Prompt the user to delete a booking by entering booking start time (YYYY-MM-DD HH24:MI:SS) and class_id.

```
delete from schedule where start_time = timestamp'&start_time' AND class_id = &class_id;
```

	STUD_ID	LEC_ID	CLASS_ID	STAFF_ID	CLASS_CONDITION	START_TIME	END_TIME
1	(null)	(null)	121	1594	Under Maintenance	(null)	(null)
2	(null)	6184	122	(null)	Test	01/08/2020 14:00:00.000000000	01/06/2020 17:00:00.000000000
3	(null)	2356	125	(null)	class	02/08/2020 10:00:00.000000000	02/08/2020 12:00:00.000000000
4	(null)	2341	89	(null)	class	26/07/2020 14:00:05.000000000	26/07/2020 16:45:05.000000000
5	(null)	8544	101	(null)	Quiz	27/07/2020 17:00:00.000000000	27/07/2020 19:00:00.000000000
6	(null)	(null)	117	1034	Under Maintenance	(null)	(null)
7	1721485	(null)	118	(null)	Discussion	01/08/2020 08:00:00.000000000	01/08/2020 11:00:50.000000000
8	(null)	6184	107	(null)	Class	03/08/2020 20:00:00.000000000	03/08/2020 22:25:06.000000000
9	(null)	5454	78	(null)	Test	09/08/2020 12:00:00.000000000	09/08/2020 15:00:00.000000000
10	(null)	3184	98	(null)	Quiz	08/08/2020 11:00:00.000000000	08/08/2020 12:30:30.000000000
11	(null)	2341	98	(null)	class	26/07/2020 14:00:05.000000000	26/07/2020 16:45:05.000000000
12	(null)	2356	122	(null)	class	02/08/2020 10:00:00.000000000	02/08/2020 12:00:00.000000000
13	1721485	(null)	118	(null)	Discussion	01/08/2020 08:00:00.000000000	01/08/2020 11:00:50.000000000
14	1712235	(null)	118	(null)	Discussion	07/08/2020 14:00:00.000000000	07/08/2020 15:00:50.000000000
15	(null)	5928	98	(null)	class	10/08/2020 15:00:05.000000000	10/08/2020 16:45:05.000000000
16	(null)	6184	98	(null)	class	25/07/2020 13:00:05.000000000	25/07/2020 16:45:05.000000000
17	(null)	6184	118	(null)	class	15/07/2020 13:00:05.000000000	15/07/2020 16:45:05.000000000

```
SQL> delete from schedule where start_time = timestamp'&start_time' AND class_id = &class_id;
Enter value for start_time: 2020-08-02 10:00:00
Enter value for class_id: 125
old 1: delete from schedule where start_time = timestamp'&start_time' AND class_id = &class_id
new 1: delete from schedule where start_time = timestamp'2020-08-02 10:00:00' AND class_id = 125

1 row deleted.
```

	STUD_ID	LEC_ID	CLASS_ID	STAFF_ID	CLASS_CONDITION	START_TIME	END_TIME
1	(null)	(null)	121	1594	Under Maintenance	(null)	(null)
2	(null)	6184	122	(null)	Test	01/08/2020 14:00:00.000000000	01/06/2020 17:00:00.000000000
3	(null)	2341	89	(null)	class	26/07/2020 14:00:05.000000000	26/07/2020 16:45:05.000000000
4	(null)	8544	101	(null)	Quiz	27/07/2020 17:00:00.000000000	27/07/2020 19:00:00.000000000
5	(null)	(null)	117	1034	Under Maintenance	(null)	(null)
6	1721485	(null)	118	(null)	Discussion	01/08/2020 08:00:00.000000000	01/08/2020 11:00:50.000000000
7	(null)	6184	107	(null)	Class	03/08/2020 20:00:00.000000000	03/08/2020 22:25:06.000000000
8	(null)	5454	78	(null)	Test	09/08/2020 12:00:00.000000000	09/08/2020 15:00:00.000000000
9	(null)	3184	98	(null)	Quiz	08/08/2020 11:00:00.000000000	08/08/2020 12:30:30.000000000
10	(null)	2341	98	(null)	class	26/07/2020 14:00:05.000000000	26/07/2020 16:45:05.000000000
11	(null)	2356	122	(null)	class	02/08/2020 10:00:00.000000000	02/08/2020 12:00:00.000000000
12	1721485	(null)	118	(null)	Discussion	01/08/2020 08:00:00.000000000	01/08/2020 11:00:50.000000000
13	1712235	(null)	118	(null)	Discussion	07/08/2020 14:00:00.000000000	07/08/2020 15:00:50.000000000
14	(null)	5928	98	(null)	class	10/08/2020 15:00:05.000000000	10/08/2020 16:45:05.000000000
15	(null)	6184	98	(null)	class	25/07/2020 13:00:05.000000000	25/07/2020 16:45:05.000000000
16	(null)	6184	118	(null)	class	15/07/2020 13:00:05.000000000	15/07/2020 16:45:05.000000000

TASK 7: Create Two Procedures

- Write a procedure to get the booked class id and location. Prompt the user to enter the student first name. Use an anonymous block to call the procedure.

```

SET SERVEROUTPUT ON
SET VERIFY OFF
ACCEPT fname PROMPT 'Enter Student First Name: '
CREATE OR REPLACE PROCEDURE displayData(fname students.stud_fname%TYPE)
AS
    classlocation classroom.class_location%TYPE;
    classID classroom.class_id%TYPE;
    studfname students.stud_fname%TYPE;
    studlname students.stud_lname%TYPE;
BEGIN
    select class_location into classlocation from classroom where class_id in
    (select class_id from schedule where stud_id =
    (select stud_id from students where stud_fname = fname));

    select stud_fname,stud_lname into studfname,studlname from students
    where stud_fname = fname;
    select class_id into classID from classroom where class_location = classlocation;

    DBMS_OUTPUT.PUT_LINE('Student Name: '||studfname||' '||studlname);
    DBMS_OUTPUT.PUT_LINE('Booked Class ID: '||classID);
    DBMS_OUTPUT.PUT_LINE('Location of Booked Classroom: '||classlocation);
END;
/

DECLARE
BEGIN
displayData('&fname');
END;
/

```

```

Procedure DISPLAYDATA compiled

Student Name: Fayek Rahman
Booked Class ID: 118
Location of Booked Classroom: E4-118

PL/SQL procedure successfully completed.

```

- Write a procedure to get the classroom id and booking details of a lecturer. Prompt the user to enter lecturer id. Use an anonymous block to call the procedure.

```

SET SERVEROUTPUT ON
SET VERIFY OFF

CREATE OR REPLACE PROCEDURE bookingdetails(lec_id schedule.lec_id%TYPE)
IS
    CURSOR class_curr IS
        SELECT class_ID, class_condition FROM schedule
        WHERE lec_id = lec_id
        order by class_ID;
    fname lecturers.lec_fname%TYPE;
    lname lecturers.lec_lname%TYPE;
BEGIN
    SELECT lec_fname, lec_lname INTO fname, lname FROM lecturers WHERE lec_id
= lec_id;
    DBMS_OUTPUT.PUT_LINE(fname||' '||lname||'('||lec_id||') has booked-');
    FOR clsID IN class_curr LOOP
        DBMS_OUTPUT.PUT_LINE(class_curr%ROWCOUNT||'. '||clsID.class_ID||'
('||clsID.class_condition||')');
    END LOOP;
END;
/

ACCEPT lec_id PROMPT 'Enter Lecturer ID: '
BEGIN
    bookingdetails(&lec_id);
END;
/

```

```

Procedure BOOKINGDETAILS compiled

Killua Zoldyck(6184) has booked-
1. 98 (class)
2. 107 (Class)
3. 118 (class)
4. 122 (Test)

PL/SQL procedure successfully completed.

```

TASK 8: Create two functions

Create a function that shows the booking details (start time, end time, classroom ID) and the scheduler's designation. Call the function from an anonymous block.

```

SET SERVEROUTPUT ON
SET VERIFY OFF

```

```

CREATE OR REPLACE FUNCTION checkschedule(
classid schedule.class_id%TYPE,
starttime schedule.start_time%TYPE,
endtime schedule.end_time%TYPE)
RETURN VARCHAR2
IS
user_type VARCHAR2(10);
stud_id students.stud_id%TYPE;
lec_id lecturers.lec_id%TYPE;
staff_id maintenance.staff_id%TYPE;
BEGIN
    SELECT stud_id,lec_id,staff_id INTO stud_id,lec_id,staff_id FROM schedule
WHERE start_time = starttime AND end_time = endtime AND class_id = classid;
    If stud_id IS NOT NULL THEN
        user_type := 'Student';
    ELSIF lec_id IS NOT NULL THEN
        user_type := 'Lecturer';
    ELSIF staff_id IS NOT NULL THEN
        user_type := 'Maintenance';
    END IF;
    RETURN user_type;
END;
/
ACCEPT classid PROMPT 'Enter Class ID: '
ACCEPT start PROMPT 'Enter Booking Start Time: '
ACCEPT end PROMPT 'Enter Booking End Time: '
Declare
    user_type varchar2(10);
    start_time timestamp := timestamp'&start';
    end_time timestamp := timestamp'&end';
    class_id number := &classid;
BEGIN
    user_type := checkschedule(class_id,start_time,end_time);
    DBMS_OUTPUT.PUT_LINE('The class room '||class_id||' was booked by a
'||user_type||'.');
    DBMS_OUTPUT.PUT_LINE('Start Time: '||TO_CHAR(start_time,'DD-MON-YYYY
HH24:MI:SS AM'));
    DBMS_OUTPUT.PUT_LINE('End Time: '||TO_CHAR(end_time,'DD-MON-YYYY
HH24:MI:SS AM'));
END;
/

```

```
Function CHECKSCHEDULE compiled
```

```
The class room 125 was booked by a Lecturer.
```

```
Start Time: 02-AUG-2020 10:00:00 AM
```

```
End Time: 02-AUG-2020 12:00:00 PM
```

```
PL/SQL procedure successfully completed.
```

- Create a function to add a new schedule to the schedule table. Use an anonymous block to call function and enter data.

```
SET SERVEROUTPUT ON
```

```
SET VERIFY OFF
```

```
CREATE OR REPLACE FUNCTION insertschedule(persontype  
students.stud_email%TYPE, personID schedule.class_id%TYPE,  
classid schedule.class_id%TYPE,  
classCondition schedule.class_condition%TYPE,  
starttime schedule.start_time%TYPE,  
endtime schedule.end_time%TYPE)  
RETURN VARCHAR2
```

```
IS
```

```
txt VARCHAR2(30) := 'New Schedule Inserted.';
```

```
BEGIN
```

```
    If lower(persontype) = 'student' THEN  
        INSERT INTO schedule VALUES  
(personID,null,classid,null,classCondition,starttime,endtime);  
    ELSIF lower(persontype) = 'lecturer' THEN  
        INSERT INTO schedule VALUES  
(null,personID,classid,null,classCondition,starttime,endtime);  
    ELSIF lower(persontype) = 'Maintenance' THEN  
        INSERT INTO schedule VALUES  
(null,null,classid,personID,classCondition,null,null);  
    END IF;  
    RETURN txt;
```

```
END;
```

```
/
```

```
ACCEPT occupation PROMPT 'Enter Occupation Type: '
```

```
ACCEPT id PROMPT 'Enter ID: '
```

```
ACCEPT classid PROMPT 'Enter Class Id you want to book: '
```

```
ACCEPT condition PROMPT 'Enter purpose of booking: '
```

```
ACCEPT start PROMPT 'Enter start time: '
```

```
ACCEPT end PROMPT 'Enter end time: '
```

```
Declare
```



```

        txt varchar2(30);
        persontype varchar2(30) := '&occupation';
        personID number := &id;
        class_id number := &classid;
        classcondition schedule.class_condition%TYPE := '&condition';
        start_time timestamp := timestamp'&start';
        end_time timestamp := timestamp'&end';
BEGIN
    txt :=
insertschedule(persontype,personID,class_id,classcondition,start_time,end_time);
        DBMS_OUTPUT.PUT_LINE(txt);
        DBMS_OUTPUT.PUT_LINE('Booking Details: ');
        DBMS_OUTPUT.PUT_LINE('Occupation: '||persontype);
        DBMS_OUTPUT.PUT_LINE('ID: '||personid);
        DBMS_OUTPUT.PUT_LINE('Class ID: '||class_id);
        DBMS_OUTPUT.PUT_LINE('Purpose: '||classcondition);
        DBMS_OUTPUT.PUT_LINE('Booking Start time:
'||TO_CHAR(start_time,'DD-MON-YYYY HH24:MI:SS AM'));
        DBMS_OUTPUT.PUT_LINE('Booking End Time:
'||TO_CHAR(end_time,'DD-MON-YYYY HH24:MI:SS AM'));
END;
/

--rollback;

```

```

New Schedule Inserted.
Booking Details:
Occupation: Student
ID: 1625331
Class ID: 78
Purpose: Discussion
Booking Start time: 01-AUG-2020 22:00:00 PM
Booking End Time: 01-AUG-2020 22:45:00 PM

```

TASK 9: Web Application

Connection method used to connect Web-service with local database:

```
<?php
$username = 'fanalis'; //database hostname
$password = 'freak';   //database password
$connection_string = 'localhost/xes'; //local database version
$connection = oci_connect($username,$password,$connection_string); //connection with web-service
?>
```

Figure 9.1: Creating Connection

Main page of web-service:

Classroom Schedule Maker

DashboardTeam

Classroom Schedule Maker

by JAKI & MAHANAD

Classroom schedule maker is a database that will help the lecturers,staff and students to book a classroom for various activities such as examination, discussion, revision, maintenance.
Classroom can only be booked if it is not under any activity mentioned above.
Schedule can be stated as starting time and ending time along with the purpose of booking.

Activities

Insert

Delete

Update

Tables

Students

Lecturers

Maintenance

Classroom

Schedule

Figure 9.2: Index Page

Creating connection to view tables:

```

<div class="table-responsive table mt-2" role="grid" aria-describedby="dataTable_info">
  <table class="table my-0" id="dataTable-1">
    <thead>
      <tr>
        <th>ID</th>
        <th>First Name</th>
        <th>Last Name</th>
        <th>Phone No</th>
        <th>Email</th>
        <th>Department</th>
      </tr>
    </thead>
    <?php
    $getres = oci_parse($connection,'SELECT * FROM students');
    oci_execute($getres);
    while(($row=oci_fetch_array($getres,OCI_BOTH)) != false){
      ?>
      <tbody>
        <tr>
          <td><?php echo $row[0] ?></td>
          <td><?php echo $row[1] ?></td>
          <td><?php echo $row[2] ?></td>
          <td><?php echo $row[3] ?></td>
          <td><?php echo $row[4] ?></td>
          <td><?php echo $row[5] ?></td>
          <td><a href="delete_process.php?userid=<?php echo $row["class_id"]; ?>">Delete</a></td>
        </tr>
      </tbody>
    <?php
    }
    oci_free_statement($getres);
    oci_close($connection);
    ?>
  </table>

```

Figure 9.3: Connection between php and html

Students Table in web-service:

Classroom Schedule Maker									
								Dashboard	Team
Students									
Show 10 entries		Search: <input type="text"/>							
ID	First Name	Last Name	Phone No	Email	Department				
1625331	Mahanad	Chamie	114466243	Mahanad@hotmail.com	CS	Delete			
1721485	Fayek Alvi	Rahman	114434572	fayek.lucse@gmail.com	CS	Delete			
1623433	Saad	Abu Sayed	114423272	saad@gmail.com	CS	Delete			
1712235	Amina	Ahmed	123234572	amina@hmail.com	CS	Delete			
1716763	Tanvir	Hasan	121834334	tanvir@ymail.com	GS	Delete			
1721834	Tahmid	Lodi	174434572	tahmid@gmail.com	IT	Delete			
1621485	Junayed	Khan	112234572	junayed162@gmail.com	GS	Delete			
1725334	Zubair	Mohammad	117273272	kmzubair@gmail.com	CS	Delete			
1723232	Ikram	Kayes	182734722	ikram@ymail.com	IT	Delete			
1725314	Ejmen	Ramic	161213272	ejmen@gmail.com	IT	Delete			
Showing 1 to 1 of 1 entries						1			

Figure 9.4: Student Table Page

Lecturers Table in web-service:

Classroom Schedule Maker

DashboardTeam

Lecturers

Show10entries

Search:

Lecturer ID	First Name	Last Name	Designation	Email	Department
6184	Killua	Zoldyck	Asst. Prof	killua@gmail.com	CS
5123	Gon	Freecss	Asst. Prof	gon@gmail.com	IT
2323	Luffy	Delowar	Asst. Prof	luffy@gmail.com	IT
5454	Lelouch	Lamperouge	Asst. Prof	lelouch@gmail.com	CS
2356	Light	Yagami	Assoc. Prof	light@gmail.com	IT
7876	Toshiro	Hitsugaya	Matriculation Lecturer	Toshiro@iium.edu.my	GS
3184	Shinichi	Kudo	Professor	Kudo@iium.edu.my	CS
5928	Roy	Mustang	Assoc. Prof	jaki.fayek@live.iium.edu.my	GS
2341	Imad	Fakri	Professor	imadf@iium.edu.my	CS
8544	Zainatul Shima	Abdullah	Asst. Prof	shima@iium.edu.my	IT

Showing 1 to 1 of 1 entries

1

Figure 9.5: Lecturers Table Page

Maintenance Table in web-service:

Classroom Schedule Maker

DashboardTeam

Maintenance

Show

10

entries

Search:

Staff ID	First Name	Last Name	Email	Phone No
1234	Halim	Khan	halim@gmail.com	138492344
1123	Lichi	Ahmed	lichi@gmail.com	132323244
1623	Kacchi	Rahman	kachi@gmail.com	146592344
1934	Onigiri	Sheikh	onigiri@gmail.com	135764344
1424	Naruto	Uzumaki	Naruto@gmail.com	169892344
1594	Sasuke	Uchiha	Uchiha@gmail.com	198672344
1093	Ichigo	Kurosaki	Ichigo@gmail.com	138569344
1034	Izuke	Midoriya	Izuke@gmail.com	100112344
1991	Mikasa	Ackerman	Mikasa@gmail.com	139823244
1221	Gintoki	Sakata	Gintoki@gmail.com	1380777544

Showing 1 to 1 of 1 entries

1

Figure 9.6: Maintenance Table Page

Classroom Table in web-service:

Classroom Schedule Maker					Dashboard	Team
Classroom						
Show 10 entries		Search:				
Class ID	Capacity	Class Location	Class Condition	No of Devices		
121	50	E5-121	Under Maintenance	0		
122	40	E4-122	Test	40		
125	35	D4-125	Class	35		
89	40	B3-89	Class	35		
101	40	C4-101	Quiz	40		
117	50	E4-117	Under Maintenance	0		
118	40	E4-118	Discussion	0		
107	60	C2-107	Class	0		
78	50	B2-78	Test	50		
98	35	B5-98	Quiz	35		
Showing 1 to 1 of 1 entries					1	

Figure 9.7: Classroom Table Page

Schedule Table in web-service:

Classroom Schedule Maker

DashboardTeam

Schedule

Show10entries

Search:

Student ID	Lecturer ID	Class ID	Staff ID	Class Condition	Start Time	End Time
0	0	121	1594	Under Maintenance	Notice: Undefined offset: 5 in E:\xampp\htdocs\database\schedule.php on line 183	Notice: Undefined offset: 6 in E:\xampp\htdocs\database\schedule.php on line 184
0	6184	122	0	Test	01-AUG-20 02.00.00.000000 PM	01-JUN-20 05.00.00.000000 PM
0	2356	125	0	class	02-AUG-20 10.00.00.000000 AM	02-AUG-20 12.00.00.000000 PM
0	2341	89	0	class	26-JUL-20 02.00.05.000000 PM	26-JUL-20 04.45.05.000000 PM
0	8544	101	0	Quiz	27-JUL-20 05.00.00.000000 PM	27-JUL-20 07.00.00.000000 PM
0	0	117	1034	Under Maintenance	Notice: Undefined offset: 5 in E:\xampp\htdocs\database\schedule.php on line 183	Notice: Undefined offset: 6 in E:\xampp\htdocs\database\schedule.php on line 184
1721485	0	118	0	Discussion	01-AUG-20 08.00.00.000000 AM	01-AUG-20 11.00.50.000000 AM
0	6184	107	0	Class	03-AUG-20 08.00.00.000000 PM	03-AUG-20 10.25.06.000000 PM
0	5454	78	0	Test	09-AUG-20 12.00.00.000000 PM	09-AUG-20 03.00.00.000000 PM

Figure 9.8: Schedule Table Page

Insert new schedule:

The user can insert a new schedule to the database. According to our schema, stud_id, lec_id, class_id, staff_id can be *null*. But the purpose of booking, start time and end time of booking are required fields.

Classroom Schedule Maker

DashboardTeam

Insert New Schedule

Student ID

student id

Lecturer ID

lecturer id

Class ID

class id

Staff ID

staff id

Purpose

Test/Quiz?Class/Under Maintenance/Discussion

Start Time

2020-08-02 14:00:00

End Time

2020-08-02 14:00:00

Insert Schedule

Figure 9.9: Insert New Schedule

Update Data:

In the figure below, the form can be used to update student data.

Classroom Schedule Maker

DashboardTeam

Update Student Data

Student ID

student id

First Name

first name

Last Name

last name

Phone

01132423423

Email

ggwp@gmail.com

Department

CS/GS/IT

Update Table

Figure 9.10: Update Student Data

Delete Data:

This particular form in the 'Delete' page can be used to delete a schedule of a classroom.

The screenshot shows a web application titled 'Classroom Schedule Maker' with a navigation bar containing 'Dashboard' and 'Team'. The main content area displays a 'Delete Schedule' form. The form includes a 'Classroom ID' field with the text 'classroom id' and a 'Start Time' field with the text '2020-08-02 14:00:00'. A 'Delete Schedule' button is located at the bottom right of the form.

Figure 9.11: Delete Schedule of a classroom

Difficulties Faced:

In Figure 9.8, during viewing the 'Schedule' table in the web-service, *start_time* and *end_time* of format 'TIMESTAMP' which contained *NULL* values couldn't be shown. We tried formatting the attribute to '*to_char*' when connecting with php, but it didn't work.

```

<?php
$getres = oci_parse($connection,'SELECT nvl(stud_id,0),nvl(lec_id,0),nvl(class_id,0),nvl(staff_id,0),class_condition,
NVL(to_char((start_time), "YYYY-MM-DD HH:MM:SS AM"),to_char("0000-00-00 00:00:00 AM")),
NVL(to_char((start_time), "YYYY-MM-DD HH:MM:SS AM"),to_char("0000-00-00 00:00:00 AM")) FROM schedule');
oci_execute($getres);

```

Using SQL* PLUS:

```

SQL> select nvl(to_char((start_time), 'YYYY-MM-DD HH:MM:SS AM'),to_char('0000-00-00 00:00:00 AM')) as char_time, start_t
ime from schedule;

CHAR_TIME          START_TIME
-----
0000-00-00 00:00:00 AM
2020-08-01 02:08:00 PM 01-AUG-20 02.00.00.000000 PM
2020-08-02 10:08:00 AM 02-AUG-20 10.00.00.000000 AM
2020-07-26 02:07:05 PM 26-JUL-20 02.00.05.000000 PM
2020-07-27 05:07:00 PM 27-JUL-20 05.00.00.000000 PM
0000-00-00 00:00:00 AM
2020-08-01 08:08:00 AM 01-AUG-20 08.00.00.000000 AM
2020-08-03 08:08:00 PM 03-AUG-20 08.00.00.000000 PM
2020-08-09 12:08:00 PM 09-AUG-20 12.00.00.000000 PM
2020-08-08 11:08:00 AM 08-AUG-20 11.00.00.000000 AM
2020-07-26 02:07:05 PM 26-JUL-20 02.00.05.000000 PM
2020-08-02 10:08:00 AM 02-AUG-20 10.00.00.000000 AM
2020-08-01 08:08:00 AM 01-AUG-20 08.00.00.000000 AM
2020-08-07 02:08:00 PM 07-AUG-20 02.00.00.000000 PM
2020-08-10 03:08:05 PM 10-AUG-20 03.00.05.000000 PM
2020-07-25 01:07:05 PM 25-JUL-20 01.00.05.000000 PM
2020-07-15 01:07:05 PM 15-JUL-20 01.00.05.000000 PM
2020-08-01 10:08:00 PM 01-AUG-20 10.00.00.000000 PM

```

MEMBER CONTRIBUTION

Member	Contributions
Mahanad Chamie	<ul style="list-style-type: none"> • Create table statements along with primary key, foreign key, drop table elements • Entity Relation Diagram • Populate tables by inserting data • Write basic SQL queries • Create two functions
Jaki Fayek Alvi Rahman	<ul style="list-style-type: none"> • Create table statements along with primary key, foreign key, drop table elements • Entity Relation Diagram • Data Dictionary • Create two procedures • Create web application using HTML, CSS,php to interact with database through XAMPP,VSCODE

Project Files:

<https://github.com/fanalis93/Classroom-Schedule-Maker>