Database Intermediate

Take Home Exam

Ntsako Baloyi
19342975

Question 1

Q.1.1
```sql
create view N19342975.NormalResults AS
select P.Patient_Name, P.Patient_Surname, D.Docter_Surname, TR.Test_date,
TR.Test_Result
from N19342975.Patients as P, N19342975.Test_Results as TR, N19342975.Docters
as D
where P.Patient_Id = TR.Patient_Id and TR.Docter_Id = D.Docter_Id and
TR.Test_Result < 7.8;

select * from NormalResults;
```

	Patient_Name	Patient_Surname	Docter_Surname	Test_date	Test_Result
1	Andrew	Crouch	Phillips	2021-02-13 00:00:00	5.6
2	Nico	Baird	Phillips	2021-05-03 00:00:00	6.4

Q.1.2
```sql
create procedure N19342975.PatientRecord @Patient_Id varchar(5)
As
select D.Docter_Surname, TR.Test_date, TR.Test_Result
from N19342975.Patients as P, N19342975.Test_Results as TR, N19342975.Docters
as D
where P.Patient_Id = @Patient_Id and TR.Patient_Id = @Patient_Id and
D.Docter_Id = TR.Docter_Id;

EXEC PatientRecord @Patient_Id = 'PT001';
```

	Docter_Surname	Test_date	Test_Result
1	Hasim	2021-02-05 00:00:00	7.8
2	Hasim	2021-03-15 00:00:00	8.9

Q.1.3
```sql
select distinct D.Docter_Id, D.Docter_Surname, IIF(TR.Docter_Id is null, 'No
Patients Referred', 'Patients Referred') as 'REFERRALS'
from N19342975.Test_Results as TR
right join N19342975.Docters as D
on Tr.Docter_Id = D.Docter_Id
left join N19342975.Patients as P
on TR.Patient_Id = P.Patient_Id;
```

	Docter_Id	Docter_Surname	REFERRALS
1	DR001	Coetzee	Patients Referred
2	DR002	Hasim	Patients Referred
3	DR003	Mbeku	No Patients Referred
4	DR004	Phillips	Patients Referred

Q.1.4
```sql
select P.Patient_Name, P.Patient_Surname, AVG(TR.Test_Result) as 'Overall
Average'
from N19342975.Test_Results as TR
right join N19342975.Patients as P
on TR.Patient_Id = P.Patient_Id
group by P.Patient_Name, P.Patient_Surname
order by 'Overall Average' desc;
```
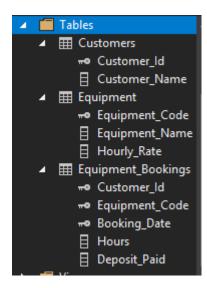
	Patient_Name	Patient_Surname	Overall Average
1	Neo	Petlele	11.4
2	Dominique	Woolridge	8.35
3	Nico	Baird	7.1
4	Andrew	Crouch	5.6
5	Derek	Moore	NULL

Q.1.5
```sql
select p.Patient_Name, P.Patient_Surname
from N19342975.Test_Results as TR
right join N19342975.Patients as P
on TR.Patient_Id = P.Patient_Id
where TR.Patient_Id is null;
```

	Patient_Name	Patient_Surname
1	Derek	Moore

Question 2

Q.2.1
```sql
create database StudentNumber_DATA6212_ExamQ2;
create schema N19342975;

create table N19342975.Customers(
Customer_Id varchar(10) not null primary key,
Customer_Name varchar(50) not null
);

create table N19342975.Equipment(
        Equipment_Code varchar(5) not null primary key,
        Equipment_Name varchar(50) not null,
        Hourly_Rate smallmoney not null
);

create table N19342975.Equipment_Bookings(
        Customer_Id varchar(10) not null,
        Equipment_Code varchar(5) not null,
        Booking_Date date not null,
        Hours smallint not null,
        Deposit_Paid smallmoney not null,
        foreign key (Customer_Id) references Customers(Customer_Id),
        foreign key (Equipment_Code) references Equipment(Equipment_Code),
        primary key(Customer_Id, Equipment_Code, Booking_Date)
);
```

- **Tables**
  - **Customers**
    - Customer_Id
    - Customer_Name
  - **Equipment**
    - Equipment_Code
    - Equipment_Name
    - Hourly_Rate
  - **Equipment_Bookings**
    - Customer_Id
    - Equipment_Code
    - Booking_Date
    - Hours
    - Deposit_Paid

Q.2.2
```sql
insert into N19342975.Customers
values
('123456', 'Neo Petlele'),
('246810', 'Derek Moore'),
('369121', 'Pedro Ntaba'),
('654321', 'Thabo Joe'),
('987654', 'Dominique Woolridge');
```

	Customer_Id	Customer_Na...
▷	123456	Neo Petlele
	246810	Derek Moore
	369121	Pedro Ntaba
	654321	Thabo Joe
	987654	Dominique Wo...
✱	NULL	NULL

```sql
insert into N19342975.Equipment
values
('E0001', 'Floor Sander', 250.85),
('E0002', 'Welder', 129.50),
('E0003', 'Compressor', 360.00),
('E0004', 'Hammer Drill', 102.90),
('E0005', 'Tile Lifter', 199.99);
```

	Equipment_Co...	Equipment_Na...	Hourly_Rate
▷	E0001	Floor Sander	250.8500
	E0002	Welder	129.5000
	E0003	Compressor	360.0000
	E0004	Hammer Drill	102.9000
	E0005	Tile Lifter	199.9900
✱	NULL	NULL	NULL

```sql
insert into N19342975.Equipment_Bookings
values
('123456', 'E0001', '2021-10-30', 3, 350.00),
('246810', 'E0005', '2021-11-19', 2, 200.00),
('246810', 'E0004', '2021-10-15', 5, 300.00),
('654321', 'E0002', '2021-09-10', 1, 130.00),
('987654', 'E0001', '2021-12-15', 7, 900.00),
('123456', 'E0002', '2021-11-01', 3, 200.00),
('246810', 'E0003', '2021-09-29', 4, 750.00);
```

	Customer_Id	Equipment_Co...	Booking_Date	Hours	Deposit_Paid
▷	123456	E0001	30/10/2021	3	350.0000
	123456	E0002	01/11/2021	3	200.0000
	246810	E0003	29/09/2021	4	750.0000
	246810	E0004	15/10/2021	5	300.0000
	246810	E0005	19/11/2021	2	200.0000
	654321	E0002	10/09/2021	1	130.0000
	987654	E0001	15/12/2021	7	900.0000
✱	NULL	NULL	NULL	NULL	NULL

Q.2.3   `alter table` N19342975.Customers
        `add` Contact_Number `varchar`(10);

	Customer_Id	Customer_Na...	Contact_Num...
▷	123456	Neo Petlele	NULL
	246810	Derek Moore	NULL
	369121	Pedro Ntaba	NULL
	654321	Thabo Joe	NULL
	987654	Dominique Wo...	NULL
○	NULL	NULL	NULL

Q.2.4   `update` N19342975.Customers
        `set` Contact_Number = `'0833875687'`
        `where` Customer_Id = `'123456'`;
        `update` N19342975.Customers
        `set` Contact_Number = `'0836914682'`
        `where` Customer_Id = `'246810'`;
        `update` N19342975.Customers
        `set` Contact_Number = `'0728965412'`
        `where` Customer_Id = `'369121'`;
        `update` N19342975.Customers
        `set` Contact_Number = `'0847946130'`
        `where` Customer_Id = `'654321'`;
        `update` N19342975.Customers
        `set` Contact_Number = `'0739718264'`
        `where` Customer_Id = `'987654'`;

	Customer_Id	Customer_Na...	Contact_Num...
▷	123456	Neo Petlele	0833875687
	246810	Derek Moore	0836914682
	369121	Pedro Ntaba	0728965412
	654321	Thabo Joe	0847946130
	987654	Dominique Wo...	0739718264
○	NULL	NULL	NULL

Q.2.5   `select` C.Customer_Id, C.Customer_Name
        `from` N19342975.Customers `as` C
        `left join` N19342975.Equipment_Bookings `as` EB
        `on` C.Customer_Id = EB.Customer_Id
        `where` Eb.Customer_Id `is null`;

	Customer_Id	Customer_Name
1	369121	Pedro Ntaba

Q.2.6
```sql
select C.Customer_Id, C.Customer_Name, COUNT(EB.Customer_Id) as 'NUMBER OF
EQUIPMENT BOOKINGS'
from N19342975.Customers as C
left join N19342975.Equipment_Bookings as EB
on C.Customer_Id = EB.Customer_Id
group by C.Customer_Id, C.Customer_Name
order by 'NUMBER OF EQUIPMENT BOOKINGS' desc;
```

	Customer_Id	Customer_Name	NUMBER OF EQUIPMENT BOOKINGS
1	246810	Derek Moore	3
2	123456	Neo Petlele	2
3	654321	Thabo Joe	1
4	987654	Dominique Woolridge	1
5	369121	Pedro Ntaba	0

Q.2.7
```sql
select top 1 C.Customer_Id, C.Customer_Name, EB.Booking_Date, Eb.Hours
from N19342975.Customers as C, N19342975.Equipment_Bookings as EB
where C.Customer_Id = EB.Customer_Id
order by EB.Hours desc;
```

	Customer_Id	Customer_Name	Booking_Date	Hours
1	987654	Dominique Woolridge	2021-12-15	7