

Database Intermediate

Take Home Test

Question 1

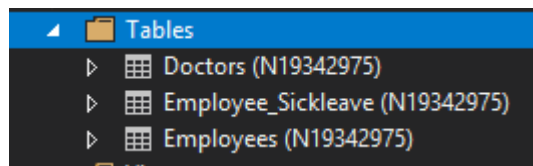
Q.1.1 `create database Sickleave;`

`create schema N19342975;`

```
create table N19342975.Employees(
    Employee_ID varchar(5) not null primary key,
    Employee_Name varchar(30) not null,
    Employee_Surname varchar(30) not null,
    Date_Of_Birth Date not null
);
```

```
create table N19342975.Doctors(
    Doctor_ID varchar(5) not null primary key,
    Doctor_Name varchar(30) not null
);
```

```
create table N19342975.Employee_Sickleave(
    Employee_ID varchar(5) not null foreign key references N19342975.Employees(Employee_ID),
    Doctor_ID varchar(5) not null foreign key references N19342975.Doctors(Doctor_ID),
    Start_Date Date not null,
    Number_Of_Days smallint not null,
    primary key(Employee_ID, Doctor_ID, Start_Date)
);
```



Q.1.2 `insert into N19342975.Employees`

```
values ('I0001', 'Dominique', 'Woolridge', '1993-04-19'),
       ('I0002', 'Nico', 'Baird', '1991-11-19'),
       ('I0003', 'Derek', 'Moore', '1992-06-24'),
       ('I0004', 'Neo', 'Petlele', '1993-12-29'),
       ('I0005', 'Andrew', 'Crouch', '1994-01-30');
```

	Employee_ID	Employee_Name	Employee_Surname	Date_Of_Birth
1	I0001	Dominique	Woolridge	1993-04-19
2	I0002	Nico	Baird	1991-11-19
3	I0003	Derek	Moore	1992-06-24
4	I0004	Neo	Petlele	1993-12-29
5	I0005	Andrew	Crouch	1994-01-30

`insert into N19342975.Doctors`

```
values ('D0001', 'Thabo Ntlali'),
       ('D0002', 'Deon Coetzee'),
       ('D0003', 'Kwezi Mbete'),
       ('D0004', 'Trevor January'),
       ('D0005', 'Julia Robins');
```

	Doctor_ID	Doctor_Name
1	D0001	Thabo Ntlali
2	D0002	Deon Coetzee
3	D0003	Kwezi Mbete
4	D0004	Trevor January
5	D0005	Julia Robins

```
insert into N19342975.Employee_Sickleave
values ('I0001', 'D0004', '2019-01-25', 2),
       ('I0002', 'D0001', '2019-05-14', 1),
       ('I0003', 'D0003', '2019-06-07', 5),
       ('I0003', 'D0002', '2019-06-29', 15),
       ('I0004', 'D0001', '2019-08-01', 3),
       ('I0005', 'D0004', '2019-10-22', 9),
       ('I0005', 'D0001', '2019-12-28', 4);
```

	Employee_ID	Doctor_ID	Start_Date	Number_Of_Days
1	I0001	D0004	2019-01-25	2
2	I0002	D0001	2019-05-14	1
3	I0003	D0002	2019-06-29	15
4	I0003	D0003	2019-06-07	5
5	I0004	D0001	2019-08-01	3
6	I0005	D0001	2019-12-28	4
7	I0005	D0004	2019-10-22	9

Q.1.3 `alter table N19342975.Employees`
`add Age smallint;`

	Employee_ID	Employee_Name	Employee_Surname	Date_Of_Birth	Age
1	I0001	Dominique	Woolridge	1993-04-19	NULL
2	I0002	Nico	Baird	1991-11-19	NULL
3	I0003	Derek	Moore	1992-06-24	NULL
4	I0004	Neo	Petlele	1993-12-29	NULL
5	I0005	Andrew	Crouch	1994-01-30	NULL

Q.1.4 `update N19342975.Employees`
`set Age = DATEDIFF(YY, Date_Of_Birth, GETDATE());`

	Employee_ID	Employee_Name	Employee_Surname	Date_Of_Birth	Age
1	I0001	Dominique	Woolridge	1993-04-19	28
2	I0002	Nico	Baird	1991-11-19	30
3	I0003	Derek	Moore	1992-06-24	29
4	I0004	Neo	Petlele	1993-12-29	28
5	I0005	Andrew	Crouch	1994-01-30	27

Question 2

Q.2.1

```
select D.Doctor_Name
from N19342975.Doctors As D
left join N19342975.Employee_Sickleave As SL
on D.Doctor_ID = SL.Doctor_ID
where SL.Doctor_ID is null;
```

	Doctor_Name
1	Julia Robins

Q.2.2

```
select E.Employee_Name, E.Employee_Surname, SUM(SL.Number_Of_Days) As 'Total Sick Leave Days'
from N19342975.Employee_Sickleave As SL
inner join N19342975.Employees As E
on E.Employee_ID = SL.Employee_ID
group by E.Employee_Name, E.Employee_Surname
order by 'Total Sick Leave Days' DESC;
```

	Employee_Name	Employee_Surname	Total Sick Leave Days
1	Derek	Moore	20
2	Andrew	Crouch	13
3	Neo	Petlele	3
4	Dominique	Woolridge	2
5	Nico	Baird	1

Q.2.3

```
select top 1 E.Employee_Name, E.Employee_Surname, D.Doctor_Name, MAX(SL.Number_Of_Days) As
'Number Of Days'
from N19342975.Employees As E, N19342975.Doctors As D, N19342975.Employee_Sickleave As SL
where D.Doctor_ID = SL.Doctor_ID AND SL.Doctor_ID = 'D0001'
group by E.Employee_Name, E.Employee_Surname, D.Doctor_Name
Order by MAX(SL.Number_Of_Days) DESC;
```

	Employee_Name	Employee_Surname	Doctor_Name	Number Of Days
1	Andrew	Crouch	Thabo Ntlali	4