

Project3

Relational Table

1. Category (cname , prioritynum)
2. Person (hinsurnum, name, gender, dob, phone, city, postalcd, streetaddr, regdate, cname)
cname references Category
3. Vaccine (vname , waitperiod, doses)
4. Vacclocation (loc_name , lcity, lpostalcd, lstreetaddr)
5. Vaccinebatch (batchno, vname, mfgdate, expydate, numdoses, loc_name) vname
references Vaccine, loc_name references Vacclocation
6. Vial (vial_id, vname, batchno) vname, batchno references vaccinebatch
7. Hospital (h_id, loc_name) locname references Vacclocation
8. Nurse (licensenum, h_id) locname references Hospital
9. VaccDates (vdate, loc_name) loc_name references Vacclocation
10. VaccSlot (vslotid, loc_name, vdate, vtime, vslot, hinsurnum, asgndate, licensenum,
vname, vial_id) loc_name references Vacclocation, vdate references VaccDates, licensenum
references Nurse, hinsurnum references Person, vial_id references Vial
11. NurseAssignments (assignid, licensenum, loc_name, vdate) licensenum references Nurse,
vdate references Vaccdates
12. Vaccination_info (info_id, licensenum, hinsurnum, vial_id, vdate, vslot, numdoses,
loc_name) hinsurnum references person, licensenum references nurse, loc_name references
vacclocation, vial_id references vial

Application Interaction

(a)

i. No person with the health insurance number IN12345

```
db2 => SELECT * FROM person where hinsurnum = 'IN12345';
```

HINSURNUM POSTALCD	CNAME STREETADDR	NAME	REGDATE	GENDER	DOB	PHONE	CITY

0 record(s) selected.

ii. New person added with hinsurnum IN12345

```

VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
4. Exit Application
Please Enter Your Option:
1
Enter your insurance id (IN001, IN002, .....)
IN12345
Enter your name
Mert
Enter your dob (yyyy-MM-dd)1997-03-06
SELECT YOUR CATEGORY NAME:
1. Health Workers
2. Above 50 years
3. Between 18 and 50 years
4. Below 18 years
3
Enter your gender:
1. Male
2. Female
3. Other
1
Enter your phone no.
5145198805
Enter your Street address
Peel
Enter city
Montreal
Enter postal code
56708
Person details added Successfully..

```

iii. Updated person details in database

```
db2 => SELECT * FROM person WHERE hinsurnum = 'IN12345';
```

HINSURNUM	CNAME	NAME	GENDER	DOB	PHONE	CITY
POSTALCD	STREETADDR	REGDATE				
IN12345	Between 18 and 50 years	Mert	Male	03/06/1997	5145198805	Montreal
56708	Peel	03/14/2021				

1 record(s) selected.

iv. updated phone no of hinsurnum IN12345

```

VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
4. Exit Application
Please Enter Your Option:
1
Enter your insurance id (IN001, IN002, ....)
IN12345
Enter your name
Mert
Enter your dob (yyyy-MM-dd)1997-03-06
SELECT YOUR CATEGORY NAME:
1. Health Workers
2. Above 50 years
3. Between 18 and 50 years
4. Below 18 years
3
Enter your gender:
1. Male
2. Female
3. Other
1
Enter your phone no.
4386701250
Enter your Street address
Peel
Enter city
Montreal
Enter postal code
56708
Insurance id already exist
Do you want to update your information
1. Update your information
2. Exit
1
Person details updated Successfully..

```

v. Person details updated in database

```
db2 => SELECT * FROM person WHERE hinsurnum = 'IN12345';
```

HINSURNUM POSTALCD	CNAME STREETADDR	NAME	REGDATE	GENDER	DOB	PHONE	CITY
IN12345 56708	Between 18 and 50 years Peel	Mert	03/14/2021	Male	03/06/1997	4386701250	Montreal

1 record(s) selected.

(b)

i. Person exists with hinsurnum IN002 but have not received vaccination

```

db2 => SELECT Person.name, vaccination_info.vslot, vaccination_info.numdoses
db2 (cont.) => FROM Person left Outer Join vaccination_info
db2 (cont.) => ON Person.hinsurnum = vaccination_info.hinsurnum
db2 (cont.) => where Person.hinsurnum = 'IN002';

```

NAME	VSL0T	NUMDOSES
Mike	-	

1 record(s) selected.

ii. vaccination slot assigned

```

VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
4. Exit Application
Please Enter Your Option:
2
Enter nurse Liscence No. (n001, n002, ....)
[n001
Enter Insurance id of persons (IN001, IN002, .....
[IN002
Enter Vaccination Date (YYYY-MM-DD)
[2021-03-21
Enter Slot (first, second,..., five)
[first
Enter Time (HH:mm:ss)
[09:00:00
Enter Vial id (v001, v002, v003 and v004)
[v002
Enter hospital name
[city hospital
Enter Vaccine Batch No. (b001, b002, ....)
[b001
Enter vaccine name
[covaxin
Vaccine Slot Assigned Successfull

```

iii. Slot details added in database

```
db2 => SELECT * FROM vaccslot WHERE hinsurnum = 'IN002';
```

VSLOTID	LOC_NAME ASGNDATE VNAME	VTIME BATCHNO	VSLLOT	VDATE	LICENSENUM	VIAL_ID	HINSURNUM
	5 city hospital 03/14/2021 covaxin	09:00:00 first b001		03/21/2021	n001	v002	IN002

1 record(s) selected.

```
db2 => SELECT vdate, vtime, vslot, loc_name FROM vaccslot WHERE hinsurnum = 'IN002';
```

VDATE	VTIME	VSLLOT	LOC_NAME
03/21/2021	09:00:00	first	city hospital

1 record(s) selected.

iv. Slot is already booked

```

VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
4. Exit Application
Please Enter Your Option:
2
Enter nurse Liscence No. (n001, n002, ....)
[n001
Enter Insurance id of persons (IN001, IN002, .....
[IN003
Enter Vaccination Date (YYYY-MM-DD)
[2021-03-21
Enter Slot (first, second,..., five)
[first
Enter Time (HH:mm:ss)
[09:00:00
Enter Vial id (v001, v002, v003 and v004)
[v002
Enter hospital name
[city hospital
Enter Vaccine Batch No. (b001, b002, ....)
[b002
Enter vaccine name
[covaxin
Please alot another slot. This slot is already booked
Enter New Vaccine Slot

```

v. IN002 is still assigned to previous slot

```
[db2 => SELECT vdate, vtime, vslot, loc_name FROM vaccslot WHERE hinsurnum = 'IN002';
```

VDATE	VTIME	VSLLOT	LOC_NAME
03/21/2021	09:00:00	first	city hospital

1 record(s) selected.

No slot is assigned

```
[db2 => select vdate, vtime, vslot, loc_name FROM vaccslot WHERE hinsurnum = 'IN003';
```

VDATE	VTIME	VSLLOT	LOC_NAME
-------	-------	--------	----------

0 record(s) selected.

(c)

i. vaccine brand and recommended doses

```
[db2 => SELECT vname as Vaccinename, doses as Recommended_Doses FROM vaccine WHERE vname = 'biontech'
db2 (cont.) => ;
```

VACCINENAME	RECOMMENDED_DOSES
biontech	2

1 record(s) selected.

ii. IN001 already received 2 doses of biotech

```
db2 => SELECT Vaccination_info.hinsurnum, vial.vname, Vaccination_info.numdoss db2 (cont.) => FROM Vaccination_info
db2 (cont.) => JOIN vial ON Vaccination_info.vial_id = vial.vial_id
db2 (cont.) => WHERE Vaccination_info.hinsurnum = 'IN001';
```

HINSURNUM	VNAME	NUMDOSES
IN001	biontech	2

1 record(s) selected.

iii. Completed no of doses

```
VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
4. Exit Application
Please Enter Your Option:
2
Enter nurse Liscence No. (n001, n002, ....)
[n001
Enter Insurance id of persons (IN001, IN002, .....
[IN001
Enter Vaccination Date (YYYY-MM-DD)
[2021-03-21
Enter Slot (first, second,..., five)
[second
Enter Time (HH:mm:ss)
[12:00:00
Enter Vial id (v001, v002, v003 and v004)
[v001
Enter hospital name
[Montreal Hospital
Enter Vaccine Batch No. (b001, b002, ....)
[b001
Enter vaccine name
[biontech
Person Has Already Completed the Requiried Amount of Doses
```

iv. Assigned slot is still free

```
db2 => SELECT hinsurnum, vtime, vslot, vdate FROM vacslot WHERE vslot = 'second' and vdate = '2021-03-21'
db2 (cont.) => ;
```

HINSURNUM	VTIME	VSLLOT	VDATE
0 record(s) selected.			

(d)

i. vaccination information added for IN002

```

VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
4. Exit Application
Please Enter Your Option:
3
Enter nurse Liscence No.(n001, n002, ..... )
[n001
Enter insurance id (IN001, IN002, ..... )
[IN002
Enter vial id (v001, v002, ..... )
[v002
Enter Slot (first, second,....,five)
[first
Enter Vaccination Date (YYYY-MM-DD)
[2021-03-21
Enter Dose number
1
Enter hospital name
[city hospital
Vaccination Info Added Successfull

```

ii. Vaccination information in database for IN002

```
db2 => SELECT * FROM vaccination_info WHERE hinsurnum = 'IN002';
```

INFO_ID	LICENSENUM	NUMDOSES	LOC_NAME	HINSURNUM	VIAL_ID	VDATE	VSLLOT
2	n001	1	city hospital	IN002	v002	03/21/2021	first

1 record(s) selected.

(e)

i. one dose of vaccine with brand name taken by IN002

```

[db2 => SELECT vaccination_info.hinsurnum, vial.vname, vaccination_info.numdoses
[db2 (cont.) => FROM vaccination_info
[db2 (cont.) => INNER JOIN vial ON vaccination_info.vial_id = vial.vial_id
[db2 (cont.) => WHERE hinsurnum = 'IN002';

```

HINSURNUM	VNAME	NUMDOSES
IN002	covaxin	1

1 record(s) selected.

ii. Assigned a free slot to IN002 for second dose

```

VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
4. Exit Application
Please Enter Your Option:
2
Enter nurse Liscence No. (n001, n002, ....)
[n002
Enter Insurance id of persons (IN001, IN002, .....
[IN002
Enter Vaccination Date (YYYY-MM-DD)
[2021-03-21
Enter Slot (first, second,..., five)
[second
Enter Time (HH:mm:ss)
[12:00:00
Enter Vial id (v001, v002, v003 and v004)
[v002
Enter hospital name
[city hospital
Enter Vaccine Batch No. (b001, b002, ....)
[b002
Enter vaccine name
[covaxin
Vaccine Slot updated Successfully..

```

iii. Vaccination information updated

```

VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
4. Exit Application
Please Enter Your Option:
3
Enter nurse Liscence No.(n001, n002, .....
[n002
Enter insurance id (IN001, IN002, .....
[IN002
Enter vial id (v001, v002, .....
[v002
Enter Slot (first, second,....,five)
[second
Enter Vaccination Date (YYYY-MM-DD)
[2021-03-21
Enter Dose number
2
Enter hospital name
[city hospital
Vaccination Information updated Successfully..

```

Indexing

Created Index on Phone Column of Person


```
[db2 => SELECT streetaddr FROM person WHERE phone = '9874563213';
```

```
STREETADDR
```

```
-----  
Peel
```

```
1 record(s) selected.
```

```
[db2 => create index ix_phone on person(phone)
```

```
[db2 (cont.) => ;
```

```
DB20000I The SQL command completed successfully.
```

```
[db2 => SELECT streetaddr FROM person WHERE phone = '9874563213';
```

```
STREETADDR
```

```
-----  
Peel
```

```
1 record(s) selected.
```

No, phone index won't be any more efficient than searching by the insurance number of the person (assuming real-world data and millions of individuals) to retrieve the same information as insurance number is primary key of person table. Hence, that's what will be faster and more efficient in this case is searching for insurance number.

Data Analytics

Count of persons vaccinated each day with number of dose = 1

```
[db2 => SELECT vdate, count(hinsurnum) as Persons from vaccination_info
```

```
[db2 (cont.) => WHERE numdoses = 1 GROUP BY vdate;
```

```
VDATE      PERSONS
```

```
-----  
03/17/2021      2  
03/18/2021      1  
03/19/2021      2  
03/20/2021      3  
03/21/2021      4
```

```
5 record(s) selected.
```

- Data chart representing count of persons vaccinated each day
- Name of Worksheet – vaccination_info.xlsx

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1															
2															
3	vaccine date	Count of persons													
4	2021-03-17	2													
5	2021-03-18	1													
6	2021-03-19	2													
7	2021-03-20	3													
8	2021-03-21	4													
9	Grand Total	12													
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															

