

Relational Model

1. Category(cname, prioritynum)
2. Person(hinsnum, DOB, DOR, name, phone, gender, streetA, pcode, city, cname)
Cname reference Category
3. Vaccine(company, doses, waitperiod)
4. Location(Lname, pcode, streetA, city)
5. VaccineBatch(company, batchnum, mandate, expirydate, numdoses, Lname)
Company references Vaccine, Lname reference Location
6. Vial(company,batchnum, vialnum)
Company,batchnum references VaccineBatch
7. Hospital(Lname)
Lname references Location
8. Nurse(CanListNum, Nname, Lname)
Lname references to Hospital
9. VaccDate(Lname, Sdate)
Lname reference Location
10. Slot(Stime, Sarea, Sdate, LName, hinsnum, CanListNum, company, batchnum, vialnum)
(Lname,sdate) reference to VaccDate
CanListNum reference to Nurse
Hinsnum reference to Person
(company,batchnum, vialnum) references Vial
11. NurseAssignment(CanListNum, lame, sdate)
Canlistnum references to Nurse
(lname, sdate) reference Vaccdate

Application Interactions

(I wasn't 100% sure if we could post separate screenshots of my application from my IDE and from DB2 so I have created an optional section at the end of the pdf where I do all the commands per question side by side!)

Q2

a)

- i. Run a query in the database that demonstrates that there is no person with the health insurance number H.

```
SELECT pname, hinsnum from person where hinsnum = 15;
```

```
[db2 =>      SELECT pname, hinsnum from person where hinsnum = 15;
          PNAME           HINSNM
----- -----
          0 record(s) selected.
```

ii. From your application, add a new person P1, whose health insurance number is H.

```
a3 [Java Application] /Library/Java/JavaVirtualMachines/jdk-13.0.2.jdk/Contents/Home/bin/java (Mar. 13, 2021, 7:43:16 p.m.)  
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 the Health Insurance Number: 15  
Please enter the patient's name: Hamdan Khan  
Enter the Date of birth: 1999-07-18  
Enter the Date of Registration: 2021-02-06  
Enter the patient's Phone Number in this format XXX-XXX-XXXX: 533-999-0761  
Please enter the patient's gender: M  
Please enter the patient's street address: 1276 de la Montane  
Please enter the patient's City: Montreal  
Please enter the patient's Postal Code in this format XXX-XXX: H0X-2E8  
Please enter the patient's Category: Everybody else  
[INSERT INTO Person VALUES (15, 'Hamdan Khan' , '1999-07-18' , '2021-02-06' , '533-999-0761' ,  
The person with name: Hamdan Khan and health insurance number: 15 has successfully been added  
  
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:
```

iii. Run a query in the database that shows the new information that got added.

```
SELECT pname, hinsnum from person where hinsnum =15;
```

```
[db2 => SELECT pname, hinsnum from person where hinsnum = 15;  
  
PNAME          HINSNUM  
-----  
Hamdan Khan      15  
  
1 record(s) selected.
```

- iv. From your application, add a new person information P2, whose health insurance number is H. Choose Yes when the application prompts whether the current person's information must be 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: 1

Enter the Health Insurance Number: 15
Please enter the patient's name: Hamza Malik
Enter the Date of birth: 1999-07-18
Enter the Date of Registration: 2021-02-06
Enter the patient's Phone Number in this format XXX-XXX-XXXX: 533-999-0761
Please enter the patient's gender: M
Please enter the patient's street address: 1276 de la Montane
Please enter the patient's City: Montreal
Please enter the patient's Postal Code in this format XXX-XXX: H0X-2E8
Please enter the patient's Category: Everybody else
INSERT INTO Person VALUES (15, 'Hamza Malik' , '1999-07-18' , '2021-02-06' , '533-999-0761' , 'M'
Person with Health Insurance Number: 15 already exists!!
Do you want to update the existing information? : yes
UPDATE Person SET pname = 'Hamza Malik' , DOB = '1999-07-18' , DOR = '2021-02-06' , phone = '533-9
The person with Health Insurance Number: 15 has been successfully updated!
```

- v. Run a query in the database that shows that H is now associated with P2's information.

[db2 => SELECT pname, hinsnum from person where hinsnum = 15;	
PNAME	HINSNUM
Hamza Malik	15
1 record(s) selected.	

b)

- i. Run a query in the database that shows that a person P3 exists, but has not received any vaccination shots.

[db2 => SELECT COUNT(hinsnum) AS num_doses from slot where hinsnum=15;	
NUM_DOSES	
0	
1 record(s) selected.	

ii. From the application, assign a slot S1 to P3.

```
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 the Health Insurance Number of the person to be given the slot: 15
Enter the Location of the slot: Jewish General
Enter the date: 2021-02-02
Enter the time 10:00:00
Enter the area of the slot in the format ward-X: ward-1
INSERT INTO Slot VALUES ('Jewish General' , '2021-02-02' , 'ward-1' , '10:00:00' , 15 , '2021-02-02', NULL, NULL, NULL, NULL )
The slot on date: 2021-02-02, time: 10:00:00 and area: ward-1 for health insurance number: 15 has successfully been added!
DONE
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:
```

iii. Run a query in the database that shows that P3 is now assigned the slot S1.

```
[db2 => SELECT hinsnum, lname, sdate, stime, sarea from slot where hinsnum=15;

HINSNM      LNAME          SDAT       STIME      SAREA
-----      -----
15 Jewish General           02/02/2021 10:00:00 ward-1

1 record(s) selected.
```

iv. Now, from the application try to assign the slot S1 to another person P4.

```
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 the Health Insurance Number of the person to be given the slot: 16
Enter the Location of the slot: Jewish General
Enter the date: 2021-02-02
Enter the time 10:00:00
Enter the area of the slot in the format ward-X: ward-1
INSERT INTO Slot VALUES ('Jewish General' , '2021-02-02' , 'ward-1' , '10:00:00' , 16 , '2021-02-02', NULL, NULL, NULL, NULL )
The slot has already been assigned to someone else! Please try another slot!
DONE
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:
```

v. Run a query in the database that shows that P3 is still assigned the slot S1 and no slot is assigned to P4.

```
[db2 => SELECT COUNT(hinsnum) AS num_dozes from slot where hinsnum=16;
NUM_DOZES
-----
0
1 record(s) selected.
```

```
[db2 => SELECT hinsnum, lname, sdate, stime, sarea from slot where lname = 'Jewish General' and sdate = '2021-02-02' and stime = '10:00:00' and sarea='ward-1'
HINSNUM      LNAME              SDATE        STIME      SAREA
-----  -----
15  Jewish General          02/02/2021 10:00:00  ward-1
1 record(s) selected.
```

c)

i. Run a query in the database that shows that the vaccine brand V1 has 2 recommended doses.

```
[db2 => SELECT doses from Vaccine where company = 'Pfizer-BioNTech';
DOSES
-----
2
1 record(s) selected.
```

ii. Run a query in the database that shows that a person P5 has received 2 doses of the vaccine brand V1 already.

```
|db2 => SELECT COUNT(hinsnum)AS num_dozes, company from slot where hinsnum=1 group by company;  
  
NUM_DOZES    COMPANY  
-----  
      2 Pfizer-BioNTech  
  
1 record(s) selected.
```

iii. From the application, try to assign a valid free slot S2 to P5.

```
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 the Health Insurance Number of the person to be given the slot: 1  
Enter the Location of the slot: Jewish General  
Enter the date: 2021-02-02  
Enter the time 09:30:00  
Enter the area of the slot in the format ward-X: ward-4  
The person has already been given the full vaccine doze!!!
```

```
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:
```

iv. Run a query in the database that shows that slot S2 is still free

```
db2 => SELECT lname, sdate, stime, sarea, hinsnum from slot where lname = 'Jewish General' and sdate = '2021-02-02' and sarea = 'ward-4' and stime = '09:30:00';  
  
LNAME          SDATE        STIME        SAREA          HINSNUM  
-----  
Jewish General 02/02/2021 09:30:00 ward-4  
  
1 record(s) selected.
```

d)

- i) From the application menu, record that P2 (the person from 2a) is being administered the vaccine V1, by the nurse N1 using the vial W1.

```
db2 >java VaccineApp
```

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 the Location of the slot: Jewish General
Enter the date: 2021-02-06
Enter the time 11:00:00
Enter the area of the slot in the format ward-X: ward-1
Enter the Health Insurance Number of the person to be given the slot: 15
Enter the Vaccine Comapany: Pfizer-BioNTech
Enter the Batch Number: 991
Enter the Vial Number: 1352
Enter the Canadian Lisence number of the nurse: 35408968
The person with Health Insurance Number: 15 has been successfully 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:

- ii) Run a query in the database that shows this information, along with the slot in which this was applied.

```
db2 => SELECT distinct slot.hinsnum, pname, nname, slot.lname, sdate, sarea, stime, vialnum, company FROM slot, person, Nurse where person.hinsnum = 15 and slot.lname = 'Jewish General' and sdate = '2021-02-06' and stime = '11:00:00' and sarea='ward-1' and slot.CanLisNum = Nurse.CanLisNum;
```

HINNUM	PNAME	NNAME	LNAME	SDATE	SAREA	STIME	VIALNUM	COMPANY
15	Hamza Malik	Sarah Ali Khan	Jewish General	02/06/2021	ward-1	11:00:00	1352	Pfizer-BioNTech

1 record(s) selected.

- The above was not completely visible so also adding the result with fewer attributes

```
db2 => SELECT hinsnum, canlisnum, vialnum, sdate, sarea, stime from slot where slot.lname = 'Jewish General' and sdate = '2021-02-06' and stime = '11:00:00' and sarea='ward-1'
```

HINNUM	CANLISNUM	VIALNUM	SDATE	SAREA	STIME
15	35408968	1352	02/06/2021	ward-1	11:00:00

1 record(s) selected.

e)

- i. Run a query in the database that shows that a person P6 has received 1 dose of the vaccine brand V1 already.

```
[db2 => SELECT COUNT(hinsnum)AS num_dozes, company from slot where hinsnum=15 group by company;  
NUM_DOZES    COMPANY  
-----  
      1 Pfizer-BioNTech  
1 record(s) selected.
```

- ii. From the application, try to assign a valid free slot S3 to P6.

```
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 the Health Insurance Number of the person to be given the slot: 15  
Enter the Location of the slot: Jewish General  
Enter the date: 2021-02-07  
Enter the time 09:00:00  
Enter the area of the slot in the format ward-X: ward-1  
INSERT INTO Slot VALUES ('Jewish General' , '2021-02-07' , 'ward-1' , '09:00:00' , 15 , '2021-02-07', NULL, NULL, NULL, NULL )  
The slot on date: 2021-02-07, time: 09:00:00 and area: ward-1 for health insurance number: 15 has successfully been added!  
DONE  
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:
```

- iii. From the application menu, try to record that P6 is being administered the vaccine V2, by the nurse N2 using the vial W2.

```
as [Java Application] /Library/Java/JavaVirtualMachines/jdk-15.0.2.jdk/Contents/Home/bin/java (Mar. 14, 2021, 11:45 AM)
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 the Location of the slot: Jewish General
Enter the date: 2021-02-07
Enter the time 09:00:00
Enter the area of the slot in the format ward-X: ward-1
Enter the Health Insurance Number of the person to be given the slot: 15
Enter the Vaccine Company: Moderna
Enter the Batch Number: 991
Enter the Vial Number: 2010
Enter the Canadian Licence number of the nurse: 35408972
The person has been given the Pfizer-BioNTech vaccine before! Please use that!
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:
```

Indexing

Q3

```
[db2 => CREATE UNIQUE INDEX ind1 ON Person(phone, hinsnum) INCLUDE (pstreetaddress, city, ppcode);
DB20000I  The SQL command completed successfully.
db2 => ]
```

Yes, this index would be practical/efficient as the index now includes the address which means that it will have to make fewer I/O calls and one less disk operation to extract the address of the person. However, in the case where we need another data for example the gender of the person, as the table is not sorted using the phone number, So it would be an unclustered index hence the data could be pointed to any page hence in the worst case scenario, it will have to look through all the pages having multiple I/O costs.

Data Analytics

Q4

- i) Include the query that you used

Create VIEW Analysis(sdate, vaccinated)

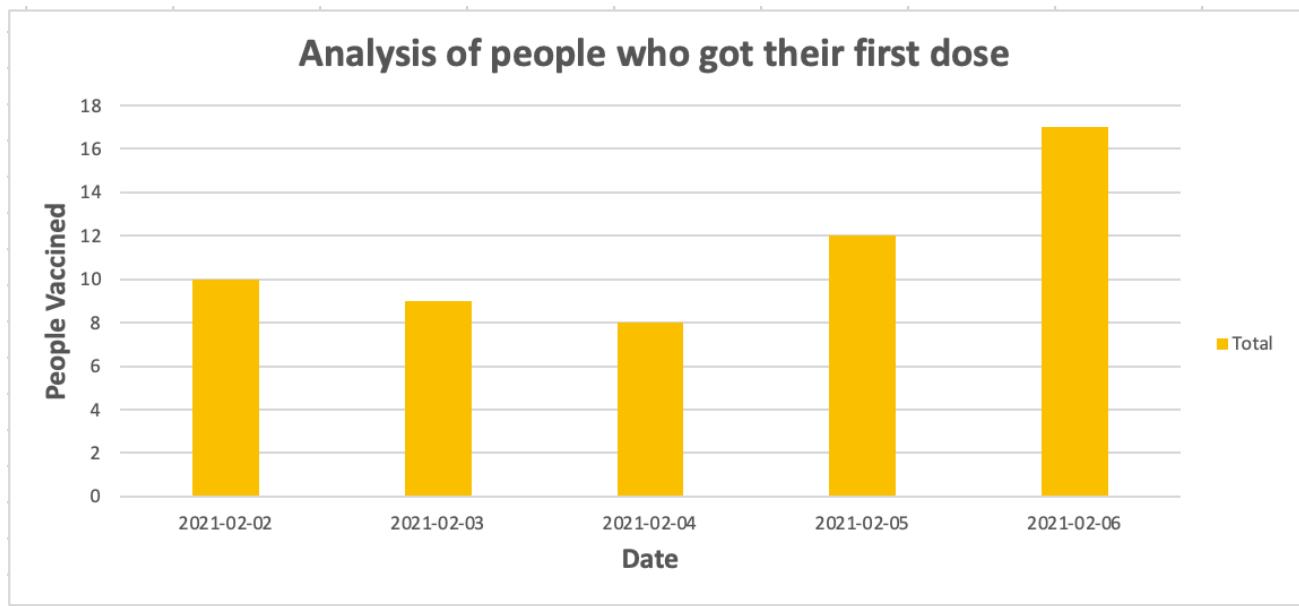
AS

```
SELECT sdate , Count(hinsnum) as vaccinated
FROM SLOT
WHERE sdate between '2021-02-02' and '2021-02-06'
AND hinsnum in (SELECT hinsnum FROM slot GROUP BY hinsnum HAVING
count(hinsnum) <2)
GROUP BY sdate;
```

EXPORT TO Vaccined.csv OF DEL MODIFIED BY NOCHARDEL select * from Analysis;

(This query was part of the loaddata.sql which can be find in one of my submissions. I ran everything in db2)

- ii) Image of the chart



The data was added and exported to Excel from the file loaddata.sh which ran loaddata.sql. The file used to make this chart is Vaccined.xls

Assumptions

For the sake of this assignment, I have considered the past date to be before 1st Febrary 2021.

Optional Section Q2

Screenshots of query and application run together

a)

```
Enter a command: db2
(c) Copyright IBM Corporation 1993,2007
Command Line Processor for DB2 Client 11.5.4.0

You can issue database manager commands and SQL statements from the command
prompt. For example:
  db2 => connect to sample
  db2 => bnd sample.bnd

For general help, type ?.
For command help, type ? command, where command can be
the first few keywords of a database manager command. For example:
? CATALOG DATABASE for help on the CATALOG DATABASE command
? CATALOG          for help on all of the CATALOG commands.

To exit db2 interactive mode, type QUIT at the command prompt. Outside
interactive mode, all commands must be prefixed with 'db2'.
To list the current command option settings, type LIST COMMAND OPTIONS.

For more detailed help, refer to the Online Reference Manual.

db2 => connect to cs421

Database Connection Information

Database server      = DB2/LINUXX8664 11.5.4.0
SQL authorization ID = SSHAHB5
Local database alias  = CS421

db2 => SELECT pname, hinsnum from person where hinsnum = 15;

PNAME          HINNUM
-----
0 record(s) selected.

db2 => SELECT pname, hinsnum from person where hinsnum = 15;

PNAME          HINNUM
-----
Handan Khan      15
1 record(s) selected.

db2 => SELECT pname, hinsnum from person where hinsnum = 15;

PNAME          HINNUM
-----
Hanza Malik     15
1 record(s) selected.

db2 => 
```

```
Enter a command: vi VaccineApp.java
Enter a command: java VaccineApp
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 the Health Insurance Number: 15
Please enter the patient's name: Hamdan Khan
Enter the Date of birth: 1999-07-18
Enter the Date of Registration: 2021-02-06
Enter the patient's Phone Number in this format XXX-XXX-XXXX: 533-999-0761
Please enter the patient's gender:
Please enter the patient's street address: 1276 de la Montane
Please enter the patient's City: Montreal
Please enter the patient's Postal Code in this format XXX-XXX: H0X-2E8
Please enter the patient's Category: Everybody else
INSERT INTO Person VALUES (15, 'Hamdan Khan', '1999-07-18', '2021-02-06', '533-999-0761', 'M', '1276 de la Montane', 'Montreal', 'H0X-2E8', 'Everybody else')
The person with name: Hamdan Khan and health insurance number: 15 has successfully been added

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 the Health Insurance Number: 15
Please enter the patient's name: Hanza Malik
Enter the Date of birth: 1999-07-06
Enter the Date of Registration: 2021-02-06
Enter the patient's Phone Number in this format XXX-XXX-XXXX: 533-999-0761
Please enter the patient's gender: M
Please enter the patient's street address: 1276 de la Montane
Please enter the patient's City: Montreal
Please enter the patient's Postal Code in this format XXX-XXX: H0X-2E8
Please enter the patient's Category: Everybody else
INSERT INTO Person VALUES (15, 'Hanza Malik', '1999-07-06', '2021-02-06', '533-999-0761', 'M', '1276 de la Montane', 'Montreal', 'H0X-2E8', 'Everybody else')
Person with Health Insurance Number: 15 already exists!!
Do you want to update the existing information? : yes
UPDATE Person SET pname = 'Hanza Malik', DOB = '1999-07-06', DOR = '2021-02-06', phone = '533-999-0761', gender = 'M', pstreetaddress = '1276 de la Montane', city = 'Montreal', pcode = 'H0X-2E8', cname = 'Everybody else'
WHERE hinsnum = 15
The person with Health Insurance Number: 15 has been successfully 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: 4
Terminating the program!
Enter a command: 
```

b)

```
Database server      = DB2/LINUXXB664 11.5.4.0
SQL authorization ID = SSHAHB5
Local database alias = CS421

db2 => SELECT COUNT(hinsnum) AS num_doses from slot where hinsnum=15;
NUM_DOSSES
-----
0
1 record(s) selected.

db2 => SELECT hinsnum, lname, sdate, stime, sarea from slot where hinsnum=15;
HINSNUM   LNAME          SDATE      STIME      SAREA
-----  -----
15 Jewish General    02/02/2021 10:00:00 ward-1

1 record(s) selected.

db2 => SELECT COUNT(hinsnum) AS num_doses from slot where hinsnum=16;
NUM_DOSSES
-----
0
1 record(s) selected.

db2 => SELECT hinsnum, lname, sdate, stime, sarea from slot where hinsnum=15;
HINSNUM   LNAME          SDATE      STIME      SAREA
-----  -----
15 Jewish General    02/02/2021 10:00:00 ward-1

1 record(s) selected.

db2 => ]
```

```
Last login: Tue Mar 16 11:46:34 2021 from 119.73.121.190
[Enter a command: cd java
[Enter a command: java VaccineApp
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 the Health Insurance Number of the person to be given the slot: 15
[Enter the Location of the slot: Jewish General
[Enter the date: 2021-02-02
[Enter the time: 10:00:00
[Enter the area of the slot in the format ward-X: ward-1
[INSERT INTO Slot VALUES ('Jewish General', '2021-02-02', 'ward-1', '10:00:00', 15, '2021-02-02'
, NULL, NULL, NULL)
The slot on date: 2021-02-02, time: 10:00:00 and area: ward-1 for health insurance number: 15 has successfully been added!
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 the Health Insurance Number of the person to be given the slot: 16
[Enter the Location of the slot: Jewish General
[Enter the date: 2021-02-02
[Enter the time: 10:00:00
[Enter the area of the slot in the format ward-X: ward-1
[INSERT INTO Slot VALUES ('Jewish General', '2021-02-02', 'ward-1', '10:00:00', 16, '2021-02-02'
, NULL, NULL, NULL)
The slot has already been assigned to someone else! Please try another slot!
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: ]
```

c)

```
db2 => connect to cs421
Database Connection Information
Database server      = DB2/LINUXXB664 11.5.4.0
SQL authorization ID = SSHAHB5
Local database alias = CS421

db2 => SELECT doses from Vaccine where company = 'Pfizer-BioNTech';
DOSES
-----
2
1 record(s) selected.

db2 => SELECT COUNT(hinsnum)AS num_dozes, company from slot where hinsnum=1 group by company;
NUM_DOZES COMPANY
-----  -----
2 Pfizer-BioNTech

1 record(s) selected.

db2 => SELECT lname, sdate, stime, sarea, hinsnum from slot where lname = 'Jewish General' and sdate
= '2021-02-02' and sarea = 'ward-4' and stime = '09:30:00';
LNAME          SDATE      STIME      SAREA      HINSNUM
-----  -----
Jewish General 02/02/2021 09:30:00 ward-4

1 record(s) selected.

db2 => ]
```

```
Last login: Tue Mar 16 11:46:53 2021 from 119.73.121.190
[Enter a command: cd java
[Enter a command: java VaccineApp
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 the Health Insurance Number of the person to be given the slot: 1
[Enter the Location of the slot: Jewish General
[Enter the date: 2021-02-02
[Enter the time: 09:30:00
[Enter the area of the slot in the format ward-X: ward-4
The person has already been given the full vaccine dose which was 2!!!
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: ]
```

d)

```
db2 => SELECT lname, sdate, stime, sarea, hinsnum, CanLisNum, vialnum from slot where lname = 'Jewish General' and sdate = '2021-02-06' and sarea = 'ward-1' and stime = '11:00:00';
          LNAME      SDATE      STIME      SAREA      HINSNUM      CANLIS
          NUM      VIALNUM
-----|-----|-----|-----|-----|-----|
Jewish General      02/06/2021 11:00:00 ward-1      15      354
08968      1352
1 record(s) selected.
db2 => 
```

```
Enter a command: java VaccineApp
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 the Location of the slot: Jewish General
Enter the date: 2021-02-06
Enter the time 11:00:00
Enter the area of the slot in the format ward-X: ward-1
Enter the Health Insurance Number of the person to be given the slot: 15
Enter the Vaccine Company: Pfizer-BioNTech
Enter the Batch Number: 991
Enter the Vial Number: 1352
Enter the Canadian Liscence number of the nurse: 35408968
The person with Health Insurance Number: 15 has been successfully 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: 
```

e)

```
db2 => SELECT COUNT(hinsnum)AS num_dozes, company from slot where hinsnum=15 group by company;
          NUM_DOZES      COMPANY
-----|-----|
1 Pfizer-BioNTech
1 record(s) selected.
db2 => 
```

```
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 the Health Insurance Number of the person to be given the slot: 15
Enter the Location of the slot: Jewish General
Enter the date: 2021-02-07
Enter the time 09:00:00
Enter the area of the slot in the format ward-X: ward-1
INSERT INTO Slot VALUES ('Jewish General' , '2021-02-07' , 'ward-1' , '09:00:00' , 15 , '2021-02-07' ,
NULL, NULL, NULL, NULL )
The slot on date: 2021-02-07, time: 09:00:00 and area: ward-1 for health insurance number: 15 has
successfully been added!
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 the Location of the slot: Jewish General
Enter the date: 2021-02-07
Enter the time 09:00:00
Enter the area of the slot in the format ward-X: ward-1
Enter the Health Insurance Number of the person to be given the slot: 15
Enter the Vaccine Company: Moderna
Enter the Batch Number: 991
Enter the Vial Number: 2010
Enter the Canadian Liscence number of the nurse: 35408972
The person has been given the Pfizer-BioNTech vaccine before! Please use that!
VaccineApp Main Menu
1. Add a Person
2. Assign a slot to a Person
3. Enter Vaccination information
```