



ISTM 6202 Relational Database

**Team 5 CVS Drive-Thru COVID-19 Vaccine System**

by

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# Agenda

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- 1.** Business Problem
- 2.** Section I – As-Is System
- 3.** Section I – As-Is Business Process Map & ERD
- 4.** Section II – Proposed Solution
- 5.** Section II – Proposed Business Process Map & ERD
- 6.** Section II – Data Entity Matrix
- 7.** Section III – DB Implementation (Table Creation, Data Insert & SQL Queries)
- 8.** Conclusion & Closure

# Business Problem

- **Background**

- *CVS Health System*
- *Minute Clinic*

- **Business Problem**

- *Improvise the I.T System to cater essential requirement of vaccinating consumers*
- *Improving the current system to accommodate new business opportunity*
- *The current system has a scope to accommodate the new opportunity effectively*
- *Currently there is no system in place to support drive-thru vaccinations*



# Section I – As-IS I.T System

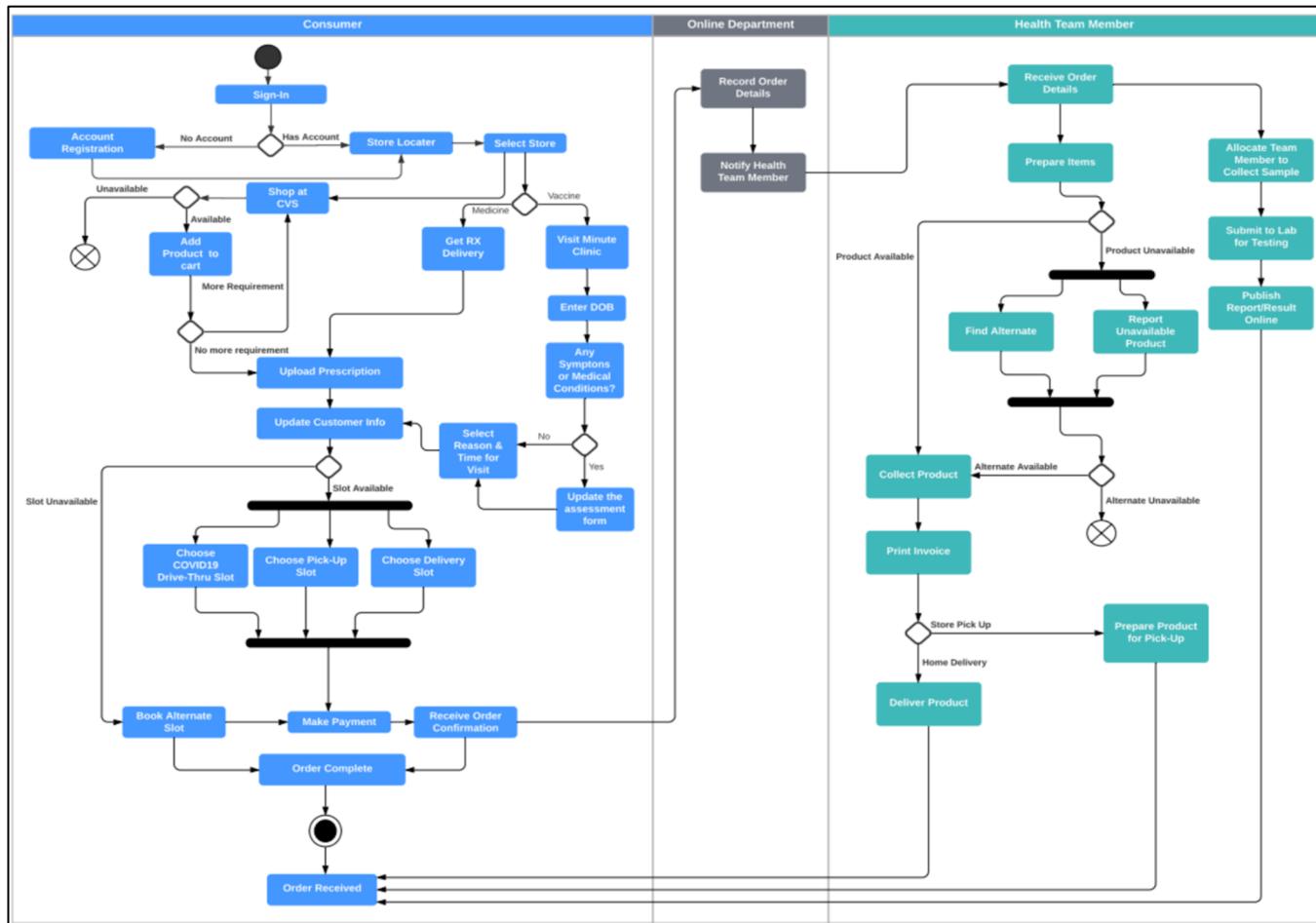
- **Current IT Systems**

- *The current business process map shows how CVS's online reservation system functions. There are three swim lanes which are consumers, the online department, and the health team members.*

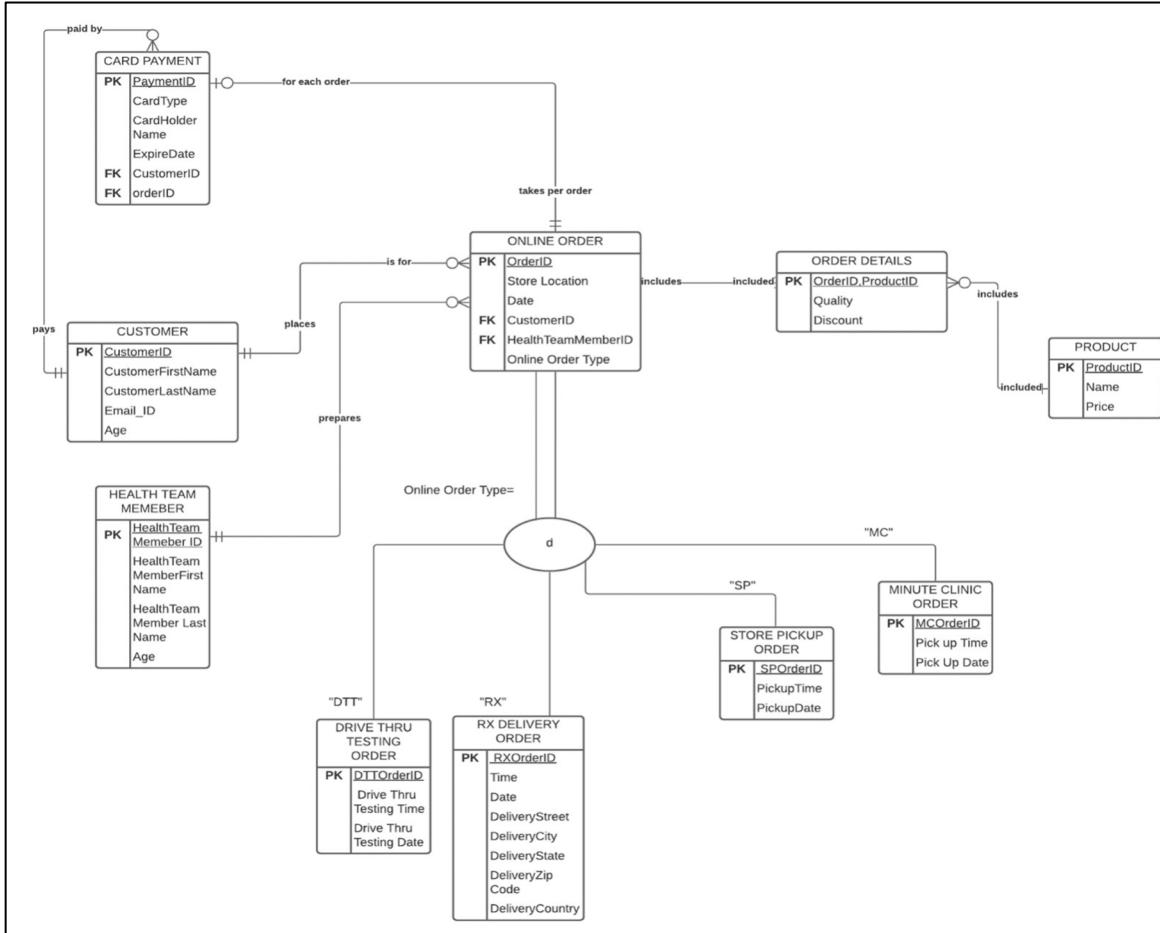


\* *As-Is Business Process Map and As-Is Database ERD is shown on next slides*

# As-Is Business Process Map



# As-Is ERD



# Section II – IT Based Proposed Solution

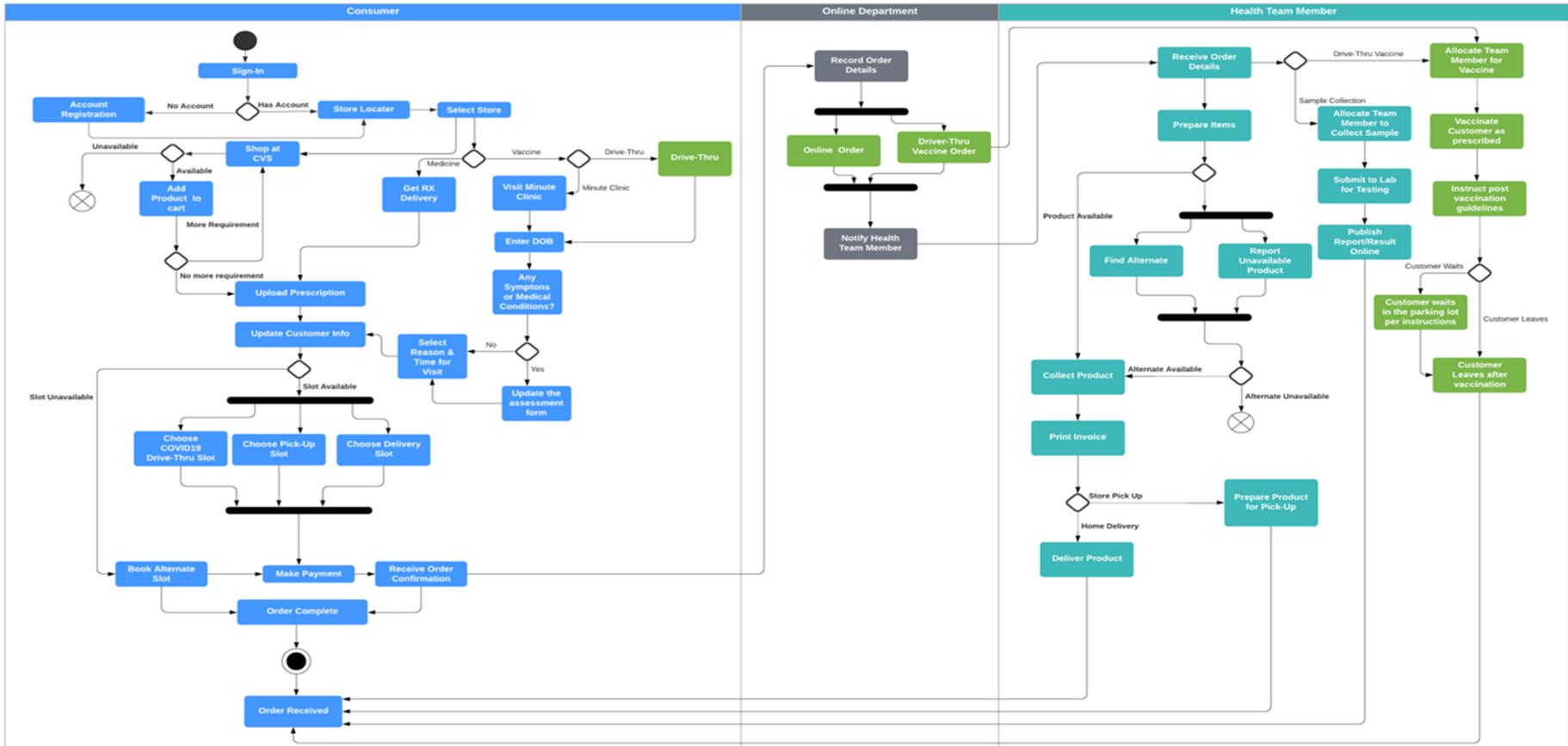
- **IT-Based Solution**

- *Leveraging the existing system to add the capability to provide covid-19 vaccines thru the current drive-thru system.*

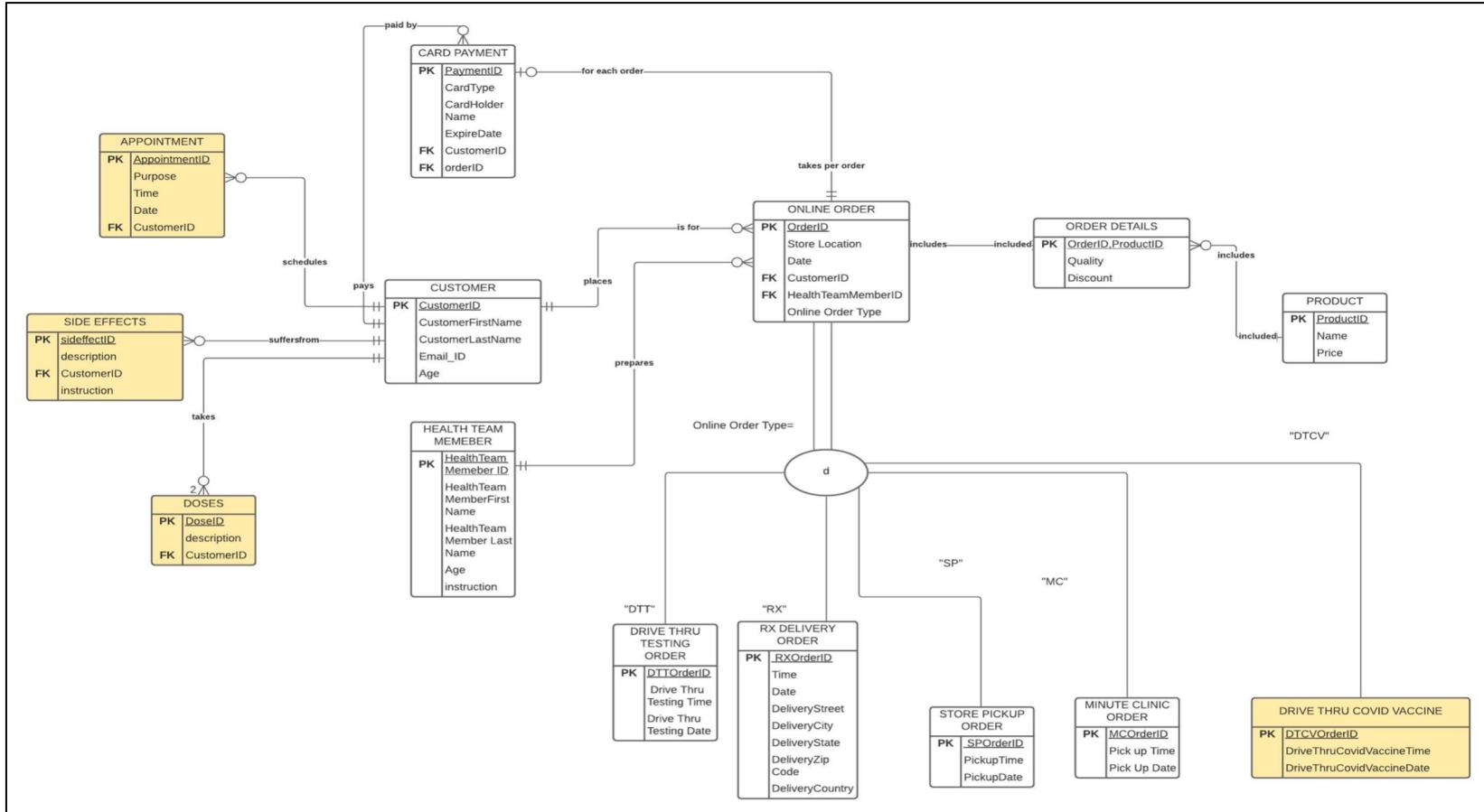


\*TO-BE Business Process Map, TO-BE Database (ERD), and DB Entity Matrix 3NF Relational Schema are shown on the next slides

# Proposed Business Process Map



# To Be ERD



# Data Entity Matrix



Data Entity Types		Online Order	Customer	Product	Card_Payment	Order_Details	Drive_Thru_COVID_Vaccine	Drive-Thru_Testing_Order	RX_Delivery_Order	Store_Pick-up_Order	Minute_Clinic_Order	Health_Team_Member
Business Functions												
Account Authorization	X	X										
Mode of Delivery	X	X			X	X	X	X	X	X	X	
Order Fulfilment	X	X	X		X	X	X	X	X	X	X	X
Pickup-Time Preference		X			X							
Delivery-Time Preference		X			X							
Payment	X	X	X	X	X							
Wait Time		X	X		X							X
Appointment Availability	X			X		X				X	X	
Sample Collection	X						X		X			X
Health Form		X					X	X			X	

# 3NF Relation Schema

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CARDPAYMENT(PaymentID, CardType, CardHolderName, ExpireDate, CustomerID, OrderID)

CUSTOMER(CustomerID, CustomerFirstName, CustomerLastName, EmailID, Age)

HEALTHTEAMMEMBER(HealthTeamMemberID, HealthTeamMemberFirstName, HealthTeamMemberLastName, Age)

ONLINEORDER(OrderID, StoreLocation, Date, CustomerID, HealthTeamMemberID, OnlineOrderType)

DRIVETHRUTESTINGORDER(DTTOrderID, DriveThruTestingTime, DriverThruTestingDate)

RXDELIVERYORDER(RXOrderID, Time, Date, DeliveryStreet, DeliveryState, DeliveryZipCode, DeliveryCountry)

STOREPICKUPORDER(SPOrderID, PickupTime, PickupDate)

MINUTECLINICORDER(MCOderID, PickupTime, PickupDate)

DRIVETHRUCOVIDVACCINE(DTCVOrderID, DriveThruCovidVaccineTime, DriveThruCovidVaccineDate)

PRODUCT(ProductID, Name, Price)

ORDERDETAILS(OrderID, ProductID, Quality, Discount)

# Section III – Database Implementation

## ➤ Table Creation Samples:

```
CREATE TABLE CVSCustomer(
CustomerID INT(3) NOT NULL,
CustomerFirstName VARCHAR(100) NOT NULL,
CustomerLastName VARCHAR(100) NOT NULL,
EmailID VARCHAR(100) NOT NULL,
Age INT(3) NOT NULL,
CONSTRAINT CVSCustomer_pk PRIMARY KEY(CustomerID));
```

```
CREATE TABLE HealthTeamMember(
HealthTeamMemberID INT(3) NOT NULL,
HealthTeamMemberFirstName VARCHAR(100) NOT NULL,
HealthTeamMemberLastName VARCHAR(100) NOT NULL,
Age INT(3) NOT NULL,
CONSTRAINT HealthTeamMember_pk PRIMARY KEY(HealthTeamMemberID));
```

```
CREATE TABLE OnlineOrder(
OrderID INT(3) NOT NULL,
StoreLocation VARCHAR(100) NOT NULL,
Date DATE,
CustomerID INT(3) NOT NULL,
HealthTeamMemberID INT(3) NOT NULL,
CONSTRAINT OnlineOrder_pk PRIMARY KEY(OrderID),
CONSTRAINT OnlineOrder_fk1 FOREIGN KEY (CustomerID) REFERENCES
CVSCustomer(CustomerID),
CONSTRAINT OnlineOrder_fk2 FOREIGN KEY (HealthTeamMemberID)
REFERENCES HealthTeamMember(HealthTeamMemberID));
```

```
CREATE TABLE DriveThruTestingOrder(
DTTOrderID INT(3) NOT NULL,
DriveThruTestingTime TIME ,
DriveThruTestingDate DATE,
CONSTRAINT DriveThruTestingOrder_pk PRIMARY KEY (DTTOrderID));
```

## ➤ Insert Data:

```
INSERT INTO CVSCustomer(CustomerID,CustomerFirstName, CustomerLastName,
EmailID, Age) VALUES
(1,'James','Smith','jsmith@hotmail.com',45),
(2,'Mary','Miller','marym9@gmail.com',34),
(3,'John','Williams','jowilliams@outlook.com',28),
(4,'David','Martinez','martinezd@hotmail.com',26),
(5,'Jenny','Wilson','jenwilson@yahoo.com',42),
(6,'Jessica','Davis','jessicad@gmail.com',51),
(7,'Richard','Clark','clarkrichard@hotmail.com',48),
(8,'Charles','Jones','cjones@yahoo.com',33),
(9,'Joseph','Rogers','rogersj@gmail.com',27),
(10,'Charles','Bennett','cb@zoho.com',60),
(11,'Sara','Andersen','andersen82@gmail.com',41),
(12,'Diana','Bates','diana123@hotmail.com',18),
(13,'Elizabeth','Goodwin','saragoodwin@sohu.com',29),
(14,'Susan','Bryant','susanbry8@gmail.com',26),
(15,'Robert','Terry','rterry@gmail.com',19),
(16,'Rachel','Green','rachgreen@gmail.com',22),
(17,'Sarah','Bass','sarahbass203@gmail.com',24),
(18,'Joey','Tribbiani','joeyt@outlook.com',61),
(19,'Romain','Jones','romainjones@gmail.com',42),
(20,'Chandler','Bing','chanbing@yahoomail.com',30),
```

```
INSERT INTO `DriveThruTestingOrder` (`DTTOrderID`, `DriveThruTestingTime`,
`DriveThruTestingDate`) VALUES ('111', '11:35:03', '2021-03-09'), ('112', '12:40:03',
'2021-03-09'), ('113', '10:34:03', '2021-03-11'), ('114', '10:38:03', '2021-03-12'), ('115',
'10:38:08', '2021-03-13'), ('116', '10:38:12', '2021-03-14'), ('117', '13:33:03', '2021-03-
15'), ('118', '14:28:03', '2021-03-16'), ('119', '14:08:52', '2021-03-17'), ('120', '14:13:52',
'2021-03-18'), ('121', '14:16:52', '2021-03-19'), ('122', '14:58:52', '2021-03-22'), ('123',
'10:08:52', '2021-03-23'), ('124', '11:08:52', '2021-03-24'), ('125', '12:08:52', '2021-03-
25'), ('126', '11:32:52', '2021-03-26'), ('127', '13:18:52', '2021-03-27'), ('128', '13:36:28',
'2021-03-28'), ('129', '12:16:25', '2021-04-05'), ('130', '12:20:37', '2021-04-07');
```

# SQL Queries 1

Showing rows 0 - 8 (9 total, Query took 0.0012 seconds.)

```

1 SELECT CVSCustomer.CustomerID, CVSCustomer.Age, CVSCustomer.CustomerFirstName
2 FROM CVSCustomer
3 INNER JOIN SideEffects ON CVSCustomer.CustomerID = SideEffects.CustomerID

```

Enable foreign key checks

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Profiling [Edit inline](#) [Edit](#) [Explain SQL](#) [Create PHP code](#) [Refresh](#)

<input type="checkbox"/> Show all	Number of rows:	25	Filter rows:	Search this table	Sort by key:	None																														
<a href="#">+ Options</a> <table border="1"> <thead> <tr> <th>CustomerID</th> <th>Age</th> <th>CustomerFirstName</th> </tr> </thead> <tbody> <tr><td>1</td><td>45</td><td>James</td></tr> <tr><td>3</td><td>28</td><td>John</td></tr> <tr><td>5</td><td>42</td><td>Jenny</td></tr> <tr><td>8</td><td>33</td><td>Charles</td></tr> <tr><td>9</td><td>27</td><td>Joseph</td></tr> <tr><td>11</td><td>41</td><td>Sara</td></tr> <tr><td>13</td><td>29</td><td>Elizabeth</td></tr> <tr><td>14</td><td>26</td><td>Susan</td></tr> <tr><td>22</td><td>55</td><td>Ross</td></tr> </tbody> </table>							CustomerID	Age	CustomerFirstName	1	45	James	3	28	John	5	42	Jenny	8	33	Charles	9	27	Joseph	11	41	Sara	13	29	Elizabeth	14	26	Susan	22	55	Ross
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14	26	Susan																																		
22	55	Ross																																		

Showing rows 0 - 10 (11 total, Query took 0.0014 seconds.)

```

1 Select CustomerID,CustomerFirstName,Age
2 From CVSCustomer
3 Where Age < 30
4 Union
5 Select CustomerID,CustomerFirstName,Age
6 From CVSCustomer
7 Where Age < 30
8 Order by CustomerFirstName

```

Enable foreign key checks

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<input type="checkbox"/> Show all	Number of rows:	25	Filter rows:	Search this table	Sort by key:	None																																				
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# SQL Queries 2

Showing rows 0 - 9 (10 total, Query took 0.0002 seconds.)

```

1 CREATE VIEW SLOTS AS
2 SELECT DriveThruCovidVaccineTime,DriveThruCovidVaccineDate
3 FROM DriveThruCovidVaccineOrder
4 ORDER BY DTCVOrderID DESC
5 LIMIT 10;

```

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+ Options

		DriveThruCovidVaccineTime	DriveThruCovidVaccineDate
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	16:20:36	2021-04-09
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	15:52:47	2021-04-08
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	14:38:17	2021-04-07
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	14:25:22	2021-04-06
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	14:07:17	2021-04-04
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	13:47:53	2021-04-02
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	13:18:58	2021-04-01
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	13:13:08	2021-03-31
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	12:35:08	2021-03-30
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	12:10:56	2021-03-29

[←](#)  Check all With selected: [Edit](#) [Copy](#) [Delete](#) [Export](#)

Showing rows 0 - 9 (10 total, Query took 0.0004 seconds.)

`SELECT * FROM `slots``

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Show all | Number of rows: 25 Filter rows: Search this table

+ Options

DriveThruCovidVaccineTime	DriveThruCovidVaccineDate
16:20:36	2021-04-09
15:52:47	2021-04-08
14:38:17	2021-04-07
14:25:22	2021-04-06
14:07:17	2021-04-04
13:47:53	2021-04-02
13:18:58	2021-04-01
13:13:08	2021-03-31
12:35:08	2021-03-30
12:10:56	2021-03-29

# Conclusion

## Outcome

Reducing :  
Dependency  
Time  
Others:  
Maximizing Vaccination Rate  
Contactless to adhere to  
social distancing standards

## Limitation

Technology Independence  
Wait Time

## Discussion

Q & A