--DATABASE IMPLEMENTATION

CREATE DATABASE "CTrace";

USE CTrace;

--Citizen

CREATE TABLE Citizen

(

CitizenID INT IDENTITY NOT NULL PRIMARY KEY,

--GovermentID Varbinary(250) NOT NULL, (Added Via Encryption)

FirstName Varchar(20) NOT NULL,

LastName Varchar(20) NOT NULL,

DOB Date NOT NULL,

Gender Char(10) NOT NULL,

GPS Varchar(40) NOT NULL

--Age (Added via computed function)

);

--INSERT Citizen:

SET IDENTITY\_INSERT Citizen OFF

INSERT INTO Citizen VALUES ('Nathan','Ake','10/01/1996','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Eden','Hazard','12/10/1990','Male','www.xyz.com');

INSERT INTO Citizen VALUES (,'Helly','Berry','10/10/1995','Female','www.xyz.com');

INSERT INTO Citizen VALUES ('Mason','Mount','09/02/1993','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Scarlet','Johnson','01/04/1999','Female','www.xyz.com');

INSERT INTO Citizen VALUES ('Recee','James','01/04/1998','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Anokhi','Lodha','02/06/2010','Female','www.xyz.com');

INSERT INTO Citizen VALUES ('Ivanka','Trump','29/04/2000','Female','[www.xyz.com](http://www.xyz.com)');

INSERT INTO Citizen VALUES ('Kate','Winset','01/09/1999','Female','www.xyz.com');

INSERT INTO Citizen VALUES ('Rahul','Johar','01/04/1999','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Kai','Hartvaz','23/06/1999','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Kepa','Terry','11/09/2009','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Julie','Watson','01/07/1991','Female','[www.xyz.com](http://www.xyz.com)');

INSERT INTO Citizen VALUES ('Hilton','05/06/1962','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Jane','Watson','02/13/1975','Female','www.xyz.com');

INSERT INTO Citizen VALUES ('Kabir','Singh','12/04/1982','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Trisha','Jain','01/07/1972','Female','www.xyz.com');

INSERT INTO Citizen VALUES ('Jude','Scott','12/07/1969','Male','[www.xyz.com](http://www.xyz.com)');

INSERT INTO Citizen VALUES ('Paris','Steven','02/13/1988','Female','www.xyz.com');

INSERT INTO Citizen VALUES ('Kane','Willison','12/04/1982','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Marcos','Reus','12/04/1982','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Paul','Pogba','11/22/1987','Male','www.xyz.com');

INSERT INTO Citizen VALUES ('Ander','Herara','04/17/1987','Male','www.xyz.com');

INSERT INTO Citizen Values('Ujjwal','Gupta','02/08/2000','Male','www.xyz.com');

INSERT INTO Citizen Values('Harry','Wilson','01/07/1998','Male','www.xyz.com');

INSERT INTO Citizen Values('Sam','Park','08/06/1995','Male','www.xyz.com');

INSERT INTO Citizen Values('Wilimam','Sen','11/11/1994','Male','www.xyz.com');

INSERT INTO Citizen Values(‘'Kate','Marry','02/09/1996','Female','www.xyz.com');

INSERT INTO Citizen Values('Helan','Wilson','09/05/1999','Female','www.xyz.com');

INSERT INTO Citizen Values('Medila','Parker','07/08/2003','Male','www.xyz.com');

INSERT INTO Citizen Values('Aditya','Jain','02/08/2002','Male','www.xyz.com');

INSERT INTO Citizen Values('Chetan','Watson','06/06/1997','Male','www.xyz.com');

INSERT INTO Citizen Values('Tom','Wiliam','02/10/1994','Male','www.xyz.com');

INSERT INTO Citizen Values(,'Kelly','Barney','04/09/2000','Female','[www.xyz.com](http://www.xyz.com)');

INSERT INTO Citizen VALUES('Mary','Johnson','1993-09-28','Female','www.xyz.com')

INSERT INTO Citizen VALUES('Peter','Watson','1991-09-28','Male','www.xyz.com')

INSERT INTO Citizen VALUES('John','Hilton','2002-09-28','Male','www.xyz.com')

INSERT INTO Citizen VALUES('Katrine','Hillary','1989-09-28','Female','www.xyz.com')

INSERT INTO Citizen VALUES('Sarthak','Saini','1980-09-28','Male','www.xyz.com')

INSERT INTO Citizen VALUES('Samarath','Saini','1999-09-28','Male','www.xyz.com')

SET IDENTITY\_INSERT Citizen OFF

--Insurance

CREATE TABLE Insurance

(

InsuranceID Varchar(20) NOT NULL PRIMARY KEY,

CitizenID INT NOT NULL REFERENCES Citizen(CitizenID),

Company\_Name Varchar(20),

Validity Date

);

--INSERT Insurance:

INSERT INTO Insurance VALUES ('IN01',18,'Kaiser','2020-12-01');

INSERT INTO Insurance VALUES ('IN02',19,'WellCare','2021-11-01');

INSERT INTO Insurance VALUES ('IN03',20,'WellCare','2020-12-01');

INSERT INTO Insurance VALUES ('IN04',21,'Kaiser','2022-12-01');

INSERT INTO Insurance VALUES ('IN05',22,'WellCare','2022-12-01');

INSERT INTO Insurance VALUES ('IN06',23,'Kaiser','2021-11-01');

INSERT INTO Insurance VALUES ('IN07',24,'WellCare','2020-12-01');

INSERT INTO Insurance VALUES ('IN08',25,'UnitedHealth','2022-12-01');

INSERT INTO Insurance VALUES ('IN09',26,'UnitedHealth','2020-12-01');

INSERT INTO Insurance VALUES ('IN10',27,'Kaiser','2021-11-01');

INSERT INTO Insurance VALUES ('IN11',28,'UnitedHealth','2020-12-01');

INSERT INTO Insurance VALUES ('IN12',29,'WellCare','2020-12-01');

INSERT INTO Insurance VALUES ('IN13',30,'WellCare','2020-12-01');

INSERT INTO Insurance VALUES ('IN14',31,'UnitedHealth','2022-12-01');

INSERT INTO Insurance VALUES ('IN15',34,'UnitedHealth','2022-12-01');

INSERT INTO Insurance VALUES ('IN16',35,'WellCare','2022-12-01');

INSERT INTO Insurance VALUES ('IN17',36,'Kaiser','2024-12-01');

INSERT INTO Insurance VALUES ('IN18',37,'Kaiser','2024-12-01');

INSERT INTO Insurance VALUES ('IN19',38,'UnitedHealth','2024-12-01');

INSERT INTO Insurance VALUES ('IN20',39,'WellCare','2021-11-01');

INSERT INTO Insurance VALUES ('IN21',40,'WellCare','2020-12-01');

INSERT INTO Insurance VALUES ('IN22',41,'UnitedHealth','2024-12-01');

INSERT INTO Insurance VALUES ('IN23',42,'UnitedHealth','2020-12-01');

INSERT INTO Insurance VALUES ('IN24',43,'WellCare','2024-12-01');

INSERT INTO Insurance VALUES ('IN25',44,'UnitedHealth','2020-12-01');

INSERT INTO Insurance VALUES ('IN26',45,'UnitedHealth','2021-11-01');

INSERT INTO Insurance VALUES ('IN27',46,'WellCare','2024-12-01');

INSERT INTO Insurance VALUES ('IN28',47,'Kaiser','2025-12-01');

INSERT INTO Insurance VALUES ('IN29',48,'WellCare','2025-12-01');

INSERT INTO Insurance VALUES ('IN30',49,'Kaiser','2021-11-01');

--Medical\_History

CREATE TABLE Medical\_History

(

MedicalID Varchar(20) NOT NULL PRIMARY KEY,

InsuranceID Varchar(20) NOT NULL REFERENCES Insurance(InsuranceID),

Condition\_Name Varchar(MAX)

);

--INSERT Medical\_History:

INSERT INTO Medical\_History Values('M1','IN01','Hypertension');

INSERT INTO Medical\_History Values('M2','IN05','Hypertension');

INSERT INTO Medical\_History Values('M3','IN07','Cancer');

INSERT INTO Medical\_History Values('M4','IN08','Diabetes');

INSERT INTO Medical\_History Values('M5','IN15','Thyroid');

INSERT INTO Medical\_History Values('M6','IN11','Diabetes');

INSERT INTO Medical\_History Values('M7','IN20','Asthma');

INSERT INTO Medical\_History Values('M8','IN21','Heart Problem');

INSERT INTO Medical\_History Values('M9','IN25','Asthma');

INSERT INTO Medical\_History Values('M10','IN29','Obesity');

--Tested

CREATE TABLE Tested

(

TestedID Varchar(20) NOT NULL PRIMARY KEY,

CitizenID INT NOT NULL REFERENCES Citizen(CitizenID),

Tested\_Date Date NOT NULL

);

--INSERT Tested

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T40', 48,’2020-03-05’);

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T41', 48,'2020-05-06');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T42', 48,'2020-05-20');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T43', 48,'2020-05-28');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T44', 48,'2020-06-03');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T45', 48,'2020-06-04');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T46', 48,'2020-06-10');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T47', 48,'2020-06-12');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T48', 48,'2020-06-15');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T49', 48,'2020-06-19');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T50', 48,'2020-06-22');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T51', 48,'2020-07-01');

INSERT INTO Tested (TestedID, CitizenID, Tested\_Date) VALUES('T71','51','2020-05-09')

INSERT INTO Tested (TestedID, CitizenID, Tested\_Date) VALUES('T72','52','2020-06-10')

INSERT INTO Tested (TestedID, CitizenID, Tested\_Date) VALUES('T73','53','2020-07-14')

INSERT INTO Tested (TestedID, CitizenID, Tested\_Date) VALUES('T74','54','2020-01-14')

INSERT INTO Tested (TestedID, CitizenID, Tested\_Date) VALUES('T75','55','2020-02-12')

INSERT INTO Tested (TestedID, CitizenID, Tested\_Date) VALUES('T76','56','2020-08-11')

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T52', 48,'2020-07-03');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T53', 48,'2020-07-04');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T54', 48,'2020-07-06');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T55', 48,'2020-07-13');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T56', 48,'2020-07-16');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T57', 48,'2020-07-23');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T58', 48,'2020-07-24');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T59', 48,'2020-07-25');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T60', 48,'2020-07-26');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T61', 48,'2020-07-27');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T62', 48,'2020-07-28');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T63', 48,'2020-08-02');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T64', 48,'2020-08-03');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T65', 48,'2020-08-04');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T66', 48,'2020-08-05');

INSERT INTO Tested(TestedID, CitizenID, Tested\_Date) VALUES('T67', 48,'2020-08-06');

--Address

CREATE TABLE Address

(

AddressID varchar(5) NOT NULL PRIMARY KEY ,

HouseNumber INTEGER NOT NULL,

StreetName varchar(40) NOT NULL,

City varchar(40) NOT NULL,

State varchar(40) NOT NULL,

Country varchar(40) NOT NULL,

ZipCode INTEGER NOT NULL

);

--INSERT Address

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A1',100,'Street N','Bellevue','SEA','US',122)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A2',101,'10th Avenue E','Redmond','SEA','US',123)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A3',102,'10th Avenue NE','Kirkland','SEA','US',124)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A4',103,'10th Avenue NW','Bothell','SEA','US',125)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A5',104,'10th Avenue S','Tacoma','SEA','US',126)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A6',105,'10th Avenue SW','Issaquah','SEA','US',127)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A7',106,'10th Ct S','Issaquah','SEA','US',128)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A8',107,'10th Lane SW','Everett','SEA','US',129)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A9',108,'10th PI NE','Woodinville','SEA','US',129)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A10',109,'10th PI NW','Bainbridge Island','SEA','US',130)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A11',110,'10th PI S','Mercer Island','SEA','US',131)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A12',111,'10th PI SW','Sammamish','SEA','US',132)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A13',112,'10th TER NW','Olympia','SEA','US',133)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A14',113,'12th PI S','Lynnwood','SEA','US',134)

INSERT INTO Address(AddressID,HouseNumber,StreetName,City,CitizenState,Country,ZipCode)

VALUES('A15',114,'12th PI SW','Renton','SEA','US',135)

INSERT INTO Address values('A16','116','Corwin Pl S','Monroe','SEA','US',139);

INSERT INTO Address values('A17','118','Corson Avenue S','Monroe','SEA','US',138);

INSERT INTO Address values('A18','120','Corporate Drive N','Bonney Lake','SEA','US',241);

INSERT INTO Address values('A19','125','Convention Place ','Bonney Lake','SEA','US',242);

INSERT INTO Address values('A20','108','Constance Drive W','Maple Valley','SEA','US',248);

INSERT INTO Address values('A21','121','NE ','Maple Valley','SEA','US',189);

INSERT INTO Address values('A22','130','Conkling Pl W','Lake Stevens','SEA','US',179);

INSERT INTO Address values('A23','131','33rd Avenue','Lake Stevens','SEA','US',199);

INSERT INTO Address values('A24','11','32nd Pl NE','Milton','SEA','US',229);

INSERT INTO Address values('A25','1008','32nd Lane S','Milton','SEA','US',259);

INSERT INTO Address values('A26','110','32nd Avenue','Milton','SEA','US',300);

INSERT INTO Address values('A27','191','31st Pl SW','Snoqualmie','SEA','US',301);

INSERT INTO Address values('A28','186','32nd Avenue NE','Snoqualmie','SEA','US',333);

INSERT INTO Address values('A29','510','32nd Avenue NW ','Shoreline','SEA','US',305);

INSERT INTO Address values('A30','139','31st Pl S','Gig Harbor','SEA','US',144);

INSERT INTO Address VALUES ('D1',151,'Street151','Bellevue', 'SEA','US',122)

INSERT INTO Address VALUES ('D2',152,'Street152','Bainbridge Island','US','SEA', 130)

INSERT INTO Address VALUES ('D3',153,'Street153','Monroe','SEA', 'US',139)

INSERT INTO Address VALUES ('D4',154,'Street154','Monroe', 'SEA','US',229)

INSERT INTO Address VALUES ('D5',155,'Street155','Monroe', 'SEA','US',144)

INSERT INTO Address VALUES ('D6',156,'Street156','Monroe', 'SEA','US',135)

INSERT INTO Address VALUES ('Q1',151,'StreetQ1','Bellevue', 'SEA','US',122)

INSERT INTO Address VALUES ('Q2',152,'StreetQ2','Bainbridge Island','US','SEA', 130)

INSERT INTO Address VALUES ('Q3',153,'StreetQ3','Monroe','SEA', 'US',139)

INSERT INTO Address VALUES ('Q4',154,'StreetQ4','Monroe', 'SEA','US',229)

INSERT INTO Address VALUES ('Q5',155,'StreetQ5','Monroe', 'SEA','US',144)

INSERT INTO Address VALUES ('Q6',156,'StreetQ6','Monroe', 'SEA','US',135)

INSERT INTO Address VALUES ('Q7',151,'StreetQ7','Bellevue', 'SEA','US',122)

INSERT INTO Address VALUES ('Q8',152,'StreetQ8','Bainbridge Island','US','SEA', 130)

INSERT INTO Address VALUES ('Q9',153,'StreetQ9','Monroe','SEA', 'US',139)

INSERT INTO Address VALUES ('Q10',154,'StreetQ10','Monroe', 'SEA','US',229)

INSERT INTO Address VALUES ('D7',157,'Street157','Monroe', 'SEA','US',135)

INSERT INTO Address VALUES ('D8',158,'Street158','Bellevue', 'SEA','US',122)

INSERT INTO Address VALUES ('D9',159,'Street159','Bellevue', 'SEA','US',122)

INSERT INTO Address VALUES ('D10',160,'Street160','Bellevue', 'SEA','US',122)

INSERT INTO Address VALUES ('D11',161,'Street161','Monroe', 'SEA','US',135)

INSERT INTO Address VALUES ('D12',162,'Street162','Monroe', 'SEA','US',135)

--CitizenAddress

CREATE TABLE CitizenAddress

(

CitizenID varchar(40) NOT NULL

REFERENCES Citizens(CitizenID),

AddressID varchar(5) NOT NULL

REFERENCES Address(AddressID)

CONSTRAINT pkaddress PRIMARY KEY CLUSTERED

(CitizenID, AddressID)

);

--INSERT CitizenAddress

CitizenAddress:

Insert into CitizenAddress(CitizenID,AddressID) values(18,'A15');

Insert into CitizenAddress(CitizenID,AddressID) values(19,'A15');

Insert into CitizenAddress(CitizenID,AddressID) values(20,'A15');

Insert into CitizenAddress(CitizenID,AddressID) values(21,'A16');

Insert into CitizenAddress(CitizenID,AddressID) values(22,'A16');

Insert into CitizenAddress(CitizenID,AddressID) values(23,'A16');

Insert into CitizenAddress(CitizenID,AddressID) values(24,'A17');

Insert into CitizenAddress(CitizenID,AddressID) values(25,'A17');

Insert into CitizenAddress(CitizenID,AddressID) values(26,'A17');

Insert into CitizenAddress(CitizenID,AddressID) values(27,'A18');

Insert into CitizenAddress(CitizenID,AddressID) values(28,'A18');

Insert into CitizenAddress(CitizenID,AddressID) values(29,'A18');

Insert into CitizenAddress(CitizenID,AddressID) values(30,'A19');

Insert into CitizenAddress(CitizenID,AddressID) values(31,'A19');

Insert into CitizenAddress(CitizenID,AddressID) values(32,'A19');

Insert into CitizenAddress(CitizenID,AddressID) values(33,'A20');

Insert into CitizenAddress(CitizenID,AddressID) values(34,'A20');

Insert into CitizenAddress(CitizenID,AddressID) values(35,'A20');

Insert into CitizenAddress(CitizenID,AddressID) values(36,'A21');

Insert into CitizenAddress(CitizenID,AddressID) values(37,'A22');

Insert into CitizenAddress(CitizenID,AddressID) values(38,'A23');

Insert into CitizenAddress(CitizenID,AddressID) values(39,'A23');

Insert into CitizenAddress(CitizenID,AddressID) values(40,'A24');

Insert into CitizenAddress(CitizenID,AddressID) values(41,'A24');

Insert into CitizenAddress(CitizenID,AddressID) values(42,'A24');

Insert into CitizenAddress(CitizenID,AddressID) values(43,'A24');

Insert into CitizenAddress(CitizenID,AddressID) values(44,'A25');

Insert into CitizenAddress(CitizenID,AddressID) values(45,'A25');

Insert into CitizenAddress(CitizenID,AddressID) values(46,'A26');

Insert into CitizenAddress(CitizenID,AddressID) values(47,'A26');

Insert into CitizenAddress(CitizenID,AddressID) values(48,'A26');

Insert into CitizenAddress(CitizenID,AddressID) values(49,'A27');

--Positive

CREATE TABLE POSITIVE

(

PatientID varchar(5) NOT NULL PRIMARY KEY ,

TestedID varchar(20) NOT NULL REFERENCES Tested(testedID),

HospitalID varchar(5) NOT NULL REFERENCES Hospital(HospitalID),

Severity\_Of\_Condition varchar(40) NOT NULL,

Patient\_Status varchar(40) NOT NULL,

Positive\_Date datetime DEFAULT Current\_Timestamp

);

--INSERT Positive

INSERT INTO Positive VALUES ('P1','T40','H3','Mild','Recovered','2020-03-16');

INSERT INTO Positive VALUES ('P2','T41','H6','Severe','Deceased','2020-05-15');

INSERT INTO Positive VALUES ('P3','T42','H6',Null,'Active','2020-04-08');

INSERT INTO Positive VALUES ('P4','T44','H7','Severe','Active','2020-03-29');

INSERT INTO Positive VALUES ('P5','T45','H9','Severe','Recovered','2020-04-19');

INSERT INTO Positive VALUES ('P6','T46','H8','Mild','Active','2020-06-18');

INSERT INTO Positive VALUES ('P7','T47','H3','Mild','Deceased','2020-07-28');

INSERT INTO Positive VALUES ('P8','T48','H7','Severe','Recovered','2020-07-01');

INSERT INTO Positive VALUES ('P9','T49','H6',Null,'Active','2020-06-01');

INSERT INTO Positive VALUES ('P10','T50','H9','Mild','Recovered','2020-05-01');

INSERT INTO Positive VALUES ('P11','T52','H4','Mild','Recovered','2020-05-01');

INSERT INTO Positive VALUES ('P12','T54','H8','Mild','Active','2020-04-01');

INSERT INTO Positive VALUES ('P13','T55','H7','Severe','Recovered','2020-03-09');

INSERT INTO Positive VALUES ('P14','T56','H9','Severe','Recovered','2020-06-08');

INSERT INTO Positive VALUES ('P15','T57','H9','Mild','Active','2020-07-19');

INSERT INTO Positive VALUES ('P16','T58','H9','Mild','Recovered','2020-06-17');

INSERT INTO Positive VALUES ('P17','T59','H3','Mild','Active','2020-04-09');

INSERT INTO Positive VALUES ('P18','T60','H4','Severe','Recovered','2020-03-01');

INSERT INTO Positive VALUES ('P19','T61','H7','Mild','Deceased','2020-03-06');

INSERT INTO Positive VALUES ('P20','T62','H9','Mild','Recovered','2020-05-03');

INSERT INTO Positive VALUES ('P21','T63','H8',Null,'Deceased','2020-05-06');

INSERT INTO Positive VALUES ('P22','T64','H8','Severe','Active','2020-03-01');

INSERT INTO Positive VALUES ('P23','T65','H8','Severe','Recovered','2020-03-01');

INSERT INTO Positive VALUES ('P24','T66','H8','Mild','Active','2020-03-21');

INSERT INTO Positive VALUES ('P25','T68','H4',Null,'Deceased','2020-04-01');

INSERT INTO POSITIVE VALUES('P30','T71','H6',NULL,'Deceased','2020-05-10 00:00:00.000')

INSERT INTO POSITIVE VALUES('P31','T72','H6',NULL,'Deceased','2020-06-11 00:00:00.000')

INSERT INTO POSITIVE VALUES('P32','T73','H6',NULL,'Deceased','2020-07-15 00:00:00.000')

INSERT INTO POSITIVE VALUES('P33','T74','H6',NULL,'Deceased','2020-01-15 00:00:00.000')

INSERT INTO POSITIVE VALUES('P34','T75','H6',NULL,'Deceased','2020-02-13 00:00:00.000')

INSERT INTO POSITIVE VALUES('P35','T76','H6',NULL,'Deceased','2020-08-12 00:00:00.000')

--Hospital

CREATE TABLE Hospital

(

HospitalID varchar(5) NOT NULL PRIMARY KEY ,

Hospital\_Name varchar(40) NOT NULL,

AddressID varchar(5) NOT NULL

REFERENCES Address(AddressID),

vacantBeds INTEGER NOT NULL

);

--INSERT Hospital

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H1','Mayo Clinic','A1',0);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H2','Cleveland Clinic','A2',0);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H3',' General Hospital','A3',4);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H4','Brigham and Womens Hospital','A4',10);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H5','Astria Sunnyside Hospital','A5',0);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H6','Cascade Valley Hospital','A6',20);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H7','Central Washington Hospital ','A7',0);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H8','EvergreenHealth Monroe','A8',7);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H9','Harrison Medical Center','A9',8);

INSERT INTO Hospital(HospitalID,HospitalName,AddressID,vacantBeds)

VALUES('H10','Highline Medical Center','A10',0);

-- FinalDisposition

CREATE TABLE FinalDisposition

(

PatientID varchar(5) NOT NULL PRIMARY KEY

REFERENCES POSITIVE(PatientID),

AddressID varchar(5) NOT NULL

REFERENCES Address(AddressID),

);

--INSERT FinalDisposition

INSERT INTO FinalDisposition VALUES('P19','D5')

INSERT INTO FinalDisposition VALUES('P2','D2')

INSERT INTO FinalDisposition VALUES('P7','D3')

INSERT INTO FinalDisposition VALUES('P21','D4')

INSERT INTO FinalDisposition VALUES('P30','D7')

INSERT INTO FinalDisposition VALUES('P31','D8')

INSERT INTO FinalDisposition VALUES('P32','D9')

INSERT INTO FinalDisposition VALUES('P33','D10')

INSERT INTO FinalDisposition VALUES('P34','D11')

INSERT INTO FinalDisposition VALUES('P35','D12')

--Exposed

CREATE TABLE Exposed

(

Exposed\_ID Varchar(10) NOT NULL PRIMARY KEY,

Citizen\_ID Varchar(40) NOT NULL,

Date DATE NOT NULL

);

--INSERT Exposed

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E1',37,'2020-3-04')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E2',49,'2020-3-04')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E3',21,'2020-3-04')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E4',29,'2020-3-04')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E5',18,'2020-5-03')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E6',30,'2020-5-02')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E7',34,'2020-5-05')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E8',35,'2020-5-06')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E9',36,'2020-5-07')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E10',38,'2020-6-08')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E11',39,'2020-7-08')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E12',28,'2020-7-20')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E13',40,'2020-7-21')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E14',41,'2020-7-22')

insert into Exposed(Exposed\_ID,CitizenID,Date) values('E15',19,'2020-7-28')

-- ExposedPositive

CREATE TABLE ExposedPositive

(

Exposed\_ID Varchar(10) NOT NULL PRIMARY KEY

REFERENCES Exposed(Exposed\_ID),

Patient\_ID Varchar(10) NOT NULL PRIMARY KEY

REFERENCES Positive(Patient\_ID)

);

--INSERT Exposed\_Positive

insert into ExposedPositive(Exposed\_ID,PatientID) values('E1','P1')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E10','P1')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E11','P1')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E12','P16')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E13','P16')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E14','P16')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E15','P11')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E7','P11')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E8','P11')

insert into ExposedPositive(Exposed\_ID,PatientID) values('E9','P11')

-- Potential\_Reasons

CREATE TABLE Potential\_Reasons

(

Potential\_Reasons\_ID Varchar(10) NOT NULL PRIMARY KEY,

Reason\_Name Varchar(Max) NOT NULL

);

--INSERT Potential\_Reasons

INSERT INTO Potential\_Reasons values('PR01','Travelling');

INSERT INTO Potential\_Reasons values('PR02','Exposed to Covid Patient');

INSERT INTO Potential\_Reasons values('PR03','Visited to a crowded place');

INSERT INTO Potential\_Reasons values('PR04','Attended any kind of Group activity');

INSERT INTO Potential\_Reasons values('PR05','Visited a salon');

INSERT INTO Potential\_Reasons values('PR06','Visited hospital');

INSERT INTO Potential\_Reasons values('PR07','Went out for morning walk');

INSERT INTO Potential\_Reasons values('PR08','Visited gym');

INSERT INTO Potential\_Reasons values('PR09','Had restaurant food');

INSERT INTO Potential\_Reasons values('PR10','Corona warrior');

--Positive\_Potential\_Reasons

CREATE TABLE Positive\_Potential\_Reasons

(Patient\_ID Varchar(10) NOT NULL PRIMARY KEY

REFERENCES Positive(Patient\_ID),

Potential\_Reasons\_ID Varchar(10) NOT NULL PRIMARY KEY

REFERENCES Potential\_Reasons(Potential\_Reasons\_ID)

);

--INSERT Positive\_Potential\_Reasons

INSERT INTO Positive\_Potential\_Reasons VALUES('P1','PR10');

INSERT INTO Positive\_Potential\_Reasons VALUES('P2','PR09');

INSERT INTO Positive\_Potential\_Reasons VALUES('P3','PR10');

INSERT INTO Positive\_Potential\_Reasons VALUES('P4','PR08');

INSERT INTO Positive\_Potential\_Reasons VALUES('P5','PR09');

INSERT INTO Positive\_Potential\_Reasons VALUES('P6','PR07');

INSERT INTO Positive\_Potential\_Reasons VALUES('P7','PR01');

INSERT INTO Positive\_Potential\_Reasons VALUES('P8','PR06');

INSERT INTO Positive\_Potential\_Reasons VALUES('P9','PR02');

INSERT INTO Positive\_Potential\_Reasons VALUES('P10','PR08');

INSERT INTO Positive\_Potential\_Reasons VALUES('P11','PR02');

INSERT INTO Positive\_Potential\_Reasons VALUES('P12','PR01');

INSERT INTO Positive\_Potential\_Reasons VALUES('P13','PR01');

INSERT INTO Positive\_Potential\_Reasons VALUES('P14','PR03');

INSERT INTO Positive\_Potential\_Reasons VALUES('P15','PR05');

INSERT INTO Positive\_Potential\_Reasons VALUES('P16','PR04');

INSERT INTO Positive\_Potential\_Reasons VALUES('P17','PR07');

INSERT INTO Positive\_Potential\_Reasons VALUES('P18','PR08');

INSERT INTO Positive\_Potential\_Reasons VALUES('P19','PR07');

INSERT INTO Positive\_Potential\_Reasons VALUES('P20','PR01');

INSERT INTO Positive\_Potential\_Reasons VALUES('P21','PR01');

INSERT INTO Positive\_Potential\_Reasons VALUES('P22','PR02');

INSERT INTO Positive\_Potential\_Reasons VALUES('P23','PR01');

INSERT INTO Positive\_Potential\_Reasons VALUES('P24','PR09');

--PublicQurantine

CREATE TABLE Public\_Quarantine

(

QuarantineID varchar(5) NOT NULL PRIMARY KEY,

AddressID varchar(5) NOT NULL REFERENCES Address(AddressID),

VacantUnits varchar(5) NOT NULL

);

-- INSERT INTO Public\_Quarantine

INSERT INTO Public\_Quarantine VALUES('AQ1','A1',10);

INSERT INTO Public\_Quarantine VALUES('AQ2','A2',20);

INSERT INTO Public\_Quarantine VALUES('AQ3','A3',100);

INSERT INTO Public\_Quarantine VALUES('AQ4','A4',50);

INSERT INTO Public\_Quarantine VALUES('AQ5','A5',150);

INSERT INTO Public\_Quarantine VALUES('AQ6','A6',200);

INSERT INTO Public\_Quarantine VALUES('AQ7','A7',120);

INSERT INTO Public\_Quarantine VALUES('AQ8','A8',86);

INSERT INTO Public\_Quarantine VALUES('AQ9','A9',99);

INSERT INTO Public\_Quarantine VALUES('AQ10','A11',12);

INSERT INTO Public\_Quarantine VALUES('AQ11','A12',178);

INSERT INTO Public\_Quarantine VALUES('AQ12','A13',129);

INSERT INTO Public\_Quarantine VALUES('AQ13','A14',109);

INSERT INTO Public\_Quarantine VALUES('AQ14','A15',120);

INSERT INTO Public\_Quarantine VALUES('AQ15','A16',175);

--Out\_Patient

CREATE TABLE Out\_Patient

(

PatientID varchar(5) NOT NULL PRIMARY KEY REFERENCES Positive(PatientID) ,

Checkback\_Date datetime DEFAULT Current\_Timestamp,

QuarantineID varchar(5) NOT NULL REFERENCES Public\_Quarantine(QuarantineID)

);

--INSERT Out\_Patient

insert into Out\_Patient values('P1','2020-04-10','AQ1');

insert into Out\_Patient values('P13','2020-04-05','AQ1');

insert into Out\_Patient values('P14','2020-06-15','AQ10');

insert into Out\_Patient values('P15','2020-07-20','AQ10');

insert into Out\_Patient values('P2','2020-06-10','AQ10');

insert into Out\_Patient values('P20','2020-05-09','AQ3');

insert into Out\_Patient values('P21','2020-05-14','AQ3');

insert into Out\_Patient values('P24','2020-04-20','AQ7');

insert into Out\_Patient values('P25','2020-09-01','AQ7');

insert into Out\_Patient values('P26','2020-09-10','AQ7');

--Hospitalized\_Patient

CREATE TABLE Hospitalized\_Patient

(

PatientID varchar(5) NOT NULL PRIMARY KEY REFERENCES Positive(PatientID) ,

Date\_Admitted datetime DEFAULT Current\_Timestamp,

Date\_Discharged datetime DEFAULT Current\_Timestamp

);

-- INSERT Hospitalized\_Patient

-- RECOVERED

INSERT INTO Hospitalized\_Patient VALUES('P18','2020-06-01','2020-14-01')

INSERT INTO Hospitalized\_Patient VALUES('P10','2020-02-15','2020-03-10')

INSERT INTO Hospitalized\_Patient VALUES('P11','2020-02-11','2020-02-27')

INSERT INTO Hospitalized\_Patient VALUES('P16','2020-03-12','2020-03-31')

INSERT INTO Hospitalized\_Patient VALUES('P23','2020-05-10','2020-05-30')

-- ACTIVE

INSERT INTO Hospitalized\_Patient VALUES('P4','2020-08-01',NULL)

INSERT INTO Hospitalized\_Patient VALUES('P12','2020-08-02',NULL)

INSERT INTO Hospitalized\_Patient VALUES('P17','2020-08-01',NULL)

INSERT INTO Hospitalized\_Patient VALUES('P22','2020-08-05',NULL)

INSERT INTO Hospitalized\_Patient VALUES('P3','2020-07-30',NULL)

--Symptoms

CREATE TABLE Symptoms

(

Symptom\_ID Varchar(10) NOT NULL PRIMARY KEY,

Type Varchar(Max)

);

--INSERT Symptoms

INSERT INTO Symptoms VALUES ('S01','Fever');

INSERT INTO Symptoms VALUES ('S02','Dry Cough');

INSERT INTO Symptoms VALUES ('S03','Tiredness');

INSERT INTO Symptoms VALUES ('S04','BodyAches');

INSERT INTO Symptoms VALUES ('S05','Sore Throat');

INSERT INTO Symptoms VALUES ('S06','Diarrhoea');

INSERT INTO Symptoms VALUES ('S07','Conjunctivitis');

INSERT INTO Symptoms VALUES ('S08','HeadAche');

INSERT INTO Symptoms VALUES ('S09','Loss of taste or Smell');

INSERT INTO Symptoms VALUES ('S10','Rash on Skin');

--Positive\_Symptoms

CREATE TABLE Positive\_Symptoms

(

PatientID Varchar(5) NOT NULL PRIMARY KEY

REFERENCES Positive(Patient\_ID),

Symptom\_ID Varchar(10) NOT NULL PRIMARY KEY

REFERENCES Potential\_Reasons(Potential\_Reasons\_ID)

);

--INSERT Positive\_Symptoms

INSERT INTO Positive\_Symptoms VALUES('P1','S01')

INSERT INTO Positive\_Symptoms VALUES('P1','S06')

INSERT INTO Positive\_Symptoms VALUES('P2','S02')

INSERT INTO Positive\_Symptoms VALUES('P3','S02')

INSERT INTO Positive\_Symptoms VALUES('P4','S04')

INSERT INTO Positive\_Symptoms VALUES('P4','S05')

INSERT INTO Positive\_Symptoms VALUES('P5','S01')

INSERT INTO Positive\_Symptoms VALUES('P6','S01')

INSERT INTO Positive\_Symptoms VALUES('P25','S10')

INSERT INTO Positive\_Symptoms VALUES('P26','S09')

INSERT INTO Positive\_Symptoms VALUES('P28','S04')

INSERT INTO Positive\_Symptoms VALUES('P28','S07')

INSERT INTO Positive\_Symptoms VALUES('P9','S08')

INSERT INTO Positive\_Symptoms VALUES('P10','S03')

INSERT INTO Positive\_Symptoms VALUES('P11','S02')

INSERT INTO Positive\_Symptoms VALUES('P12','S01')

INSERT INTO Positive\_Symptoms VALUES('P13','S01')

INSERT INTO Positive\_Symptoms VALUES('P14','S01')

INSERT INTO Positive\_Symptoms VALUES('P15','S03')

INSERT INTO Positive\_Symptoms VALUES('P16','S06')

INSERT INTO Positive\_Symptoms VALUES('P18','S07')

INSERT INTO Positive\_Symptoms VALUES('P19','S07')

INSERT INTO Positive\_Symptoms VALUES('P20','S08')

INSERT INTO Positive\_Symptoms VALUES('P22','S06')

INSERT INTO Positive\_Symptoms VALUES('P22','S05')

INSERT INTO Positive\_Symptoms VALUES('P23','S05')

INSERT INTO Positive\_Symptoms VALUES('P24','S01')

INSERT INTO Positive\_Symptoms VALUES('P30','S09')

INSERT INTO Positive\_Symptoms VALUES('P31','S04')

INSERT INTO Positive\_Symptoms VALUES('P32','S02')

INSERT INTO Positive\_Symptoms VALUES('P33','S03')

INSERT INTO Positive\_Symptoms VALUES('P34','S01')

INSERT INTO Positive\_Symptoms VALUES('P34','S02')

INSERT INTO Positive\_Symptoms VALUES('P34','S03')

INSERT INTO Positive\_Symptoms VALUES('P34','S04')

INSERT INTO Positive\_Symptoms VALUES('P35','S01')

INSERT INTO Positive\_Symptoms VALUES('P36','S09')

--Table-level CHECK Constraints based on a function

--Table level Constraint based on function for Positive and hospital. (Terminates when there is no bed in hospital)

create function checkbed(@HID varchar(5))

returns smallint

as

begin

declare @count smallint=0;

select @count=count(HospitalID)

from Hospital

where HospitalID=@HID

and vacantBeds=0;

return @count;

End;

Alter table Positive add constraint NoAdmit check (dbo.checkbed(HospitalID)=0);

--Table level Constraint based on function for OutPatient and PublicQuarantine. (Terminates when there is no vacant units in PublicQuarantine )

create function checkunits(@QID varchar(5))

returns smallint

as

begin

declare @count smallint=0;

select @count=count(QuarantineID)

from Public\_Quarantine

where QuarantineID=@QID

and VacantUnits=0;

return @count;

end;

Alter table Out\_Patient add constraint Novacancy check (dbo.checkunits(QuarantineID)=0);

--Computed Columns based on a function

**--Computed Columns based on a function to get the AGE from DOB in Citizen Entity**

Create Function AgeCitizen(@DOB Date)

Returns INT

As

Begin

Declare @Age INT

Set @Age = (datediff(hour,@DOB,getdate())/8766)

Return @Age;

END

ALTER TABLE Citizen ADD Age AS (dbo.AgeCitizen(DOB))

--Column Data Encryption

CREATE MASTER KEY

ENCRYPTION BY PASSWORD = 'DDMDTEAM@23';

CREATE CERTIFICATE Encrypted\_column

WITH SUBJECT = 'Encryption',

EXPIRY\_DATE = '2022-10-21';

CREATE SYMMETRIC KEY EncryptionKey

WITH ALGORITHM = AES\_128

ENCRYPTION BY CERTIFICATE Encrypted\_column;

OPEN SYMMETRIC KEY EncryptionKey

DECRYPTION BY CERTIFICATE Encrypted\_column;

ALTER TABLE Citizen

ADD GovernmentID VARBINARY(250);

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G01'))

WHERE CitizenID=18;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G02'))

WHERE CitizenID=19;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G03'))

WHERE CitizenID=20;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G04'))

WHERE CitizenID=21;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G05'))

WHERE CitizenID=22;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G06'))

WHERE CitizenID=23;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G07'))

WHERE CitizenID=24;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G08'))

WHERE CitizenID=25;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G09'))

WHERE CitizenID=26;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G10'))

WHERE CitizenID=27;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G11'))

WHERE CitizenID=28;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G12'))

WHERE CitizenID=29;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G13'))

WHERE CitizenID=30;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G14'))

WHERE CitizenID=31;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G15'))

WHERE CitizenID=32;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G16'))

WHERE CitizenID=33;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G17'))

WHERE CitizenID=34;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G18'))

WHERE CitizenID=35;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G19'))

WHERE CitizenID=36;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G20'))

WHERE CitizenID=37;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G21'))

WHERE CitizenID=38;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G22'))

WHERE CitizenID=39;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G23'))

WHERE CitizenID=40;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G24'))

WHERE CitizenID=41;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G25'))

WHERE CitizenID=42;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G26'))

WHERE CitizenID=43;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G27'))

WHERE CitizenID=44;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G28'))

WHERE CitizenID=45;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G29'))

WHERE CitizenID=46;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G30'))

WHERE CitizenID=47;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G31'))

WHERE CitizenID=48;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G32'))

WHERE CitizenID=49;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G33'))

WHERE CitizenID=50;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G34'))

WHERE CitizenID=51;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G35'))

WHERE CitizenID=52;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G36'))

WHERE CitizenID=53;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G37'))

WHERE CitizenID=54;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G38'))

WHERE CitizenID=55;

UPDATE Citizen

SET GovernmentID = EncryptByKey(Key\_GUID(N'EncryptionKey'),CONVERT(VARBINARY,'G39'))

WHERE CitizenID=56;

**--VIEW/TRIGGER’s 1**

--Multiple tables are present in a view VContactTrace. Thus, we created a trigger for the view

--VContactTrace and the view is inserting the data to Positive table

Create View VContactTrace

AS Select P.PatientID,P.TestedID,P.HospitalID,P.Severity\_Of\_Condition,P.Patient\_Status,P.Positive\_Date

from Positive P

join Tested T

on T.TestedID=P.TestedID

join Hospital H

on H.HospitalID=P.HospitalID;

CREATE Trigger ContactTrace

ON VCT

Instead of insert

as

begin

if(select count(\*) from inserted)>0

begin

insert into POSITIVE

select I.PatientID,I.HospitalID,I.TestedID,I.Severity\_Of\_Condition,

I.Patient\_Status,I.Positive\_Date

from inserted I

join Tested T

on T.TestedID=I.TestedID

join Hospital H

on H.HospitalID=I.HospitalID

if @@ROWCOUNT=0

RAISERROR('No matching Customers',10,1);

END

END

**--VIEW 2**

**--This report gives the highest number of Covid-19 cases present in a city which is --critical zone**

create view vCriticalZone

AS

select top 2 with ties P.HospitalID,A.AddressID,A.City,H.HospitalName

from POSITIVE P

join Hospital H

on P.HospitalID=H.HospitalID

join Address A

on A.AddressID=H.AddressID

group by P.HospitalID,A.AddressID

order by P.HospitalID desc;

-- vCriticalZoneImplementation

Select \* from vCriticalZone

**-- VIEW\_PATIENT 3**

/\*To get a report of Patient Data \*/

CREATE VIEW [dbo].[vw\_PatientData]

AS

select P.PatientId,C.FirstName + ' ' + C.LastName as 'Patient Name',

P.Severity\_Of\_Condition,P.Patient\_Status, [dbo].[AgeCitizen](C.DOB) AS AGE,

H.HospitalName

from Positive P with(nolock)

left outer join Hospital H with(nolock)

on P.HospitalID=H.HospitalID

left outer join Tested T with(nolock)

on P.TestedID=T.TestedID

inner join Citizen C with(nolock)

on C.CitizenID=T.CitizenID

GO

SELECT \* from vw\_PatientData ORDER BY LEFT(PatientID, PATINDEX('%[0-9]%', PatientID)-1),

CONVERT(INT, SUBSTRING(PatientID, PATINDEX('%[0-9]%', PatientID), LEN(PatientID)))

-- vw\_PatientData Implementation

/\* Order the alphanumeric column “PatientID”\*/

SELECT \* from vw\_PatientData

ORDER BY LEFT(PatientID, PATINDEX('%[0-9]%', PatientID)-1),

CONVERT(INT, SUBSTRING(PatientID, PATINDEX('%[0-9]%', PatientID), LEN(PatientID)))

**--TABLE\_CHECK\_CONSTRAINT BASED ON TRIGGER**

**/\***trg\_InsteadOf\_Positive prevents to insert data into “Positive” entity if there are no beds available in the hospital

If beds are available and data is inserted into “Positive” entity - then - number of hospital beds are also updated\*/

ALTER TRIGGER trg\_InsteadOf\_Positive

ON Positive

INSTEAD OF INSERT

AS

BEGIN

SET NOCOUNT ON;

Declare @HospitalID varchar(10)=''

Declare @VacantsBed int=0

Select @HospitalID = isnull(H.HospitalID,''),@VacantsBed=isnull(H.VacantBeds,0)

from Hospital H

join inserted I

on I.HospitalID = H.HospitalID

if(@HospitalID='')

Begin

Raiserror('Invalid Hospital Name. Statement Terminated OK', 16, 1)

return

End

if(@VacantsBed=0)

Begin

Raiserror('There is no bed in the hospital. Statement Terminated OK', 16, 1)

return

End

Insert into Positive(PatientID,TestedID,

HospitalID,

Severity\_Of\_Condition,

Patient\_Status,

Positive\_Date)

Select PatientID,TestedID,

HospitalID,

Severity\_Of\_Condition,

Patient\_Status,

Positive\_Date

from inserted

if(@@ERROR=0) -- No Error

Begin

update Hospital set VacantBeds=VacantBeds-1 where @HospitalID=HospitalID

End

END

-- trg\_InsteadOf\_Positive Implementation

insert into Positive(PatientID,TestedID,

HospitalID,

Severity\_Of\_Condition,

Patient\_Status,

Positive\_Date)

values('P28','T40','H1','Mild','Recovered',GETDATE())