University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Information Storage & Management I
Lecturer: Dr. Alejandro Arbelaez

Submission:

This assignment is due on Dec/11/2020 at 11PM. You should submit a file with your solution ([CS2208-project.sql] electronically via Canvas.

Please note that this assignment will account for 10 Marks of your module grade.

Declaration:

By submitting this assignment. I agree to the following:

"I have read and understand the UCC academic policy on plagiarism and I agree to the requirements set out thereby in relation to plagiarism and referencing. I confirm that I have referenced and acknowledged properly all sources used in preparation of this assignment.

I declare that this assignment is entirely my own work based on my personal study. I further declare that I have not engaged the services of another to either assist me in, or complete this assignment"

Consider the following hypothetical contact tracing relational database.

Pub(PLN, PubName, PCounty)
NeighbourCounty(County1, County2)
Person(PPSN, PName, PCounty, Age, DailyPubLimit)
Visit(PLN, PPSN, StartDateOfVisit, EndDateOfVisit)
Covid_Diagnosis(PPSN, DiagnosisDate, IsolationEndDate)

Suppose all Pubs in Ireland have a unique Pub licence number (PLN) and each person is identified by a unique PPS number (PPSN). Given that this is the year 2020, all Pubs must implement contact tracing with a record of all Pub visits and COVID status for all visitors to a Pub. For example, every time a person (represented by a PPSN) goes to a pub (represented by PLN), the information is recorded in the DB. The number of times a person visits a particular Pub can be obtained by examining the Visit relation.

PLN	PubName	PCounty
L1234	Murphy's	Cork
L2345	Joe's	Limerick
L3456	BatBar	Kerry

County1	County2
Cork	Limerick
Limerick	Cork
Cork	Kerry
Kerry	Cork

PPSN	PName	PCounty	Age	DailyPubLimit
1	Liza	Cork	22	5
2	Alex	Limerick	19	7
3	Tom	Kerry	23	10
4	Peter	Cork	39	8

PLN	PPSN	StartDateOfVisit	EndDateOfVisit
L1234	1	2020/10/02 10AM	2020/10/02 11AM
L1234	1	2020/08/12 11AM	2020/08/12 11:35AM
L2345	3	2020/03/12 11AM	2020/03/12 11:50AM

PPSN	DiagnosisDate	IsolationEndDate
2	2020/11/02	2020/21/02

Requirements

Write integrity constraints (domain, primary key(s), foreign key(s), or CHECK constraints or assertions), views, and triggers to ensure each of the following requirements (considered independently).

1. **[1 Mark]** Write SQL statements to create the tables (including primary keys and foreign keys).
2. **[1 Mark]** Populate the DB with the following information.
3. **[2 Marks]** An infected person cannot visit any Pub during the isolation period, i.e., from the diagnosis date and before the end of isolation.
4. **[2 Marks]** In order to reduce the spread of the virus in this hypothetical system a person can only visit Pubs in a restricted area, for the context of this project that would be in the same county of residence or a neighbour county.

5. **[2 Marks]** In order to further reduce the spread of the virus, in this hypothetical system, a person is only allowed to visit a certain number of Pubs in a 24 hour period, i.e., (DailyPubLimit) and of course the same person cannot visit more than 1 Pub at the same time.
6. **[2 Marks]** Create a view (named COVID_NUMBERS) to retrieve the number of COVID cases for each county in the database. This view will output two columns named county and cases.