



	Hospital	
PK	HOSPITAL_NAME	
	HOSPITAL_TYPE	
	HQ_ADDRESS	
	HQ_CITY	
	HQ_STATE	
	HQ_ZIP_CODE	
	COUNTY_NAME	
	NUM_LICENSED_BEDS	
	NUM_STAFFED_BEDS	
	NUM_ICU_BEDS	
	ADULT_ICU_BEDS	
	PEDI_ICU_BEDS	
	BED_UTILIZATION	
	AVG_VENTILATOR_USAGE	
	Potential_Increase_In_Bed_Capac	
	AVG_VENTILATOR_USAGE	
	latitude	
	longtitude	
	STATE_NAME	

Locates in

Relational Schema:

Review the content of ER & UML taught in class. For this stage, discuss with your teammates and create a conceptual design (Entity-Relationship Diagram *or* UML Diagram) of the project database.

Your relational schema should be formatted as follows:

R(A:Domain [PK], B:Domain [FK to table.column], C:Domain,...)

PK: Indicates that the column is a primary key for the table

FK: Indicates that the column is a foreign key referencing the primary key of table.column.

Domain: INT, Decimal, VARCHAR(X),....

R(A, B, C)

```
Website_Login_Credentials(
username:VARCHAR(15) [PK],
email:VARCHAR(100),
age:INT,
phoneNumber:REAL)

COVID-19_Testing(
covidTestingIndex:VARCHAR(40) [PK],
date:VARCHAR(8),
state:VARCHAR(14) [FK to States.State_Name],
fips:INT,
cases:INT,
deaths:INT)
```

```
COVID-19 paper statistics(
month: INT [PK],
number papers:INT,
licensed_papers:INT,
number_arxiv:INT,
number authors:INT,
hottest_topics:VARCHAR(20),
frequent topics: VARCHAR(20),
contributors: INT,
journals:INT)
Journals (name: VARCHAR (20) [PK],
number papers: INT,
licensed papers: INT,
number arxiv: INT,
number authors:INT,
contributors: INT,
clicks:INT)
COVID-19 Papers (
cord uid: VARCHAR(8) [PK],
source: VARCHAR (20),
title: VARCHAR (50),
doi: VARCHAR (50),
pubmed id:INT,
license: VARCHAR (10),
abstract: VARCHAR (1000),
publish time:VARCHAR(10),
mag id: INT,
arxiv id: INT,
url: VARCHAR (512),
clicks: INT,
number search:INT)
```

```
authors (
name: VARCHAR(20) [PK],
number papers: INT,
licensed papers: INT,
number arxiv: INT,
contribution: INT,
clicks:INT)
Hospital (
HOSPITAL NAME: VARCHAR (50) [PK],
HOSPITAL TYPE: VARCHAR (20),
HQ ADDRESS: VARCHAR (20),
HQ CITY: VARCHAR (20),
HQ STATE: VARCHAR (2),
HQ ZIP CODE: INT,
COUNTY NAME: VARCHAR (20),
NUM LICENSED BEDS: INT,
NUM STAFFED BEDS: INT,
NUM ICU BEDS: INT,
ADULT ICU BEDS: INT,
PEDI_ICE_BEDS:REAL,
BED UTILIZATION: REAL,
AVG_VENTILATOR_USAGE: REAL,
Potential Increase In Bed Capac: INT,
AVG VENTILATOR USAGE: REAL,
Latitude: REAL,
longitude: REAL,
STATE NAME: VARCHAR(20) [FK to States.State Name])
Vaccination (
date:VARCHAR(8) [PK],
location: VARCHAR (20) [PK],
total vaccinations: INT,
total distributed: INT,
people vaccinated: INT,
people fully vaccinated per hundred: REAL,
total vaccinations per hundred: REAL,
people_fully_vaccinated:int,
people vaccinated per hundred: REAL,
```

```
distributed per hundred: REAL,
share doses used:REAL
Website_Login_Credentials(
username: VARCHAR (50),
email: VARCHAR (50),
age:INT,
phoneNumber: INT
States (
State Name: VARCHAR (14) [PK],
State Coordinate: REAL,
State Population: INT,
State Birth Rate: REAL,
State FIPS: INT
Vaccination (
Date: VARCHAR(8) [PK],
location:VARCHAR(20) [PK],
total vaccinations: INT,
total distributed: INT,
people vaccinated: INT,
people fully vaccinated per hundred: REAL,
total vaccinations per hundred: REAL,
people fully vaccinated:int,
people vaccinated per hundred: REAL,
distributed per hundred: REAL,
share doses used:REAL
```

```
JournalsContainsPapers(
journal:VARCHAR(20) [PK], [FK to Journals.name],
paperCordUid: VARCHAR(8) [PK], [FK to COVID-19_Papers.cord_uid]
)

The relationship between the Journals releasing the papers and the information on the papers being released.

AuthorsWritePapers(
author:VARCHAR(50) [PK], [FK to authors.name],
paperCordUid: VARCHAR(8) [PK], [FK to COVID-19_Papers.cord_uid]
)

The relationship between the authors who are writing the papers and the authors of the papers that are being released.
```

Cardinality for both relationship tables: 2

ASSUMPTIONS

- For COVID-19_paper_statistics to Journals or authors or COVID-19 papers, we
 assume that there can be no Journals or authors or COVID-19 papers at all in
 our system, hence the zero to many relationships.
- We assume that each hospital must be located in one state and one state only,
 and we assume that one state can have no hospital registered in our system,
 hence the one mandatory and zero to many relationships.
- We assume for each COVID-19 Testing, it must be counted in one state and each state can have NULL or many testing information registered in our system.
- We assume the vaccination must be counted per state, and each state can be NULL or many vaccination information, hence the one mandatory and zero to many relationships.