

CS39202

Database Management System Laboratory

Assignment - 1: Database Design

COVID-19 Tracking Information System

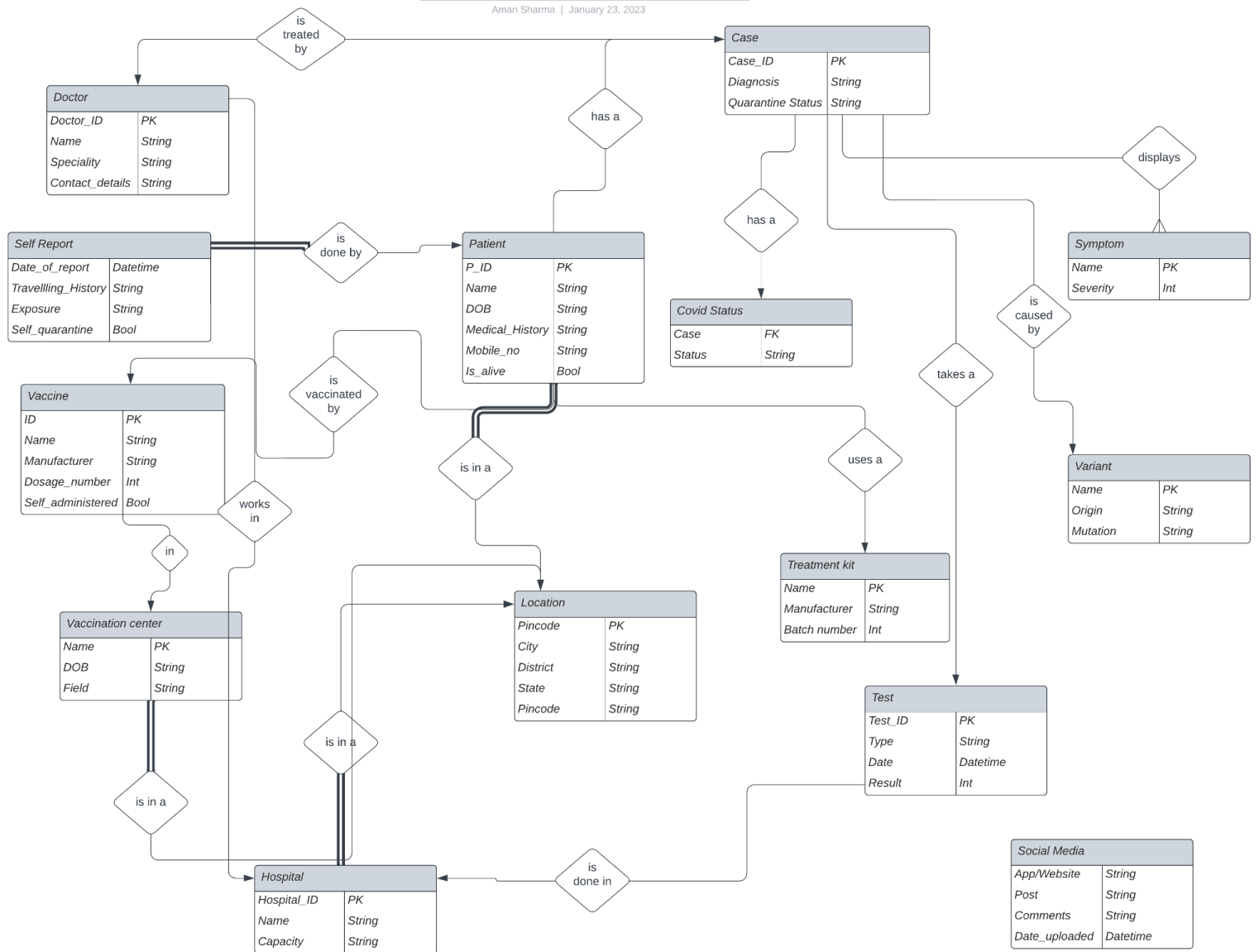
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## Covid-19 Tracking Information system ER diagram

Aman Sharma | January 23, 2023



The general relationships between different entities can be observed from the above ER diagram. However Social Media in this design is considered a separate entity from which information can then be further derived and stored into the database, or used independently. For example, specific tags like #antivaxx can be searched for through this database.

## Entity Table Schemas(Including One-to-Many)

### Doctor:

doctor\_id (primary key)

name

speciality

contact\_details

**Patient:**

patient\_id (primary key)

name

dob

medical history

contact\_details

is alive

location (foreign key referencing pincode in Location table)

case (foreign key referencing case\_ID in Case table)

**Hospital:**

hospital\_id (primary key)

name

location (foreign key referencing pincode in Location table)

number\_of\_beds

**Test:**

test\_id (primary key)

patient\_id (foreign key referencing patient\_id in Patient table)

doctor\_id (foreign key referencing doctor\_id in Doctor table)

hospital\_id (foreign key referencing hospital\_id in Hospital table)

test\_date

test\_result

**Case:**

case\_id (primary key)

patient\_id (foreign key referencing patient\_id in Patient table)

date\_of\_onset

case\_status

**Location:**

location\_id (primary key)

name

address

**Symptom:**

symptom\_id (primary key)

name

description

**Variant:**

variant\_id (primary key)

name

genetic\_sequence

**Vaccine:**

vaccine\_id (primary key)  
name  
manufacturer

**Treatment kit:**

treatment\_id (primary key)  
name  
contents

**Covid Status:**

status\_id (primary key)  
patient\_id (foreign key referencing patient\_id in Patient table)  
status

**Self Report:**

self\_report\_id (primary key)  
patient\_id (foreign key referencing patient\_id in Patient table)  
symptoms  
exposure

**Vaccination center:**

vaccination\_center\_id (primary key)  
name  
location (foreign key referencing pincode in Location table)  
available\_vaccines

**Social Media:**

app  
post  
comments  
Date\_uploaded

## How can we use this database design to address the problem statement?

Reporting the prevalence and progress of the pandemic: By tracking the number of confirmed and suspected cases, as well as the number of patients who have recovered or passed away, the system can provide a clear picture of the overall

impact of the pandemic at a given time. Additionally, by tracking patient information such as age, gender, and underlying health conditions, the system can provide insight into which patient profiles are most affected by the virus. By also linking the patient to the location, we can track the pandemic progress in different geographical areas.

Tracking symptoms and variants that are currently common: By tracking the symptoms reported by patients, the system can provide insight into which symptoms are most common among those diagnosed with Covid-19. Additionally, by tracking the variants of the virus that are present in a given area, the system can be used to identify which variants are most prevalent. This information can be used to inform public health decisions and guide the development of treatments and vaccines.

Other functionalities: The system can also be used to track the distribution of vaccines, monitor the effectiveness of different treatments, and gather data on the economic and social impacts of the pandemic. Additionally, the system can be integrated with social media platforms to monitor the spread of misinformation and ensure that individuals have access to accurate information about the virus.