Covid Data Management System for The University

Database Management and Database Design
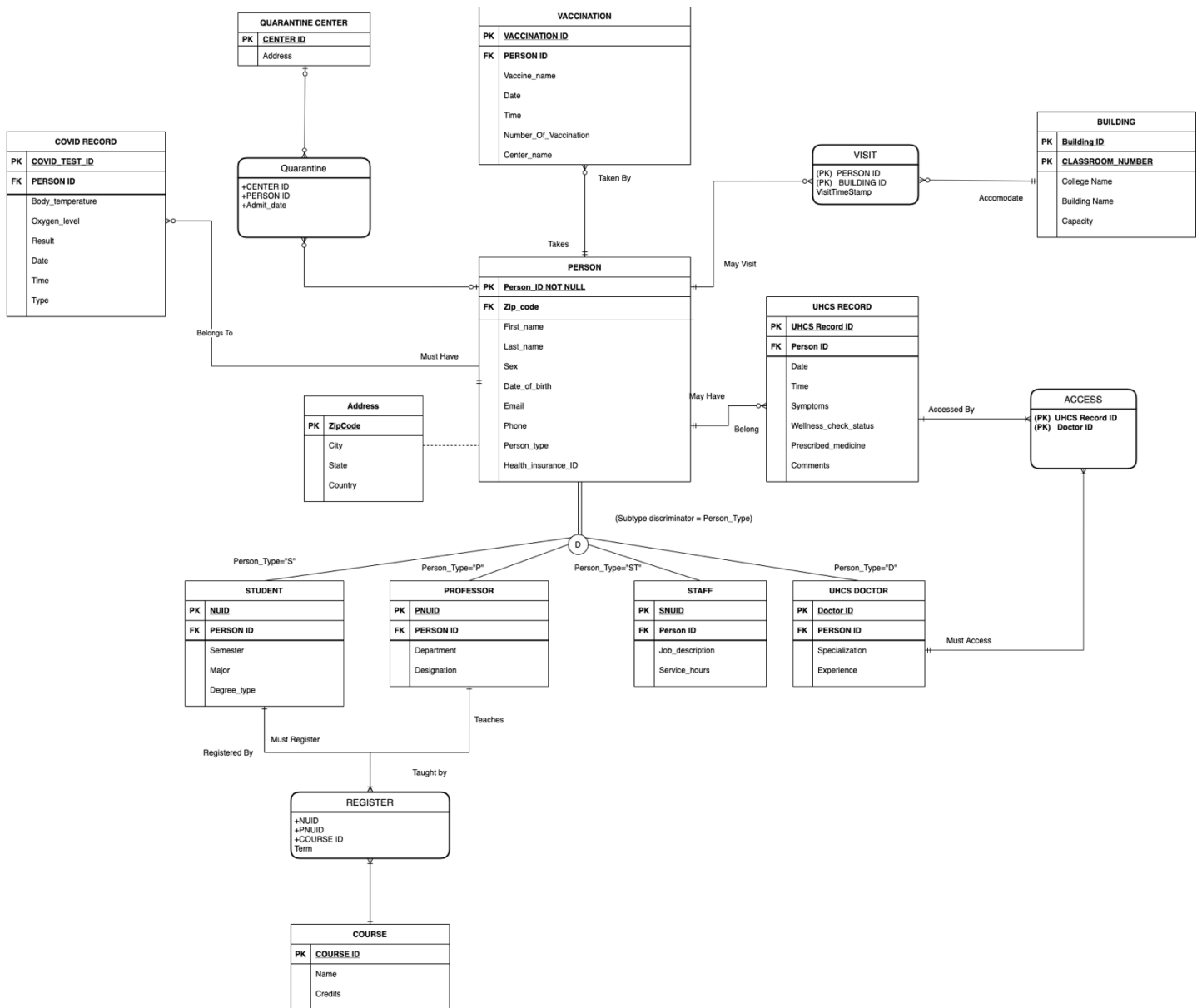
Project by

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The above Entity Relationship Diagram has the following Entities:

SUPERTYPE:

- **PERSON** [**Person ID**, FirstName, Last Name, Sex, Date of Birth, Email, Phone Number, Address, Person Type, Race, Health Insurance ID]

SUBTYPE:

- **STUDENT** [**NUID,** Person ID(FK), Course ID(FK), Semester, Major, Degree Type]
- **PROFESSOR** [**PNUID**, Course ID(FK), Person ID(FK), Department, Designation]
- **STAFF** [**SNUID**, Person ID(FK), Job Description, Service Hours]
- **UHCS DOCTOR** [**Doctor ID**, Person ID(FK), Specialization, Experience]
- **COURSE** [**Course ID**, Name, Enrollment Strength, Credits]
- **BUILDING** [**Building ID**, **Classroom Number**, College Name, Building Name, Capacity]

ASSOCIATIVE ENTITY:

- **VISIT** [**Person ID**, **Building ID**] (Associative entity)
- **ACCESS** [**UHCS Record ID**, **Doctor ID**] (Associative entity)
- **COURSE** [**Course ID**, NUID(FK), PNUID (FK), Name, Enrollment Strength, Credits] (Associative entity)

COVID RELATED ENTITIES:

- **VACCINATION** [**Vaccination ID**, Person ID(FK), Vaccination Name, Serial Number, Manufacturer, Date, Time, Number of Vaccines, Center Number]
- **COVID RECORD** [**Covid Test ID**, Person ID(FK), Center ID(FK), Body Temperature, Oxygen Level, Test Results, Test Date, Test Time, Test Type]
- **QUARANTINE CENTER** [**Center ID**, Covid Test ID(FK), Address, Bed Availability, Rating, Cost per Day]
- **UHCS RECORD** [**UHCS Record ID**, Person ID(FK), Date, Time, Symptoms, Wellness Check Status, Symptoms Duration, Prescribed Medicine, Comments]

RELATIONS & BUSINESS RULES:

- PERSON may take 0 or more vaccinations; VACCINATION must be taken by one PERSON
- PERSON may have 0 or many COVID RECORD; COVID RECORD must belong to one PERSON only
- QUARANTINE CENTRE may access 0 or more COVID RECORDS; COVID RECORDS may be accessed by 0 or more QUARANTINECENTERS
- PERSON may have 0 or many UHCS RECORDS; UHCS RECORD must belong to one PERSON only
- UHCS RECORD must be accessed by 1 or many UHCS DOCTORS, UHCS DOCTOR must access 1 or more UHCS RECORDS
- PERSON may visit 0 or more BUILDINGS; BUILDINGS may accommodate 0 or many PERSONS
- PERSON may be a STUDENT, PROFESSOR, STAFF, UHCS DOCTOR; STUDENT, PROFESSOR, STAFF, UHCS DOCTOR must be a PERSON
- STUDENT must register for 1 or more COURSES; COURSE must be registered by a STUDENT
- PROFESSOR must teach 1 or more COURSES; COURSE is taught by 1 or more PROFESSORS

BUSINESS PROBLEM & SOLUTION:

The Business problem statement is to implement a database management system to track, monitor, and control the spread of the disease at the university and ensure smooth functioning and a safe working environment. By leveraging Northeastern University ID (NUID) and regular wellness checks, this project is intended to unlock the potential of the university campus by ensuring that Coronavirus spread is controlled. We aim to provide university employees with an easy-to-use database management platform for collecting their Covid related information and provide them with an easy link to enter their information. The database will provide a straightforward method for identifying the covid situation around campus. This database management system will provide information concerning quarantine stations in the area to all the people dealing with covid problems.