

CaseX Users Database & Victim, Address, Suspect Entities

Preliminary Database Design Document

1.1 Project Description

This preliminary database design document provides the details of the development of the User Database and the Victim, Address, and Suspect entities of the Case Database for CaseX. CaseX is an open source web application and database optimized for the management of physical data. This system is uniquely customized as a data management solution for the Los Angeles Police Department Homicide Library Unit, however it can be used for any enterprise seeking physical data management.

The CaseX system architecture is comprised of a web browser-based user interface (front-end), a server (backend), and MongoDB as the database. The frontend consists of various webpages which allows users to accomplish the three main functions of CaseX. The server backend and database will be designed to allow for concurrent access, efficient query, and data validation.

The full database for CaseX consists of the User Database and the Case Database. The Case entity of the Case Database will be implemented by Eileen Choe and Allen Vartanian, and is outlined in their preliminary database design document. To evenly distribute workload, the User Database as well as the Victim, Address, and Suspect entities of the Case Database will be outlined in this database design document.

1.2 Data Description

The data that will be stored in the User Database will be the data that is related to each user: the user's ID number, the full name of the user, the level of access that user is permitted, the user's employee ID number, the dates that the user registered, and the dates that the user last read or modified the data.

We will also be developing the Victim, Suspect, and Address entities of the Case Database. The Victim entity will be all the data that is related to each victim: the victims' names, the sex and ages of the victims, the description of the victims, and the victims' supervised release statuses. The Suspect entity will include all the data that is related to each suspect: the suspects' names, the sex and ages of the suspects, the description of the suspects, and the suspects' supervised release statuses. The Address entity comprises of the data in which the incident occurred: the street number, the street name, the city, and the zip code.

1.3 Query Examples

Possible queries with the User Database could include:

- Find the user IDs of all users whose first name is "Bob".
- Find all users who last input data on February 10, 2016.
- Find all users with administrator privileges who were registered before 2017.
- Find the user with a known user ID.
- Find the first and last names of all users who have read-only privileges and registered after 2015.

Possible queries with Victim entity could include:

- Find the first and last name of all victims whose age is 30.
- Find all victims whose gender is female.
- Find the age of all victims whose name is "Barbara".
- Find a victim with a known victim ID.
- Find the first and last names of all victims whose supervised release status was probation.

Possible queries with Address entity could include:

- Find all the cases that happened on "Foothill Boulevard".
- Find all the cases that occurred in 90045.
- Find all the cases that occurred in "Los Angeles".
- Find the incident that occurred on "1234 Hope Ave."
- Find an address with a known address ID.

Possible queries with Suspect entity could include:

- Find the first and last name of all suspects whose age is 30.
- Find all suspects whose gender is male.
- Find a suspect with a known suspect ID.
- Find the first and last names of all suspects whose supervised release status was probation.
- Find the first and last names of all suspects who were juveniles tried as an adult.

1.4 Database Schema

User Database

Attribute name	Data type	Can be NULL	Can be multivalued
User ID	Integer	No	No
First name	String	No	No
Middle name	String	Yes	No
Last name	String	No	No
Permission level	Enumerator (read-only, input-read, administrator)	No	No
Employee ID	Integer	Yes	No
Last time read	Date	No	No
Last time modified	Date	No	No
Registration date	Date	No	No

Victim Entity

Attribute name	Data type	Can be NULL	Can be multivalued
Victim Name	String	No	No
Victim Sex	Enumerator (Male, Female, Transgender, Other, Unknown)	No	No
Victim Age	Integer	No	No
Victim Description	String	No	No
Victim supervised release status	Enumerator (parole, probation, juvenile probation, outstanding unrelated warrant)	No	Yes

Suspect Entity _____

Attribute name	Data type	Can be NULL	Can be multivalued
Suspect Name	String	No	No
Suspect Age	Integer	No	No
Supervised release status	Enumerator (parole, probation, juvenile probation, outstanding unrelated warrant)	No	Yes
Juvenile tried as an adult	Boolean	Yes	No

Address Entity _____

Attribute name	Data type	Can be NULL	Can be multivalued
Street Number	Integer	No	No
Street Name	String	No	No
City	String	No	No
Zip Code	Integer	No	No

1.5 Entity-Relationship Diagrams

