

Relational Schema:

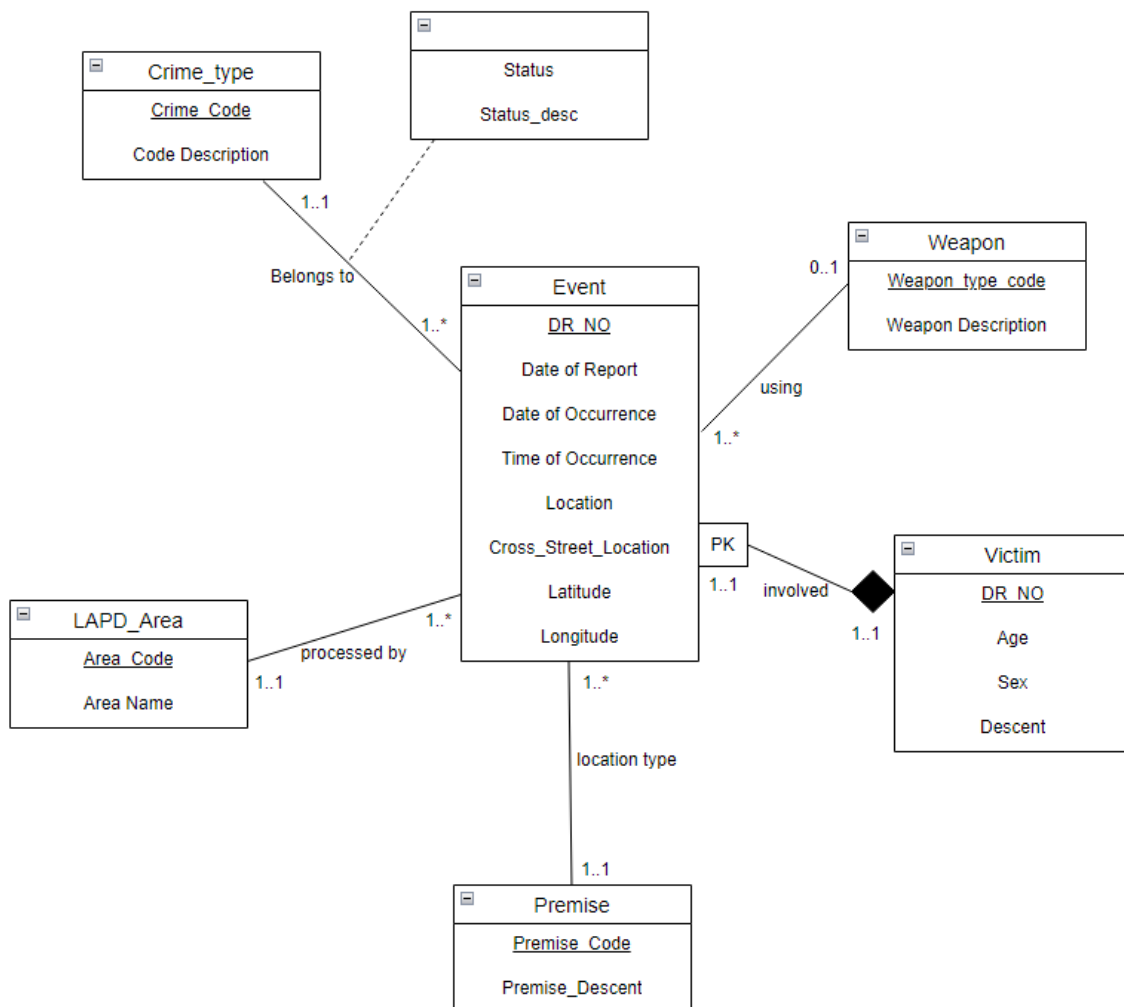
Entities:

1. Event(DR_NO: INT [PK], Date_of_Report: VARCHAR(30), Date_of_Occurrence: VARCHAR(30), Time_of_Occurrence: INT, Location: VARCHAR(30), Cross_Street_Location: VARCHAR(30), Latitude: REAL, Longitude: REAL, Crime_Code: INT [FK to Crime_Type.Crime_Code], Weapon_Type_Code: INT [FK to Weapon.Weapon_Type_Code], Area: INT [FK to LAPD_Area.Area], Premise_Code: INT [FK to Premise.Premise_Code])
2. Victim(DR_NO: INT [FK to Event.DR_NO][PK], Victim_Age: INT, Victim_Sex: VARCHAR(30), Victim_Descent: VARCHAR(30))
3. Crime_Type(Crime_Code: INT [PK], Crime_Code_Description: VARCHAR(30))
4. Weapon(Weapon_Type_Code: INT [PK], Weapon_Description: VARCHAR(30))
5. LAPD_Area(Area: INT [PK], Area_Name: VARCHAR(30))
6. Premise(Premise_Code: INT [PK], Premise_Descent (VARCHAR(30))

Relationship tables:

1. Crime_status(Crime_Code: INT [FK to Crime_Type.Crime_Code], DR_NO: INT [FK to Event.DR_NO].[PK], Status: VARCHAR(30), Status_Desc: VARCHAR(30))

UML graph:



Description:

The table given by our data source is a bit hard for database design because all other entities are closely related to the event itself. Thus this forms the shape that all other entities are related to the event, but not all of them depend on the event. And we notice that because the data source lists all information using the DR_NO as a primary key, it is obvious that for necessary information for a crime report, it will have at least one of those for every crime event. The following assumptions are majorly decided by using common sense.

Based on our assumption, each crime type will occur in at least one event and can occur in up to many different events, but every event will have exactly one crime type. We put the status and status_desc of the crime as attributes in this relationship's table because when we are doing analysis, we always want to know the crime's type and the crime's status at the same time.

One weapon type can occur in at least one and up to many different events, but one event can have 0-1 weapon type.

One LAPD_Area can have at least one and up to many events occurring in it, but every event will only occur in exactly one LAPD_Area.

One Premise type can occur in at least one and up to many different events, but every event can only have exactly one Premise type.

Each event has exactly one victim, and since the victim would not exist without the event occurring, we decided to make it a weak entity. Each event corresponds to exactly one victim and each victim corresponds to exactly one event. This is because we are not given the exact identities of the victims, only their age, sex, and descent, so we only know that a victim exists in relation to a specific crime.