

Name: Mayank Ravariya

UID: 2022600049

Branch: AIML

All India Criminal Record

Scenario:

The Indian Crime Investigation Department wants to maintain a record of all criminals, both National and International. This should have all the details of the criminals which will be useful for identifying suspects.

Entities:

- 1) Criminal (strong entity)
- 2) Physical Appearance (weak entity)
- 3) Crime (weak entity)
- 4) Current Crime Record (strong entity)
- 5) Previous Crime Record (strong entity)
- 6) Family (weak entity)

Attributes:

- 1) Criminal (criminal_id, name, birth_place, dob, age, gender, blood_group, nationality, threat_level, previous_occupation, current_occupation)
Simple Attribute: **name, dob, birth_place, blood_group**
Composite Attribute: nationality (national_id, passport_id), previous_occupation (name, income), current_occupation(name, income)
Single Valued: **criminal_id**
Derived: **age**
- 2) Physical Appearances (height, weight, eye_color, hair, scars_and_marks)
Simple Attribute: **height, weight, eye_color, hair**
Multivalued: scars_and_marks
- 3) Family (parents, consort, siblings, children)
Composite Attribute: parents (mother (name, occupation), father(name, occupation)), consort (name, occupation), siblings (name), children (name)
- 4) Current Crime (crime_id, type_of_crime, victims, crime_scene, date, arrest_details, sentence)
Simple Attributes: **type_of_crime**
Composite Attribute: crime_scene (location, date), arrest_details (location, date, arrestor), sentence (type, sentence_date, period, release_date, fine)
Single valued: **crime_id**
Multivalued: victims
- 5) Previous Crime (crime_id, type_of_crime, victims, crime_scene, date, arrest_details, sentence)

Simple Attributes: **type_of_crime**

Composite Attribute: crime_scene (location, date), arrest_details (location, date, arrestor), sentence (type, sentence_date, period, release_date, fine)

Single valued: **crime_id**

Multivalued: victims

6) Crime (arms_possession, jail)

Simple Attributes: **arms_possession**

Composite Attribute: jail (prison (location), police_station (fir_id))

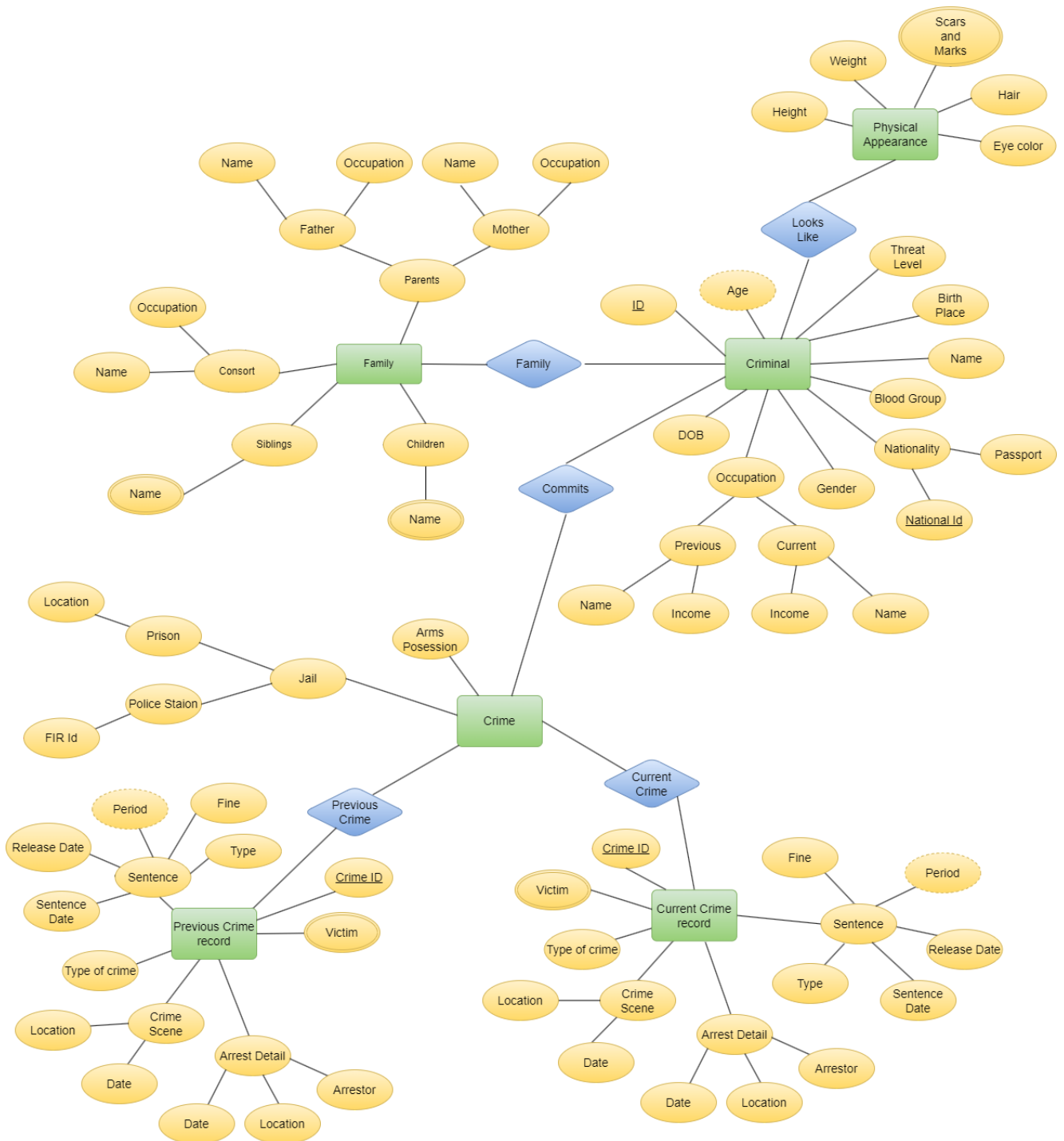
Relationships:

- 1) Criminal has an Appearance.
- 2) Criminal has Family.
- 3) Family Record includes Parents, Children, Consort, Siblings.
- 4) Criminal commits Crime which has a Crime Record.
- 5) Crime Record includes Current Crime and Previous Crime Records.
- 6) Current Crime has Victims, Crime Location, Arrest Details, Sentence, and Fine.
- 7) Previous Crime Record has details similar to Current Crime.

Cardinalities:

- 1) **One** Criminal has **one** Physical Appearance.
- 2) **One** Criminal has **one** Family Record.
- 3) **One** Criminal has **one** Crime Record.
- 4) **One** Crime Record can have **multiple** Current Crimes and Previous Crimes.
- 5) **One** Crime can have **multiple** Victims, **multiple** Crime Location, **multiple** Arrest Details, **one** Sentence, and **one** Fine.
- 6) **One** Family Record can have **multiple** Parents, Consort, Siblings, and Children.
- 7) **One** Criminal can have **one** Police Station or **one** Prison.

ER diagram:



Relational DB Mapping:

- 1) Criminal (criminal_id, name, birth_place, dob, gender, blood_group, national_id, passport_id, threat_level, previous_occupation_name, previous_occupation_income, current_occupation_name, current_occupation_income)
- 2) Physical Appearances (criminal_id, height, weight, eye_color, hair, scars_and_marks)
- 3) Scars and Marks Relation (criminal_id, scars_and_marks)
- 4) Family (criminal_id, mother_name, mother_occupation, father_name, father_occupation, consort_name, consort_occupation, siblings_name, children_name)
- 5) Siblings Relation (criminal_id, siblings_name)
- 6) Children Relation (criminal_id, children_name)
- 7) Current Crime (crime_id, type_of_crime, date, crime_scene_location, crime_scene_date, arrest_location, arrest_date, arrestor, sentence_type, sentence_date, sentence_period, release_date, fine)
- 8) Current Victims (crime_id, victims)
- 9) Previous Crime (crime_id, type_of_crime, date, crime_scene_location, crime_scene_date, arrest_location, arrest_date, arrestor, sentence_type, sentence_date, sentence_period, release_date, fine)
- 10) Previous Victims(crime_id, victims)
- 11) Crime (criminal_id, arms_possession, prison_location, fir_id)