L.A. City Crime Analysis
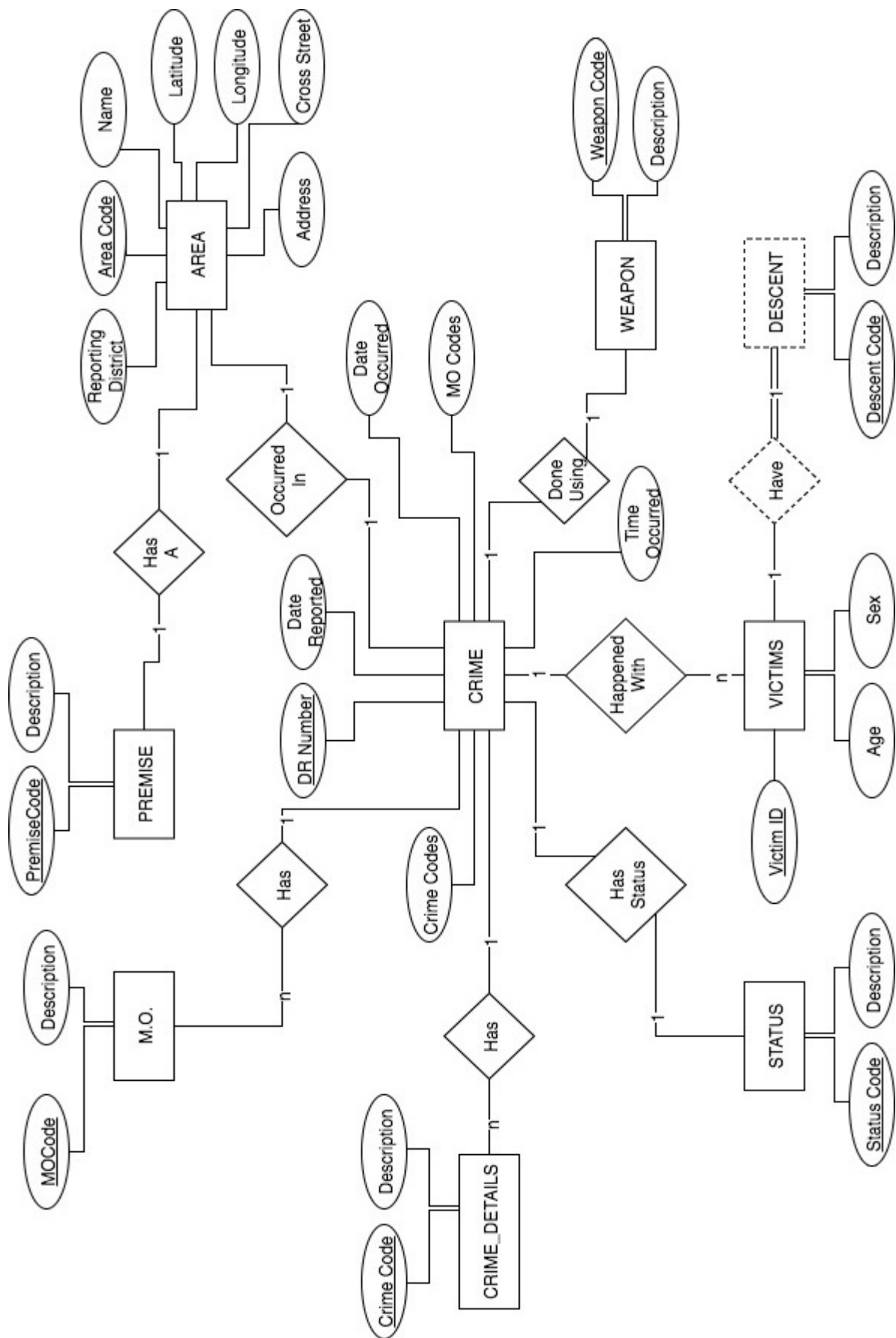
Database Schema Construction
Phase Three

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E-R Diagram

1. Crime Table:

Relational Schema:
CRIME(
      DRNumber : integer,
      DateReported : date,
      DateOccured : date,
      TimeOccured : integer,
      CrimeCodes : string,
      StatusCode : integer,
      VictimID : integer,
      WeaponCode : integer,
      AreaCode : integer,
      MOcodes : string
)

Query:
```
create table CRIME(
        dr_number NUMBER(9) PRIMARY KEY,
        date_reported date NOT NULL,
        date_occured date NOT NULL,
        time_occured number(4) NOT NULL,
        crime_codes varchar2(16) NOT NULL,
        status_code varchar2(2) NOT NULL,
        victim_id number(7) NOT NULL,
        weapon_code number(3),
        area_code number(2) NOT NULL,
        mo_codes varchar2(50),
        FOREIGN KEY (status_code) REFERENCES REPORT_STATUS(status_code),
        FOREIGN KEY (victim_id) REFERENCES VICTIM_DETAILS(victim_id),
     FOREIGN KEY (weapon_code) REFERENCES WEAPON_DETAILS(weapon_code),
        FOREIGN KEY (area_code) REFERENCES AREA_DETAILS(area_code)
);
```

Description:
This table stores the information about the crimes that have occured in LA city from 2010 to present. Each row is a reported crime incident.

```
SQL> create table CRIME(
  2              dr_number NUMBER(9) PRIMARY KEY,
        date_reported date NOT NULL,
        date_occured date NOT NULL,
        time_occured number(4) NOT NULL,
            crime_codes varchar2(16) NOT NULL,
            status_code varchar2(2) NOT NULL,
            victim_id number(7) NOT NULL,
            weapon_code number(3),
  3    4    5    6    7    8    9    10                    area_code number(2) NOT NULL,
            mo_codes varchar2(50),
            FOREIGN KEY (status_code) REFERENCES REPORT_STATUS(status_code),
            FOREIGN KEY (victim_id) REFERENCES VICTIM_DETAILS(victim_id),
         FOREIGN KEY (weapon_code) REFERENCES WEAPON_DETAILS(weapon_code),
            FOREIGN KEY (area_code) REFERENCES AREA_DETAILS(area_code)
);
 11   12   13   14   15   16
Table created.
```

```
SQL> desc crime;
 Name                                       Null?    Type
 ------------------------------------------ -------- ----------------------------
 DR_NUMBER                                  NOT NULL NUMBER(9)
 DATE_REPORTED                              NOT NULL DATE
 DATE_OCCURED                               NOT NULL DATE
 TIME_OCCURED                               NOT NULL NUMBER(4)
 CRIME_CODES                                NOT NULL VARCHAR2(16)
 STATUS_CODE                                NOT NULL VARCHAR2(2)
 VICTIM_ID                                  NOT NULL NUMBER(7)
 WEAPON_CODE                                         NUMBER(3)
 AREA_CODE                                  NOT NULL NUMBER(2)
 MO_CODES                                            VARCHAR2(50)
```

2. Crime Details Table:

<table>
<tr><td>

Relational Schema:
CRIME_DETAILS(
       CrimeCode : integer
       Description : string
)

</td></tr>
<tr><td>

Query:
create table CRIME_DETAILS(
       crime_code NUMBER(3) PRIMARY KEY,
       description varchar2(120) NOT NULL
);

</td></tr>
<tr><td>

Description:
This table stores information about different types of crimes possible and detailed descriptions of these crimes.

</td></tr>
</table>

```
SQL> create table CRIME_DETAILS(
        crime_code NUMBER(3) PRIMARY KEY,
        description varchar2(120) NOT NULL
);
  2    3    4
Table created.
```

```
SQL> desc crime_details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------
 CRIME_CODE                                NOT NULL NUMBER(3)
 DESCRIPTION                               NOT NULL VARCHAR2(120)
```

3. Report Status Table:

Relational Schema:
REPORT_STATUS(
       StatusCode : string
       Description : string
)

Query:
create table REPORT_STATUS(
       status_code varchar2(2) PRIMARY KEY,
       description varchar2(120) NOT NULL
);

Description: This table stores information about the different states of crime investigation.

```
SQL> create table REPORT_STATUS(
        status_code varchar2(2) PRIMARY KEY,
        description varchar2(120) NOT NULL
);
  2    3    4
Table created.
```

```
SQL> desc report_status
 Name                                      Null?    Type
 ----------------------------------------- -------- --------------------
 STATUS_CODE                               NOT NULL VARCHAR2(2)
 DESCRIPTION                               NOT NULL VARCHAR2(120)
```

4. Weapon Details Table:

Relational Schema:
WEAPON_DETAILS(
      WeaponCode : integer
      Description : string
)

Query:
create table WEAPON_DETAILS(
      weapon_code number(3) PRIMARY KEY,
      description varchar2(120) NOT NULL
);

Description:
This table store the code of every weapon used in a crime and textual description about it.

```
SQL> create table WEAPON_DETAILS(
        weapon_code number(3) PRIMARY KEY,
        description varchar2(120) NOT NULL
);
  2    3    4
Table created.
```

```
SQL> desc weapon_details
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 WEAPON_CODE                               NOT NULL NUMBER(3)
 DESCRIPTION                               NOT NULL VARCHAR2(120)
```

5. Victim Details Table:

Relational Schema:
VICTIM_DETAILS(
> **VictimID** : integer
> Age : integer
> Sex : string
> DescentCode : string

)

Query:
create table VICTIM_DETAILS(
> victim_id number(7) PRIMARY KEY,
> age number(3) NOT NULL,
> sex varchar2(1) NOT NULL,
> descent_code varchar2(1) NOT NULL,
> FOREIGN KEY (descent_code) REFERENCES DESCENT_DETAILS(descent_code)

);

Description:
This table stores the ID of every victim who was ever reported in a crime and also their information and descent code.

```
SQL> create table VICTIM_DETAILS(
  2  victim_id number(7) PRIMARY KEY,
  3  age number(3) NOT NULL,
  4  sex varchar2(1) NOT NULL,
  5  descent_code varchar2(1) NOT NULL,
  6  FOREIGN KEY (descent_code) REFERENCES DESCENT_DETAILS(descent_code)
  7  );

Table created.
```

```
SQL> desc victim_details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------------
 VICTIM_ID                                 NOT NULL NUMBER(7)
 AGE                                       NOT NULL NUMBER(3)
 SEX                                       NOT NULL VARCHAR2(1)
 DESCENT_CODE                              NOT NULL VARCHAR2(1)
```

6. M.O. Details Table:

Relational Schema:
MO_DETAILS(
      MOCodes : string
      Description : string
)

Query:
create table MO_DETAILS(
      mo_codes varchar2(4) PRIMARY KEY,
      description varchar2(250) NOT NULL
);

Description:
This table stores the mocode of each possible Modus Operandi and description about them.

```
SQL> create table MO_DETAILS(
        mo_codes varchar2(4) PRIMARY KEY,
        description varchar2(250) NOT NULL
);
  2    3    4
Table created.
```

```
SQL> desc mo_details;
 Name                                     Null?    Type
 ---------------------------------------- -------- --------------------
 MO_CODES                                 NOT NULL VARCHAR2(4)
 DESCRIPTION                              NOT NULL VARCHAR2(250)
```

7. Descent Details Table:

Relational Schema:
DESCENT_DETAILS(
        DescentCode : string
        Description : string
)

Query:
create table DESCENT_DETAILS(
        descent_code varchar2(1) PRIMARY KEY,
        description varchar2(120) NOT NULL
);

Description: This table stores the code for every possible descent and textual description about them.

```
SQL> create table DESCENT_DETAILS(
        descent_code varchar2(1) PRIMARY KEY,
        description varchar2(120) NOT NULL
);
  2    3    4
Table created.
```

```
SQL> desc descent_details;
 Name                                      Null?    Type
 ---------------------------------------- -------- ------------------------
 DESCENT_CODE                              NOT NULL VARCHAR2(1)
 DESCRIPTION                               NOT NULL VARCHAR2(120)
```

8. Premise Details Table:

Relational Schema:
PREMISE_DETAILS(
      PremiseCode : integer
      Description : string
)

Query:
create table PREMISE_DETAILS(
      premise_code number(3) PRIMARY KEY,
      description varchar2(120) NOT NULL
);

Description: This table stores the code of each premise possible and the description about it.

```
SQL> create table PREMISE_DETAILS(
        premise_code number(3) PRIMARY KEY,
        description varchar2(120) NOT NULL
);
  2    3    4
Table created.
```

```
SQL> desc premise_details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------
 PREMISE_CODE                              NOT NULL NUMBER(3)
 DESCRIPTION                               NOT NULL VARCHAR2(120)
```

9. Area Details Table:

Relational Schema:
AREA_DETAILS(
      <u>AreaCode</u> : integer
      ReportingDistrict : integer
      Name : string
      Latitude : float
      Longitude : float
      Cross Street : string
      Address : string
      PremiseCode : integer
)

Query:
```
create table AREA_DETAILS(
        area_code number(2) PRIMARY KEY,
        reporting_district number(4) NOT NULL,
        name varchar2(32) NOT NULL,
        latitude float(10),
        longitude float(10),
        cross_street varchar2(30),
        address varchar2(120) NOT NULL,
        premise_code number(3),
    FOREIGN KEY (premise_code) REFERENCES PREMISE_DETAILS(premise_code)
);
```

Description:
This table stores the details about each area and the premise on which the crime happened.

```
SQL> create table AREA_DETAILS(
  2            area_code number(2) PRIMARY KEY,
       reporting_district number(4) NOT NULL,
       name varchar2(32) NOT NULL,
       latitude float(10),
       longitude float(10),
       cross_street varchar2(30),
       address varchar2(120) NOT NULL,
       premise_code number(3)
  3    4    5    6    7    8    9    10  );

Table created.
```

```
SQL> desc area_details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 AREA_CODE                                 NOT NULL NUMBER(2)
 REPORTING_DISTRICT                        NOT NULL NUMBER(4)
 NAME                                      NOT NULL VARCHAR2(32)
 LATITUDE                                           FLOAT(10)
 LONGITUDE                                          FLOAT(10)
 CROSS_STREET                                       VARCHAR2(30)
 ADDRESS                                   NOT NULL VARCHAR2(120)
 PREMISE_CODE                                       NUMBER(3)
```