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**CSCI 3287**

**PRJ 1 - Database Design**

A screenshot of a computer

AI-generated content may be incorrect.A screenshot of a computer

AI-generated content may be incorrect.**1 & 2) Normalization Process & Database Schema**

**A diagram of a computer program

AI-generated content may be incorrect.3. ER Diagram**

**4. List of Assumptions**

1. Each crime report (DR\_NO) can have multiple crimes and multiple MOCodes.
2. Victim information (age, sex, descent) is only available at the report level, not in a separate table.
3. The Weapon\_Used\_Cd may be null, since not all crimes involve a.
4. All lookup tables (Weapon, Status, Premises, Area, Crime\_Code, MOCODE\_Description) are fully normalized and contain no redundant dependencies.
5. MOCODE values use VARCHAR(4) due to leading zeros found in the source CSV.
6. Area names are limited in length as per dataset; VARCHAR(10) is sufficient.
7. Reporting districts are uniquely identified by Rpt\_Dist\_No and belong to a single Area.
8. Crime table uses a composite key including Crime\_Seriousness to preserve all Crm\_Cd\_1–4 values.
9. MOCODE\_Description is treated as a reference table and is linked via the bridge table Crime\_MOCodes.
10. Date and time fields are retained in standard DATETIME and TIME formats.

**5. SQL Scripts PLAN for 6 Queries**

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| --- | --- | --- | --- | --- |
| **Query** | **Description** | **Tables Used** | **Fields/Columns Involved** | **SQL Set Type** |
| **1** | Total incidents per area | CrimeReports, Area | AREA\_NAME, COUNT(DR\_NO) | INNER JOIN, GROUP BY |
| **2** | Crimes and weapons used | CrimeReports, Crime, Crime\_Code, Weapon | Crm\_Cd\_Desc, Weapon\_Desc | LEFT OUTER JOIN |
| **3** | MO codes used in reports but not described | Crime\_MOCodes, MOCODE\_Description | Mocode | SET THEORY: EXCEPT / NOT IN |
| **4** | Number of crimes per premises type | CrimeReports, Crime\_premises | Premis\_Desc, COUNT(\*) | INNER JOIN, GROUP BY |
| **5** | Top 5 most frequent crime types | Crime, Crime\_Code | Crm\_Cd\_Desc, COUNT(\*) | INNER JOIN, ORDER BY, LIMIT |
| **6** | Crime count by reporting district | CrimeReports, Reporting\_districts | Rpt\_Dist\_No, COUNT(\*) | INNER JOIN, GROUP BY |