MURDER AT ATOM CITY

Case Status: Closed

Investigator: Mishal Fatima

INTRODUCTION

On 9th March, 2023, a heinous crime was committed in the city of Atom-city. Not just any crime but a murder in a gym leaving a dead body and two witnesses in its trail. This report documents the findings that lead to the identification of the murderess and their accomplice. Having released the warrants and taking the culprit into custody this case is officially **solved**.

The report discusses the steps taken to clean the data, defining primary and foreign keys and then finally querying data to reach the perpetrator.

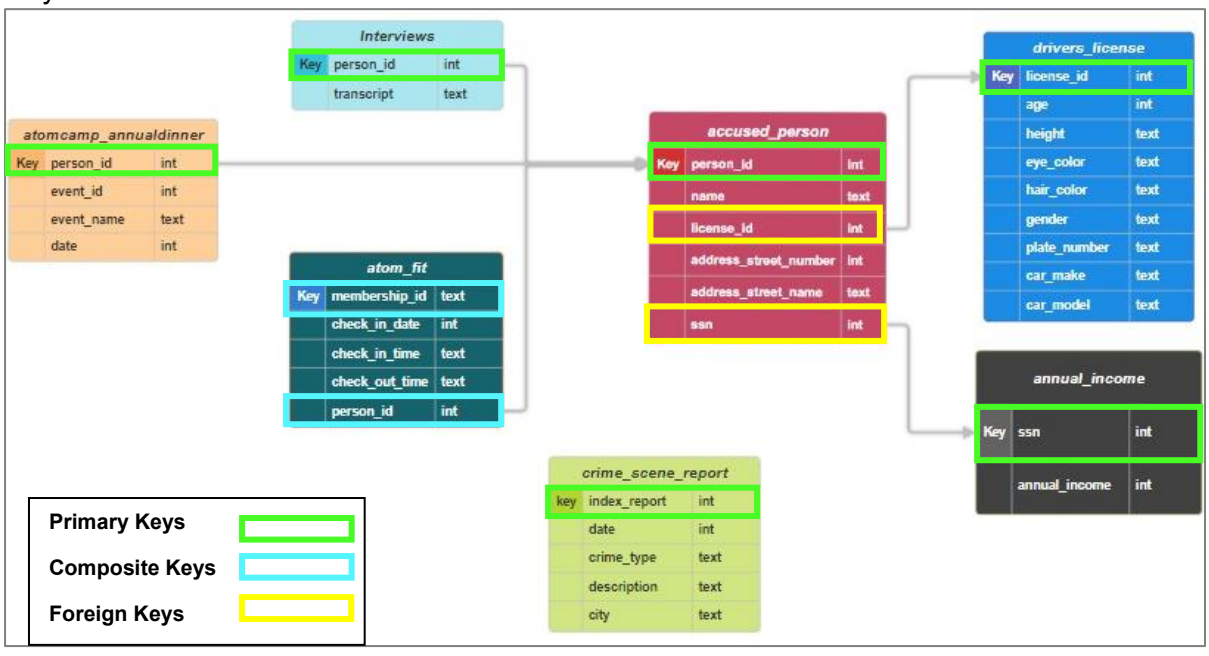
DATA EXPLORATION & CLEANING

After creating the database **'ATOM_MURDER_MYSTERY'** and importing all the available data, it was then analyzed thoroughly to identify datatypes, counts and unique values etc. Following steps were taken to clean the dataset:

1. The address was simplified by dividing it into two columns for city and street name and a column was renamed to resemble the rest of the table.
2. Date for all columns was first homogenized to have same number of elements and then converted to date format for various tables i.e. atom_fit, crime_scene_report and annual_dinner.
3. Special characters were replaced in interviews table to make it understandable.

SETTING PRIMARY AND FOREIGN KEYS

Unique identifiers were selected to assign primary keys and in one instance a composite key to each table. Furthermore, two foreign keys were also created for the ease of retrieving data from different tables in database. Following schematic shows the primary and foreign keys in each table:



QUERYING DATA AKA ‘SOLVING THE CRIME

Step 1: Investigate the crime scene.

Filtered crime scene data for Atom-city for the date 2023-03-09, using **SELECT** and **WHERE clause**, showed that according to the security footage there were two witnesses present at the time of murder.

i. Witness 1: Lives in the last house in Saddar Bazar, Rawalpindi
ii. Witness 2: Sanam Akhtar who lives somewhere in Gulshan-e-Ravi, Lahore.

Step 2: Check for further information (unique identifier) and authenticity of witnesses

Using the information from the previous step, general information of the two witnesses was retrieved using **SELECT**, **WHERE**, **AND** and a **SUB-QUERY** (for maximum street number) from accused_person table.

Step 3: Gather the interviews given by the two witnesses

A **JOIN** on person_ids, between accused_person and interviews was used to gather the interviews. The information collected from these interviews includes:

i.	location:	gym	iv.	membership id:	AT3326
ii.	date:	2023-03-09	v.	car plate number:	LHR7303
iii.	gender:	female	vi.	make of car:	Audi

Further investigations were done to rule out the witnesses as killers, such as checking their account statements, driver’s license and whereabouts for the day of murder.

Step 4: Identify the killer or in this case an accomplice

Using the information from the third step, two temporary tables i.e. **CTEs** for atom_fit and drivers_license were created and then **JOIN**ed with accused_person table to identify the accused. Fortunately, all of the details pointed towards a single person named **'Ali Haider'** and unfortunately, he does not match the gender described by the witnesses. Which means further investigations must be carried out.

Step 5: Retrieve the interview of Ali Haider

Interview of Ali Haider is retrieved from table interviews by filtering person id using **SUB-QUERY** on atom_fit where date and membership id match the above description. The interview gives further clues to help find the killer:

i.	gender	female	iii.	eye color	blue
ii.	financial status	millionaire	iv.	age	60

v. car make Mercedes vi. car model Benz

vii. Will attend dinner of a data company on 2023-03-09

Step 6: Identify someone with all of the above attributes

Using a **JOIN** between accused_person and drivers_license gives two people. So, then the join in converted into a **CTE** to check against the final clue that is the financial status. This narrows it down to one ‘**'Shabnam Akhtar'.**

The only thing left is to check if the accused attended a dinner on the day of murder. For which a **SUB-QUERY** is written within a **SELECT** clause to filter out the person id who attended a dinner on 2023-03-09.

CONCLUSION

Shabnam Akhtar, a 60-year-old millionaire murdered a person on 9th March, 2023 at a gym in Atom-city. This case has been classified as **“CLOSED”.**