

Link to the website: [flip1.engr.oregonstate.edu:10101](http://flip1.engr.oregonstate.edu:10101)

### **Team Members:**

Jesse Piccione

Dylan Karambut

### **Overview:**

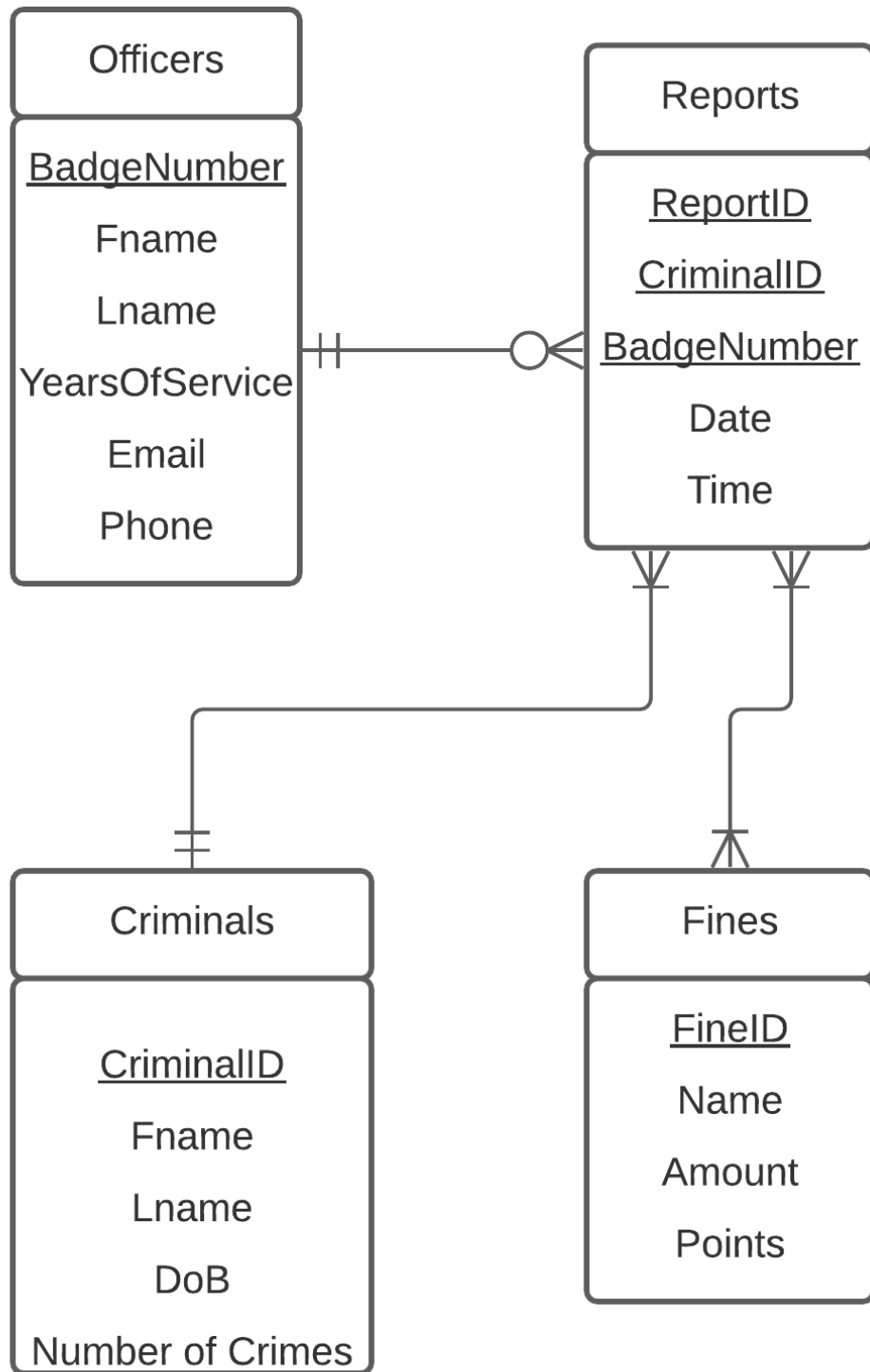
The totally not a fake town name police department has had an increase of crimes in the last twenty years, from 1200 reports a year to 24000 reports a year. So much so that they are in need of a new relational DBMS. A website driven by a backend database will help optimize the organization of their data, and will provide a better user experience for the increase in data that has caused a clunky runtime of  $O(n^6)$  with queries in their current system. In addition to a faster and more optimized system, this new application will have new features where it linked the fine as well as the criminal history for the suspected person.

### **Outline:**

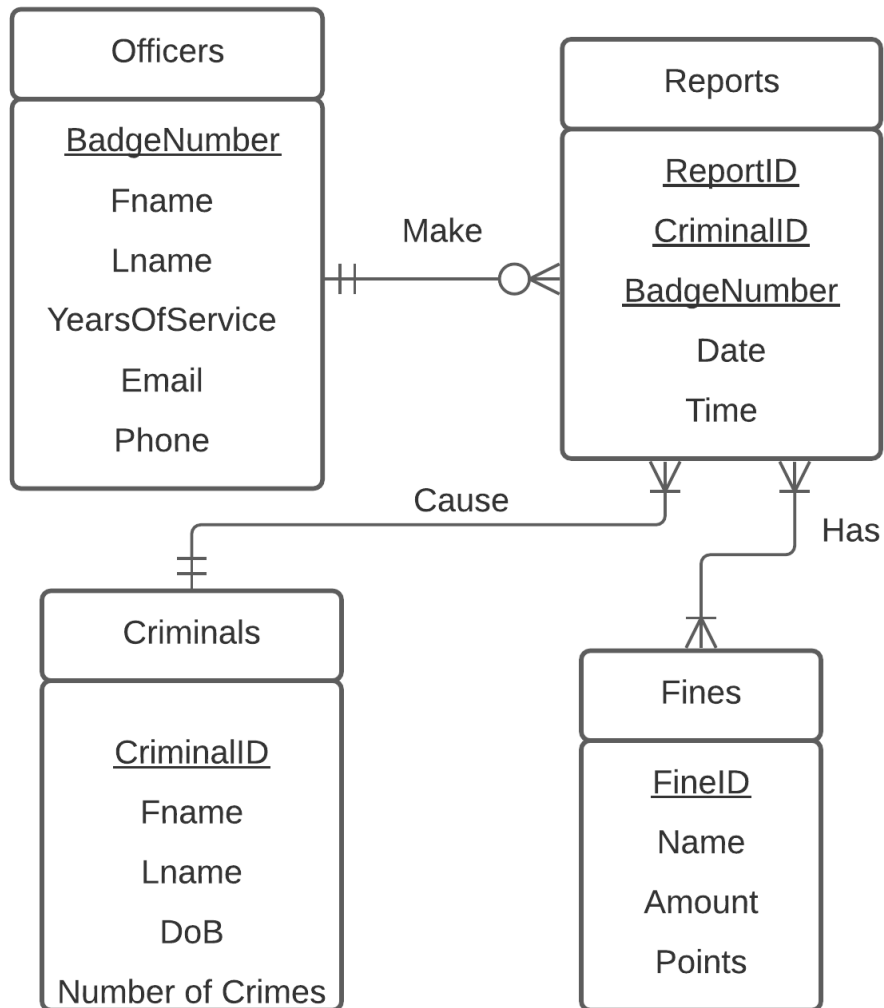
- **Officers - Information where it shows the data of the officers.**
  - **BadgeNumber:** int, unique, not null, PK
  - **Fname:** varchar(255), not null
  - **Lname:** varchar(255), not null
  - **YearsOfService:** short, not null
  - **Email:** varchar(255), not null
  - **Phone:** varchar(10), not null
  - **Relationship:** A 0:m relationship between officer and report
- **Reports - Data where it will store data of the report of an incident between the officers and the civilians.**
  - **ReportID:** int, not null, pk
  - **CriminalID:** int, not null, fk. FK to Criminals(CriminalID)
  - **BadgeNumber:** int, not null, fk. FK to Officers(BadgeNumber)

- **Date:** Date, not null (MM/DD/YYYY)
- **Time:** Time, not null (24 hours time format)
- **Relationship:** A 1:m relationship between report and officer
- **Relationship:** A 1:m relationship between criminal and report
- **Relationship:** A M:N relationship between fine and report
- **Criminals - Gives criminal record or history of the suspected persons.**
  - **CriminalID:** int, auto\_increment, not null, unique, pk
  - **Fname:** varchar(255), not null
  - **Lname:** varchar(255), not null
  - **DoB:** Date, not null
  - **NumberOfCrimes (Since birth),** varchar(255), notnull
  - **Relationship:** A 1:m relationship between criminal and report
- **ReportFines - Composite table for M:N relationship between report and fine.**
  - **ReportID:** int, not null, fk. FK to Reports(ReportID)
  - **FineID:** int, not null, fk. FK to Fines(FineID)
- **Fines - Shows the details of a fine for the suspected persons.**
  - **FineID:** int, auto\_increment, pk
  - **Name:** varchar(255), not null
  - **Amount:** int, not null (in US\$)
  - **Points:** short, not null
  - **Relationship:** A M:N relationship between fine and report

## ER Diagram



## Schema



## Rational of feedback:

- Added quantitative data regarding the phrase clunky runtime because another student did not like that we did not give a specific runtime for a fake system for some reason.

- The names of the entities were pluralized to be more consistent with naming conventions of entities. They were supposed to be that the way they are now, that was a mistake that was found.
- The relationship between officers and reports were altered to 0:M from 1:M to allow an officer to have no reports.
- There are no specifics added in regards to the relationship for the reportFines Entity because it is a handler for the many to many relationship between the reports and fines entities. That was intentional based on previously seen examples.
- The capitalization inconsistency was also addressed from the draft. To have more consistent attribute names across all entities.
- Implemented Foreign Key to a specific path.
- For consistency wise, all of the websites will use the existing page, instead of opening a new webpage. That case, the Criminals tab will not open a new tab now.
- Implemented the Database and sample data. Although it is not connected to the website yet.
- Implemented Create and Read of the Database. Now the database will be connected with the webpage.
- Implemented Update and Delete