Philadelphia Crime Detector

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The purpose of this program is to project the likelihood of crime for a user based on his or her location and the time of day. Given this information, the user can navigate to safer areas if the probability is relatively high.

Overview:

Using Philadelphia Police Department [crime incidents](#) from 2017 to present, Philadelphia Crime Detector calculates a likelihood of violent crimes in a given location and hour of day *relative* to other locations in Philadelphia at the same hour.

More than 228,000 crimes in the following categories are included in the analysis:

Aggravated Assault	Homicide	Rape
Firearm	Motor Vehicle Theft	Robbery Firearm
Arson	Offenses Against Family	Robbery No Firearm
Burglary Non-Residential	and Children	Theft from Vehicle
Burglary Residential	Other Assaults	Thefts
Disorderly Conduct	Other Sex Offenses (Not	Weapon Violation
Driving Under the Influence	Commercialized)	
Forgery and Counterfeiting	Public Drunkenness	

How to Run:

Installation and Setup:

Download the program's src folder. It should contain five classes: CrimeIncident.java, IncidentAnalysis.java, IncidentReader.java, IncidentReporter.java, and the configuration class SecretFile.java. Next, ensure the file "data.csv" is stored in the same folder that contains the src folder. Finally, the user configures the build path with [java-json.jar](#) or an equivalent json handler. Philly Crime Detector is optimized to run at the command line level in the [Eclipse IDE](#).

Configuration:

Philly Crime Detector utilizes Google's Geocoding API. In order to use this software, the user must first [obtain an API key](#). In SecretFile.java, replace "`API KEY GOES HERE`" with the actual key. The developers' key was omitted from the code for security reasons.

How to Use:

1. Running Program

Launch the program by pressing the green "run" button in the Eclipse IDE.

2. Entering Location

When prompted, the user will input his/her location. The location does not have to be a formal address; for instance, it can be a Philadelphia neighborhood, zip code, intersection or landmark.

The following are examples of acceptable locations:

Upenn	15th Street Station
32nd and Walnut	Amy Gutmann's House
2040 Market Street	Locust Street Philly
Fishtown	Fresh Grocer Philly
19104	Rittenhouse Square
Penn's Landing	

However, if a location is outside of or not specific to Philadelphia, the user will see an error message.

The following are examples of unacceptable locations:

Locust Street	1060 West Addison Street
Fresh Grocer	The White House
Rittenhouse	68137
Penn	

Sample Error:

```
Where are you? nyc
Sorry, we do not currently have data for New York, NY, USA. Please try a location in Philadelphia.
```

3. Entering Time

Next, the user is prompted to input a time, using the 24-hour clock (Military Time). Acceptable formats for input include hh and hh:mm. If the hours are greater than 23, the user will see an error message.

Sample Error:

```
Where are you? Philly Museum
Using "Military Time," what time is it? (hh:mm) 38:16
The time you entered is invalid.
```

4. Understanding Results

```
Where are you? North Philadelphia
Using "Military Time," what time is it? (hh:mm) 22:03
Calculating relative likelihood of violent crime for North Philadelphia in the 22 o'clock hour...
42%
This means North Philadelphia is pretty unsafe in the 22 o'clock hour.
```

The average percentage of crime across the entire dataset is roughly 10 percent. The highest percentage of crime across all times and zones is 42, and the lowest is 0. This range is the relative benchmark for criminal activity across the city. For instance, if the percentage is in the 30-40 range, Philly Crime Detector considers the likelihood of crime to be relatively high, whereas if the results are less than 5 percent, the zone and time are considered very safe relative to others.

See below for an approximate breakdown of the ten zones: