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4th Year Data Science Functional Specification

Investigating Baltimore Arrest Rates

Institute of Technology, Carlow

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# Objectives

The application will be for the use of the Baltimore Police Department. The application will provide the police department with predictions of future crime via a secure login. These predictions will include data such as, where crime will happen, when it will happen, who will commit the crime and what type of crime are they most likely to commit.

The application will also provide a service to the public allowing them to see a heat map of which areas they should avoid due to high levels of crime. The application will also provide statistics on the crime and arrests committed throughout Baltimore, visible to the public.

# Architecture

The application will use Python 3.6 Flask for the backend side of things. The data will be stored in a SQLite database for development and in MySQL database for production.

The application will use TODO for machine learning data processing and for making predictions.

The frontend of the application will be created using Jinja2 templating language in conjunction with HTML, CSS and JavaScript. The frontend will require some external libraries including jQuery and the Google Maps API library.

If given time, the frontend application may be created using Angular listening to the backend Flask RESTful API.

# Functionality

Text

## Functionality Description

Text

## User Interface Description

Text

## External Interfaces

The application will make use of Google Maps API library to display a heatmap of Baltimore indicating the ‘hot zones’ of criminal activity.

# Potential risks / issues

Text

# Gantt chart / timeline

Text

# Reference/research documents