CRTY 1035
3H in QGIS

The purpose of this project was to understand the complexities of advanced visualization and trend analysis techniques by researching and demonstrating three visualization techniques in QGIS. The project consisted of a final technical report, which included details on the origin, purpose, and implementation of heatmap, hotspot, and hexbin visualizations for point data. Using open-source data from the Surrey Police in the United Kingdom, data was imported into QGIS and used to produce three example visualizations that served as supporting material in the technical report. Each section included step-by-step instructions on producing these data visualizations in QGIS, and concluded with an analysis of any patterns, trends, or other phenomena noted in these spatial distributions. The resulting product was a comprehensive overview of these three advanced techniques, with supporting information, instructions, and examples.

Cleaned and processed large volumes of data from an **open-source repository**, focusing the dataset from all types of crime to specifically violent crime.

Researched the history and purpose of three different kinds of data visualization, and drew connections between these three methods.

Produced three example visualizations using heatmap, hotspot, and hexbin techniques in **QGIS**, making use of symbology options, processing toolbox, and layout features.

Created detailed, step-by-step tutorials that allow other users to reproduce the results shown in the technical report.

Analyzed resulting map products and identified spatial patterns and trends, and provided research-based hypotheses regarding these trends.

Violent Crime in Surrey, UK
Heatmap | February, 2019

Violent Crime in Surrey, UK
Hotspot | February, 2019

Violent Crime in Surrey, UK
Hexbin | February, 2019