HSMA Session 3C: Learning Objectives

Part 1: Working with Travel Times

Students should be able to:
- Use a pre-collected dataset of LSOA-LSOA centroid travel times to generate a choropleth
- Use the matrix method of the routingpy package to generate car and walking travel times from an open-source API for a given combination of sources and destinations
- Explain the benefits and downsides of using routingpy over directly interacting with different travel time APIs
- Show an awareness of the limitations of different travel time APIs
- Explain what an isochrone is
- Use the isochrone method of the routingpy package
- Plot isochrone data retrieved using routingpy

Part 2: Geostatistics

Students should be able to:
- Explain the concept of spatial autocorrelation
- Explain the concept of spatial weights
- Explain the concept of spatial lag
- Explain the terms hotspots, coldspots and spatial outliers
- Create a Moran's plot from a dataset
- Calculate Moran's I
- Explain how to interpret the p value produced when calculating Moran's I
- Calculate a local measure of spatial autocorrelation (local Moran's I)
- Create plots of hotspots, coldspots and spatial outliers using the esda package
- Explain how to choose a p value when creating plots using the esda package