

# Portfolio Requirements

VIS 2129

Each layout will be a separate PDF file, except layout 6, which will be an html file. Submit a link to a portfolio website including links to each layout, all of which should either be landscape-oriented letter/A4 PDFs or HTML files. See an example portfolio [here](#).

## Large-area maps

**Layout 1:** Select a large area from Table 1 below, and select at least three continuous variables to describe the associated subareas (for example: population, median age, average household size, or gross domestic product). Create a layout that shows the variation in your selected variables among subareas using three figures: a choropleth map, a cartogram, and a proportional symbol map (with symbols placed at the centroid of each subarea). Indicate the map projection you've used, and do not use an equirectangular projection.

**Table 1: Large areas that may be used for Layout 1, with associated subareas**

Large area	Subareas
Africa	Countries
China	Provinces
European Union	Countries
India	States
South America	Countries
United States of America	States (you may choose to exclude Alaska and Hawaii)

## Metropolitan-scale maps

For Layouts 2 through 4, select a metropolitan area or city of your choice, and identify data for neighborhood-level statistical areas within that area. Your dataset should include at least two continuous variables and two categorical variables (which might simply be categories you define based on threshold values of additional continuous variables). Examples of neighborhood-level statistical areas are given in Table 2 below. If you choose a metropolitan area in a country that is not listed, you should select a neighborhood-level statistical area that is at a similar scale to those listed in Table 2 (with typical populations between about 1,000 and 10,000 people).

You may use the same metropolitan area or city for all three layouts, but you are not required to.

**Table 2: Neighborhood-level statistical areas for various countries**

Country containing metropolitan areas	Neighborhood-level statistical areas
Australia	Statistical Area Level 2 (SA2)
Canada	Census tracts
Mexico	Área Geoestadística Básica (AGEB)
United Kingdom	Middle layer super output areas
United States of America	Census tracts

**Layout 2:** Create an infographic to illustrate the distributions of your selected variables and the relationships among them. The infographic should include at least one scatterplot (with a trend line), one bar graph, one histogram, one violin plot, and any other figures you choose that display the data in an

interesting way. At least one of these should show data using a polar coordinate system, and at least one should show data using a Cartesian coordinate system. Some of your figures may be maps, but maps are not required for this layout.

**Layout 3:** Select one location in the metropolitan area you have selected, calculate the number of metropolitan area residents who live within a 30-minute drive of that location, and create a map to illustrate your results.

**Layout 4:** Create a map to display a continuous raster dataset showing the locations of traffic incident or crime hot spots within the metropolitan area.

## Neighborhood-scale maps

For Layouts 5 through 8, choose a single neighborhood (for example, a census tract or a few adjacent census tracts) from among those analyzed in Layouts 2 through 5. You may use the same neighborhood for all four layouts, but you are not required to.

**Layout 5:** Create a dot-density map showing the distribution of at least three different populations across the neighborhood. Populations can be based on race, ethnicity, age/generational categories, or other characteristics of your choice.

**Layout 6:** Create an interactive map of the neighborhood that shows the locations of particular amenity, where users can pan, zoom, and click on an amenity to display more information about it.

**Layout 7:** Create a layered axonometric map of the neighborhood with at least two layers, each showing the locations of a different set of features.

**Layout 8:** Hand-draw a map of a neighborhood you have spent a lot of time in, including annotation indicating locations that are significant to you. Digitize your drawing, georeference the image using GIS software and display at least one layer of GIS data (for example, streets, parcel boundaries, trees, or buildings footprints) superimposed on your drawing.

## Site-scale visualizations

For Layouts 9 and 10, select a specific site (such as a single property, parcel, intersection, or street segment) and propose a physical improvement (such as building, a parklet, a revised lane configuration, or an art installation).

**Layout 9:** Create an eye-level collage to illustrate what the site might look like after your plan is implemented.

**Layout 10:** Create a 3D model of the site (using a program like SketchUp, Rhino, or AutoCAD) to illustrate what the site might look like after your plan is implemented.