Assignment 1: Digital Cartography

(60 Points, 20 Points for Each Map)

Data available under Resources>UK Data.

The provided **uk_data.gpkg** GeoPackage contains a variety of data layers for the United Kingdom, including the following that you will use in this assignment:

countries_bound: boundaries of England, Wales, Scotland, and Northern Ireland

world_countries: global dataset of world country boundaries

geo_bedrock: bedrock geology

geo_surficial: surficial geology

places: major cities

roads: major roads

railroads: major railroads

The geology data are from the British Geological Survey. The political boundaries are from the United Kingdom Data Service. All other layers are from Natural Earth. In this assignment, you will use these layers to create three map layouts that will be graded based on the following rubrics.

MAP 1: United Kingdom Reference Map

General reference map for the United Kingdom.

1. Map should be in portrait orientation **(1 Point)**
2. Map should include the following layers: **countries_bound**, **places**, **railroads**, and **roads**. **(2 Points)**
3. All the place points, which represent towns, should be labeled using the "NAME" field. The labels should be legible. **(2 Points)**
4. Each country boundary should be symbolized using a different color, and a legend should be included that explains the colors. The legend can contain additional map features, but this is not required. **(3 Points)**
5. The roads and railroads should be differentiated using different line symbols. **(2 Points)**
6. Include a well-formatted north arrow and scale bar. **(1 Points)**
7. To provide context, use the **world_countries** layer in the background, and make the background blue so it looks like water. **(3 Points)**
8. Provide a citation for Natural Earth and the UK Data Service. **(1 Point)**
9. Provide a title. **(1 Point)**
10. The map should be overall neat, well organized, and use the space well. **(4 Points)**

MAP 2: United Kingdom Bedrock Geology Map

Map of UK bedrock geology that differentiates units by geologic period.

1. Map should be in portrait orientation. **(1 Point)**
2. Map should include the **geo_bedrock** layer. It should be symbolized using the "MIN_PERIOD" field, which provides the geologic period of each feature. Unique, unordered colors should be used to differentiate the categories. Remove the symbol outlines but maintain a fill color. **(4 Points)**
3. The legend should include the geologic period names, with unique colors differentiating each period. The labels should not be in all upper case. So, you will need to edit the labels. The periods should be in order from the youngest at the top to the oldest at the bottom (you can find the correct order with an internet search). Any NULL feature should be labeled as "Precambrian". **(4 Points)**
4. Include a well-formatted north arrow and scale bar. **(1 Points)**
5. To provide context, use the world countries in the background, and make the background blue so it looks like water. **(3 Points)**
6. Provide a citation for the United Kingdom Geological Survey. **(1 Points)**
7. Provide a title. **(1 Point)**
8. The map should be overall neat, well organized, and use the space well. **(5 Points)**

MAP 3: United Kingdom Surficial Geology Map

1. Map should be in portrait orientation. **(1 Point)**
2. Map should include the **geo_surficial** layer. It should be symbolized using the "LEX_D" field, which provides a description of the surficial deposits. Unique, unordered colors should be used to differentiate the categories. Remove the symbol outlines but maintain a fill color. **(4 Points)**
3. The legend should include the surficial deposit type, with unique colors differentiating each type. The labels should not be in all upper case. So, you will need to edit the labels. Any NULL feature should be labelled as "Other". **(4 Points)**
4. Include a well-formatted north arrow and scale bar. **(1 Points)**
5. To provide context, use the world countries in the background, and make the background blue so it looks like water. **(3 Points)**
6. Provide a citation for Natural Earth and the United Kingdom Geological Survey. **(1 Points)**
7. Provide a title. **(1 Point)**
8. The map should be overall neat, well organized, and use the space well. **(5 Points)**

Deliverables

- Three map layouts in PDF format.