

Assignment 6: Raster Data Summarization

(60 Points Total, 6 Points Each)

Data available under Resources>UK Data.

The following raster layers have been provided for the entire extent of the United Kingdom. Both grids have been resampled to a 100 m cell size to reduce processing time.

uk_lc.tif: land cover grid derived from the CORINE 2018 land cover product (<https://land.copernicus.eu/pan-european/corine-land-cover/clc2018>)

uk_dem100m.tif: digital elevation model with units in meters (<https://www.eea.europa.eu/data-and-maps/data/copernicus-land-monitoring-service-eu-dem>)

The provided **uk_data.gpkg** GeoPackage contains the United Kingdom district boundaries (from the United Kingdom Data Service) and point locations of major cities (from Natural Earth).

district_bound: all districts in the United Kingdom

places: major cities

Using raster summarization techniques to answer the following questions. The **district** name is provided in the “name” field, and the **city** name is provided in the “NAME” field.

Questions

1. Which **city** has the **highest** reported **elevation**?
2. Which **city** has the **lowest elevation**?
3. What is the **mean elevation** of all the **cities**?
4. Which **district** has the **highest mean elevation**?
5. Which **district** has the **lowest mean elevation**?
6. What is the **range** of mean **elevations** for all the **districts**?
7. Which **district** has the **largest percentage** of its area classified as peat bogs **land cover** (Code 36)?
8. Which **district** has the **largest percentage** of its area classified as moors and heathland **land cover** (Code 27)?
9. Which **district** has the **largest percentage** of its land area classified as continuous urban fabric or discontinuous urban fabric **land cover** (Codes 1 and 2)?
10. What is the **average/mean percentage** continuous urban fabric or discontinuous urban fabric (Codes 1 and 2) for all the **districts**?

Deliverables

- Answers to the 10 questions.