Portfolio

Muhammad Bilal

CONTENT

ABOUT ME

My name is Bilal and I have done my Bachelor's in Geo-information system from Arid Agriculture University Pakistan. Currently, I am pursuing Copernicus Master in Digital Earth from Paris Iodron University of Salzburg and Palacky University of Olomouc. I have also 3 years of professional experience in GIS Domain. This portfolio represents my work that I have done in my master studies and made amazing maps using advance Cartographic techniques that represent different statistical information related to different region in the world.

As a Master's student of the Geovisualization track, I am learning the advanced methods of visualization including infographics in the Design Geovisualization course and implementing them using Adobe Illustrator and Inkscape graphics software. I took a course on Thematic Cartography in which I learned the core concept and practical implementation of different thematic types like choropleth, Proportional symbols, and multivariate methods. Additionally, In the first year of my master's in Salzburg, I acquired knowlegde in Spatial analysis methods, cloud computing platforms, and machine learning and also did different projects in these domains.

More detail Information can be found by using following links

wwww.linkedin.com/in/bilalperviaz

https://bilalpervaiz.github.io/bilal.github.io/

DESIGN IN GEOVISUALIZATION POSTER
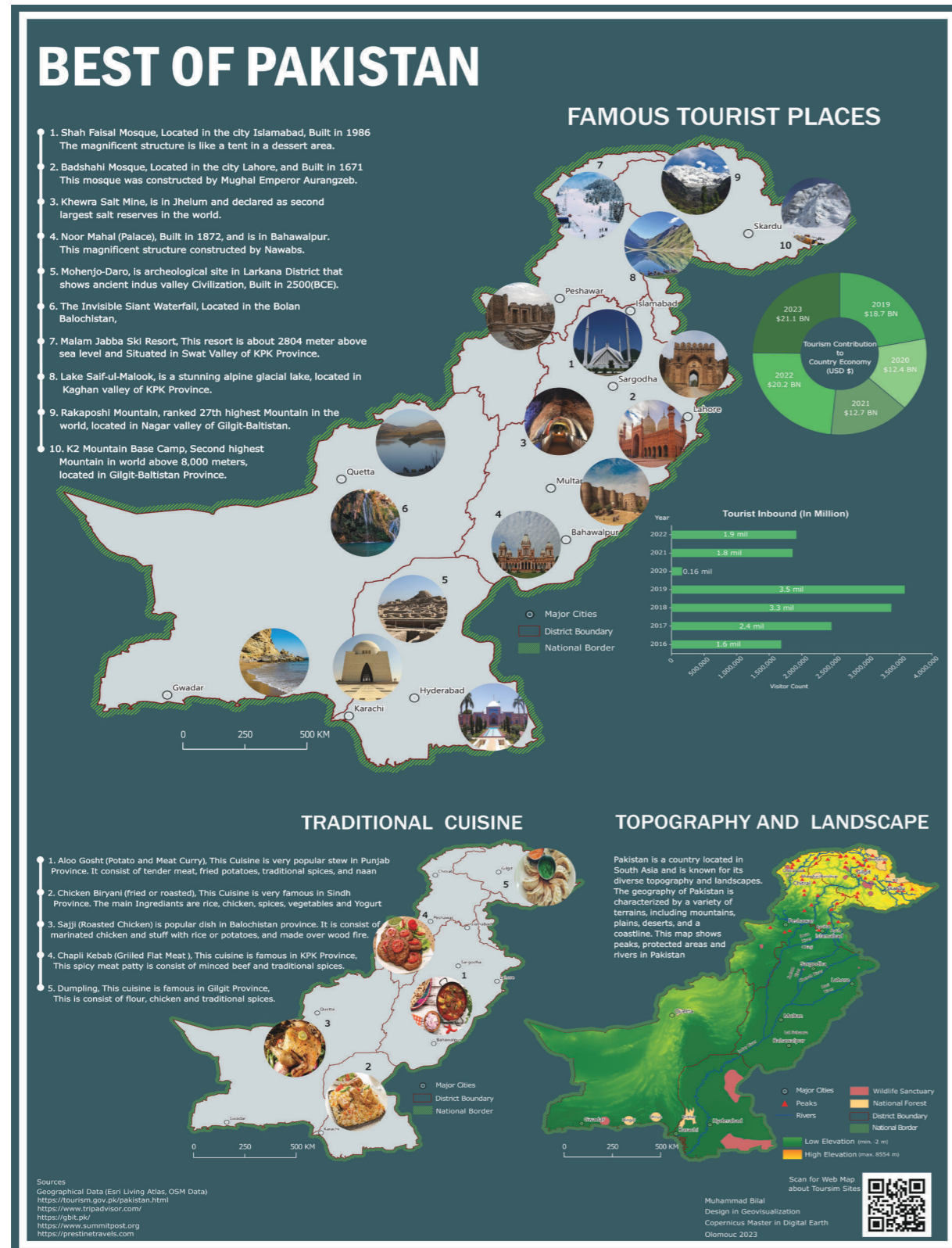
The Theme is to Introduce Pakistan visualize those things that this country is famous for like Tourism Places, Traditional Food and its beautiful landscape consist of mountains, deserts, and Coastlines. The main map is visualizing the famous tourist places consist of Archeological Sites, Old Castles, Lakes, Mountains, Religious Sites, Ski resorts, and their details. In graphics bar chart is showing the number of tourists that came to visit Pakistan for last 5 years.

The Second map visualize famous traditional cuisine that is popular in different region of Pakistan and third map visualize topography of Pakistan and different landscape features like peaks, National Forest, Wildlife Sanctuary, and Rivers. This Poster also embed by QR code that contain the link of ArcGIS Online Web map. The webmap help user to identify more details about tourist sites in an interactive manner.

Softwares that are used to make this Poster
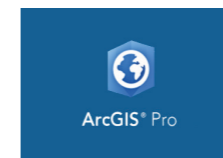
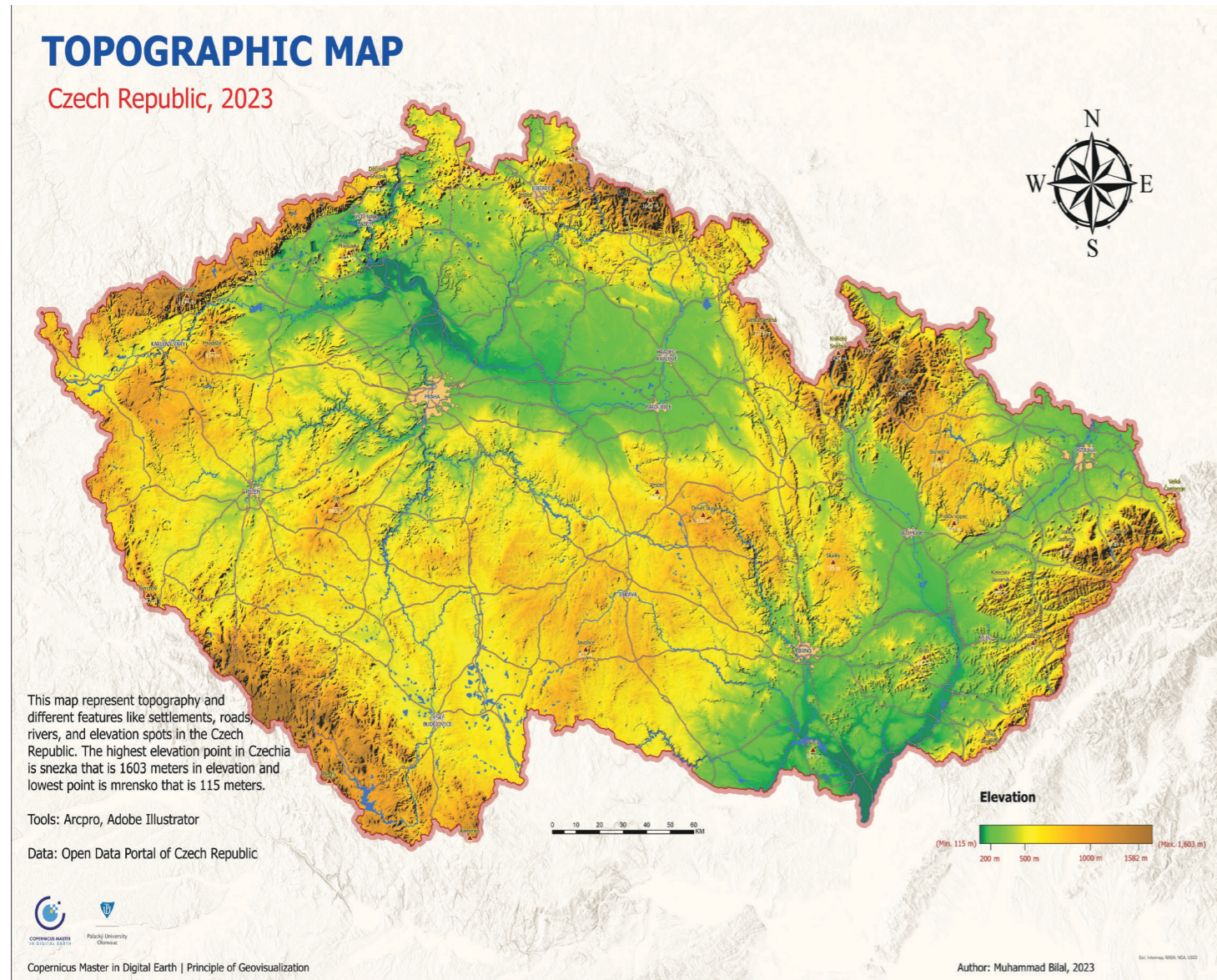Adobe illustrator   ArcGIS Pro   Inkscape

This Poster is made in Design in Geovisualization course by using maps and infographics, Copernicus Master in Digital Earth, 2023.

TOPOGRAPHIC MAP

This map visualizes the topographic surface and different features like stlement, roads, rivers, and elevation spots in the Czech Republic. The highest elevation point in Czechia is snezka that is 1603 meters in elevtion and lowest point is mrensko that is 115 meters. The darker brown areas represent high elevation and light green shows low elevation areas. This map is generated by integrating layers of river, settlement, roads and hillshade is used as background that gives a pseudo 3D look to the map.

Softwares that are used to make this map
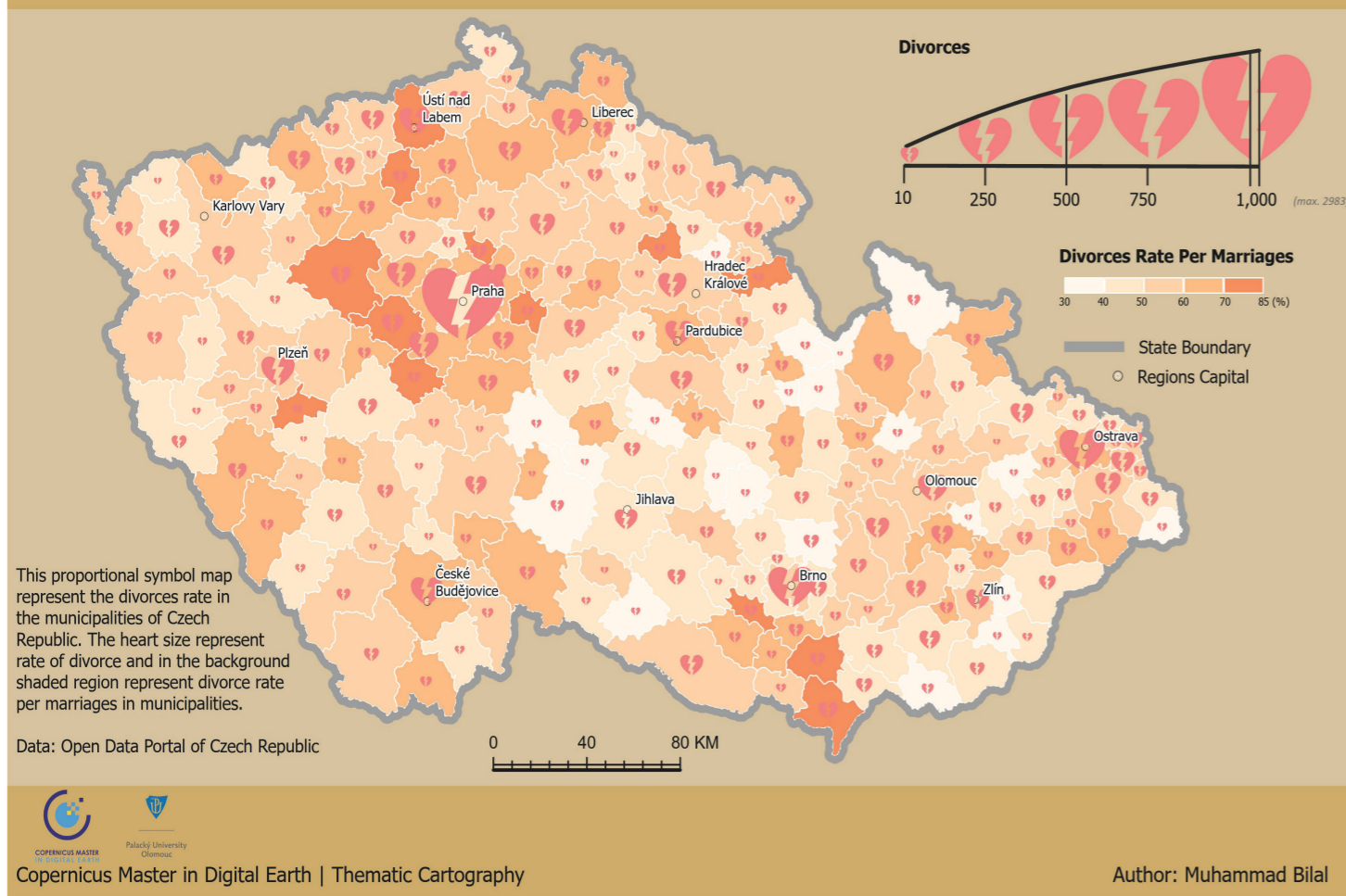

Adobe illustrator

ArcGIS Pro

This map is designed in Principle of Geovisualization course, Copernicus Master in Digital Earth, 2023.
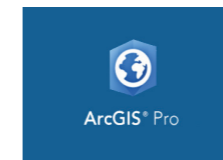
PROPORTIONAL SYMBOL MAP

DIVORCES IN THE CZECHIA
in municipalities with extended competences in 2023

Divorces

10   250   500   750   1,000   *(max. 2983)*

Divorces Rate Per Marriages
30   40   50   60   70   85 (%)

State Boundary
○ Regions Capital

This proportional symbol map
represent the divorces rate in
the municipalities of Czech
Republic. The heart size represent
rate of divorce and in the background
shaded region represent divorce
rate per marriages in municipalities.

Data: Open Data Portal of Czech Republic

0   40   80 KM

Copernicus Master in Digital Earth | Thematic Cartography
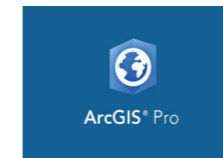
Author: Muhammad Bilal

This map is designed in Thematic Cartography course by using Proportional Symbol Method, Copernicus Master in Digital Earth, 2023

This proportional symbol map represent the divorces rate in the municpalities of Czech Republic. The heart size represent rate of divorce and in the background shaded region represent divorce rate per marriages in municipalities. The proportional symbol technique is a thematic map that scales the sizes of point symbols by their attribute values. This technique is useful for mapping economic SDG indicators as they evoke a metaphor of discrete and abrupt phenomenon, such as sites of production and distribution. Because of the strength of the visual variable size, readers can quickly assess the distribution of absolute values among different countries.

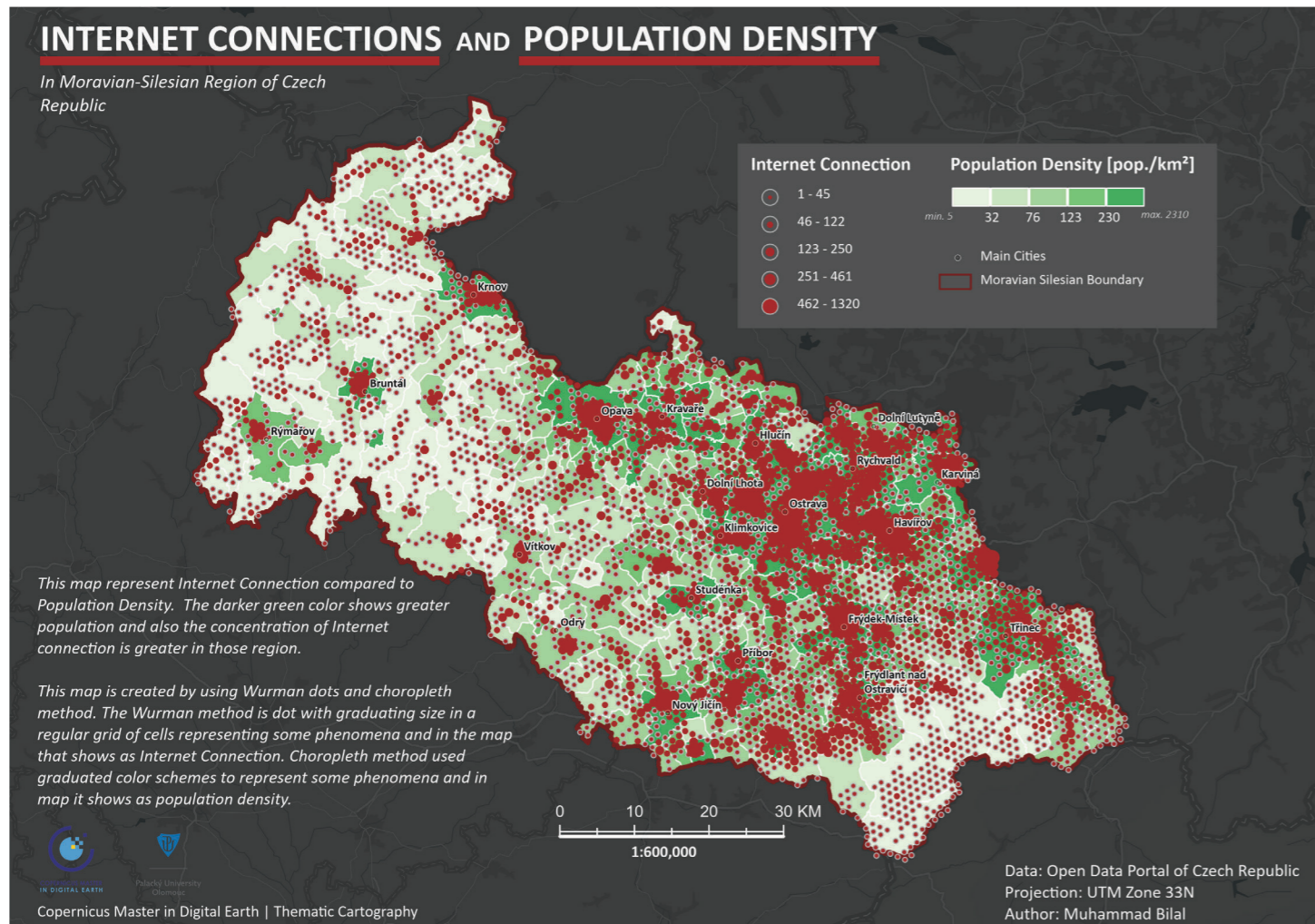Softwares that are used to make this map

Adobe illustrator

ArcGIS Pro

WURMAN DOT DENSITY

INTERNET CONNECTIONS AND **POPULATION DENSITY**

In Moravian-Silesian Region of Czech Republic

Internet Connection
- 1 - 45
- 46 - 122
- 123 - 250
- 251 - 461
- 462 - 1320

Population Density [pop./km²]

min. 5   32   76   123   230   max. 2310

○ Main Cities

▭ Moravian Silesian Boundary

This map represent Internet Connection compared to Population Density. The darker green color shows greater population and also the concentration of Internet connection is greater in those region.

This map is created by using Wurman dots and choropleth method. The Wurman method is dot with graduating size in a regular grid of cells representing some phenomena and in the map that shows as Internet Connection. Choropleth method used graduated color schemes to represent some phenomena and in map it shows as population density.

0   10   20   30 KM

1:600,000

Data: Open Data Portal of Czech Republic
Projection: UTM Zone 33N
Author: Muhammad Bilal

Copernicus Master in Digital Earth | Thematic Cartography

This map is designed in Thematic Cartography course by using Wurman Dot Density method, Copernicus Master in Digital Earth, 2023
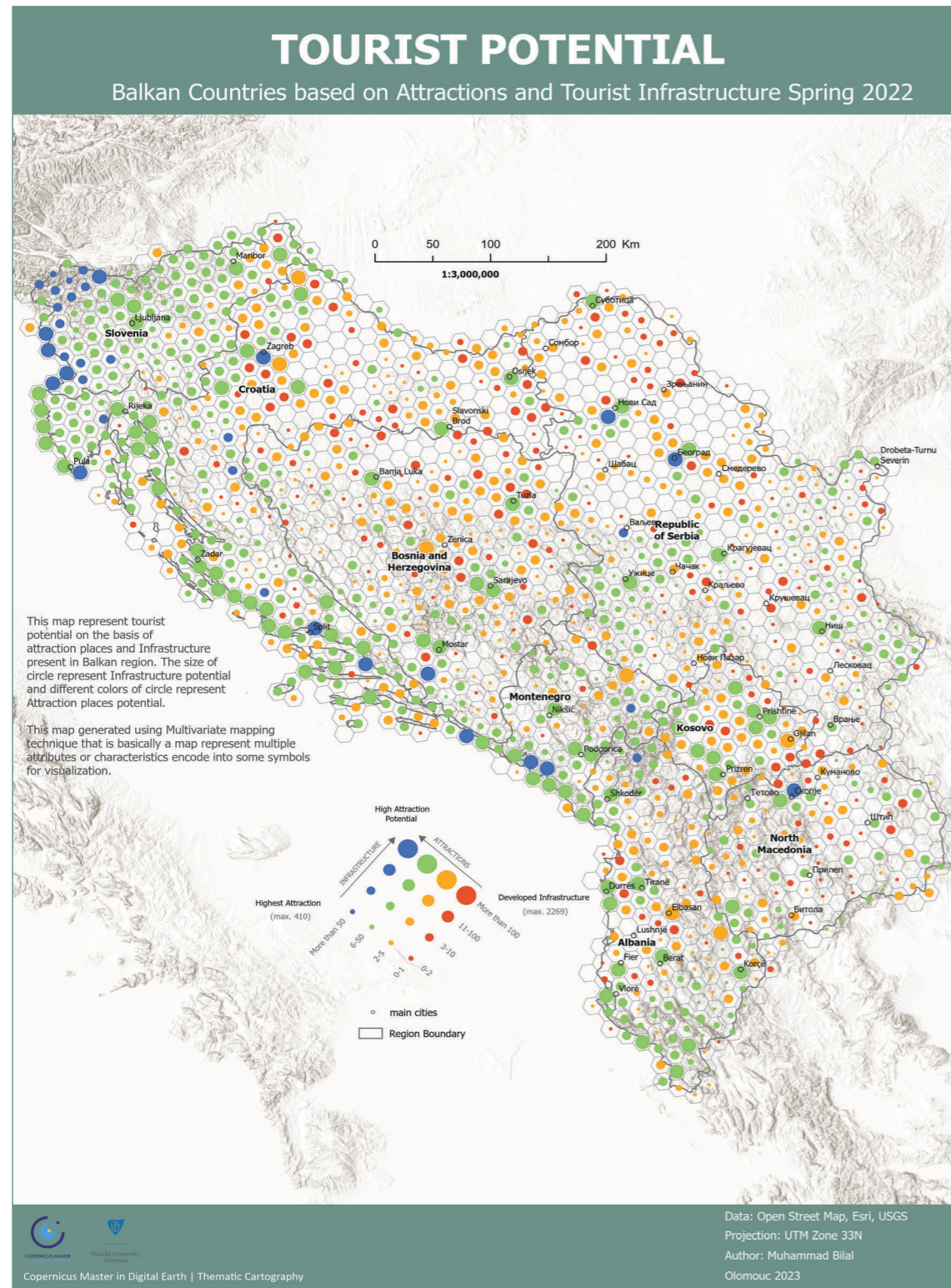
This map represent Internet Connection compared to Population Density in Czech Republic. The darker green color shows greater population and also the concentration of Internet connection is greater in those region. This map is created by using Wurman dots and choropleth method. The Wurman method is dot with graduating size in a regular grid of cells representing some phenomena and in the map that shows as Internet Connection. Choropleth method used graduated color schemes to represent some phenomena and in map it shows as population density.

Softwares that are used to make this map
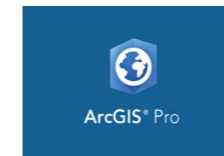
ArcGIS® Pro

ArcGIS Pro

MULTIVARIATE MAPPING

TOURIST POTENTIAL
Balkan Countries based on Attractions and Tourist Infrastructure Spring 2022

This map represent tourist potential on the basis of attraction places and Infrastructure present in Balkan region. The size of circle represent Infrastructure potential and different colors of circle represent Attraction places potential. This map generated using Multivariate mapping technique that is basically a map represent multiple attributes or characteristics encode into some symbols for visualization. This technique is powerful for visual interpretation of spatial patterns, particularly for comparing the spatial distribution of two or morepotentially related Indicators.

Softwares that are used to make this map
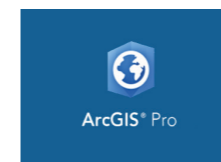
ArcGIS Pro

The map is designed in Thematic Cartography course using Multivariate method, Copernicus Master in Digital Earth, 2023