



มหาวิทยาลัยราชภัฏนครปฐม



7202304

Fundamentals of Geographic Information System



Chapter 6: Data Visualization

Learning Objectives

- Apply cartographic principles
- Use QGIS symbology tools
- Create thematic maps
- Design professional map layouts
- Export high-quality maps



Why Data Visualization Matters

Supports spatial decision-making

Reveals patterns and trends

Improves communication

Transforms raw data into insight



Types of Thematic Maps

Choropleth (Graduated Color)

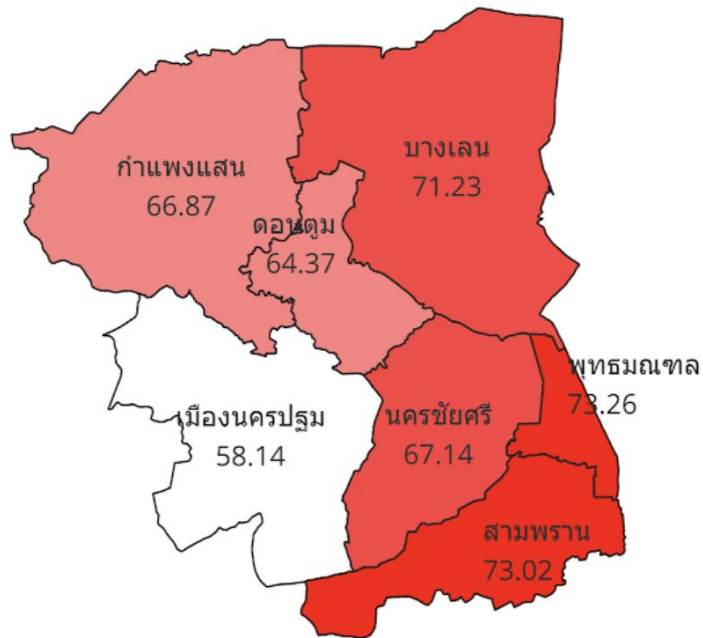
Categorized Map

Proportional Symbol Map

Heatmap



Choropleth Map



Used for numeric data

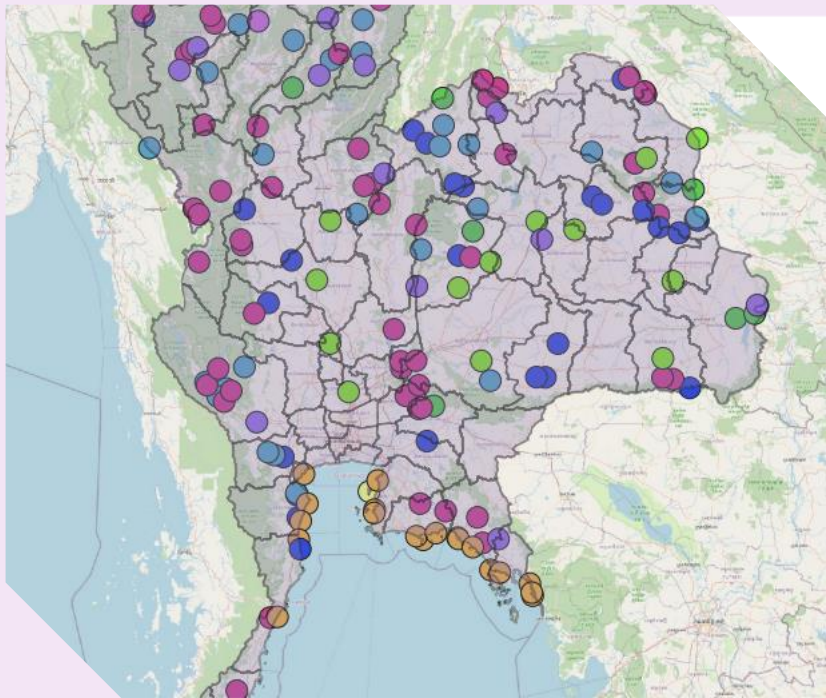
Color intensity represents value

Examples: population density, rainfall

Requires proper classification method



Categorized Map



Used for qualitative data

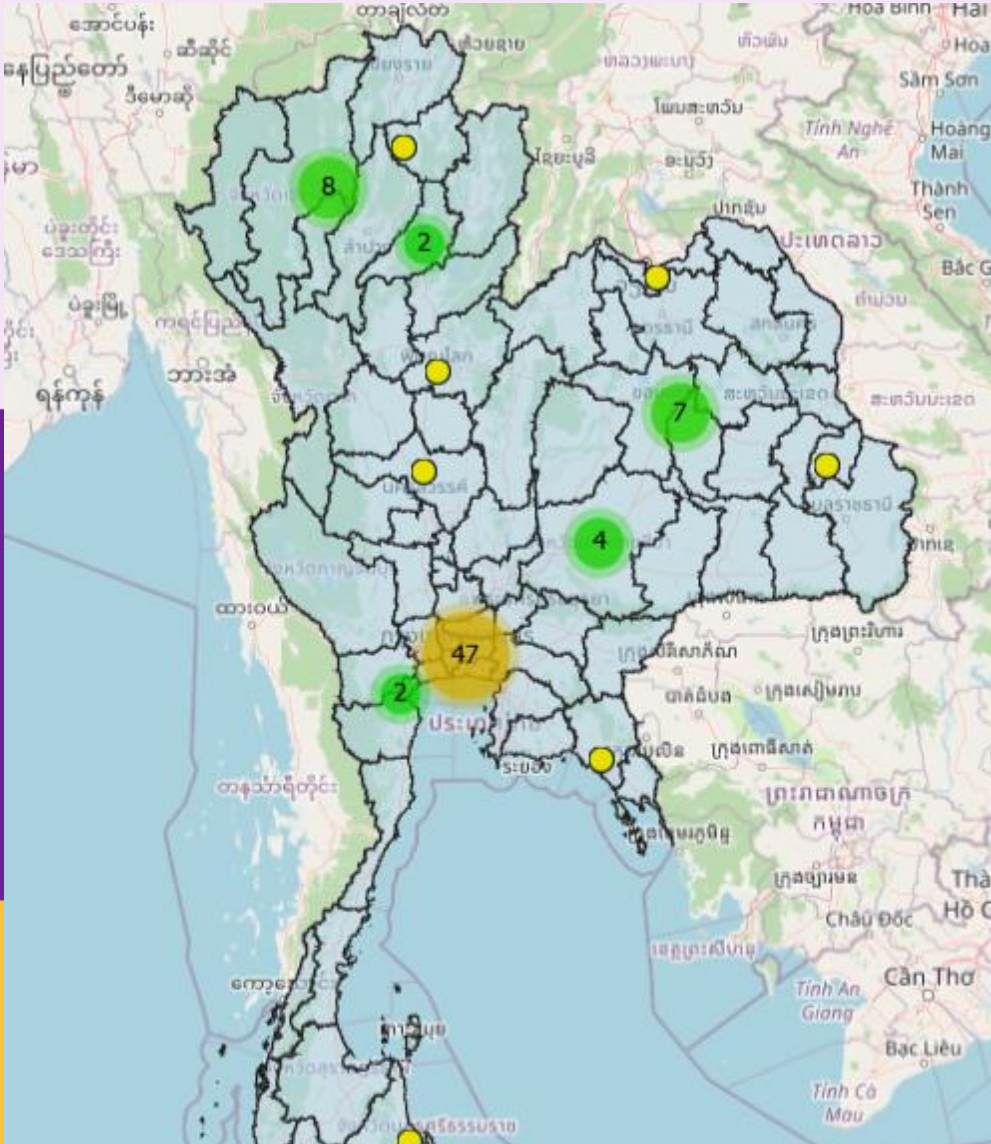
Each category has distinct color

Examples: land use, soil type

No numeric classification required



Proportional Symbol Map



Symbol size represents magnitude
Used for counts or totals
Examples: population, sales volume
Avoid symbol overlap



Symbology in QGIS

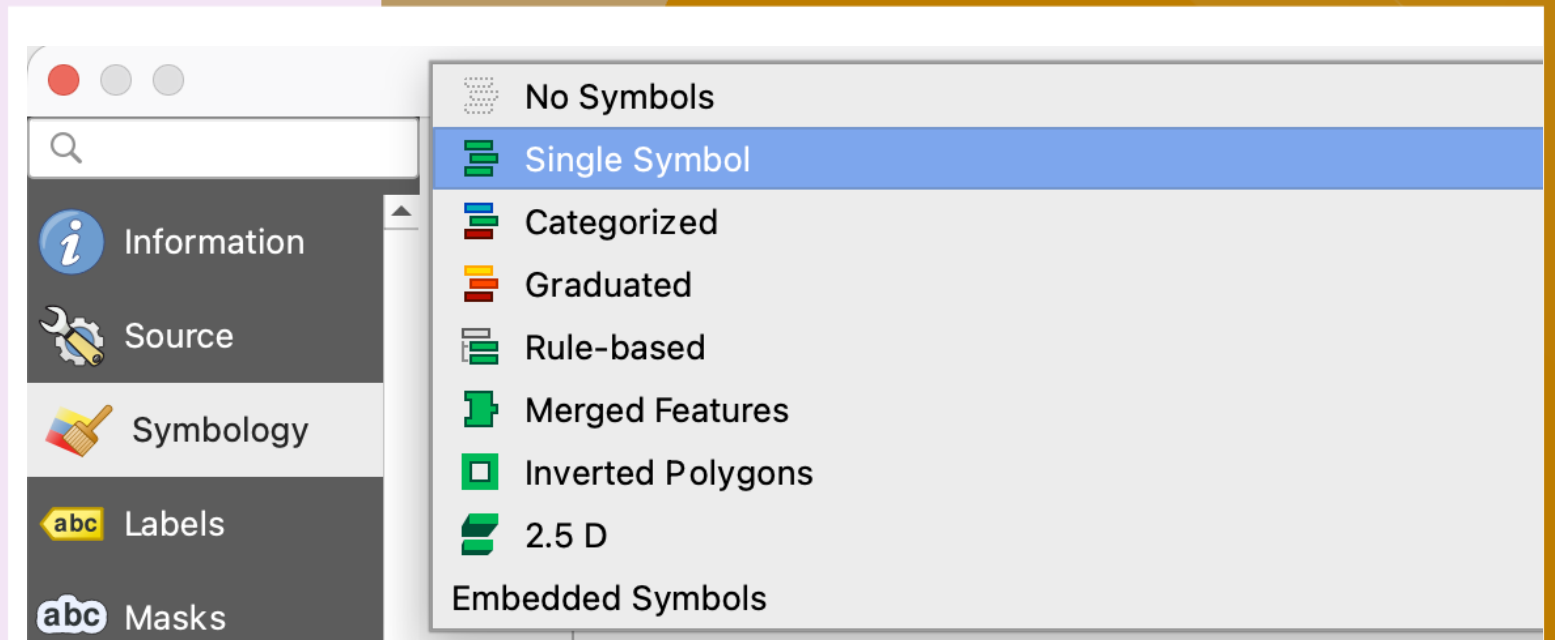
Single Symbol

Categorized

Graduated

Rule-based

Heatmap





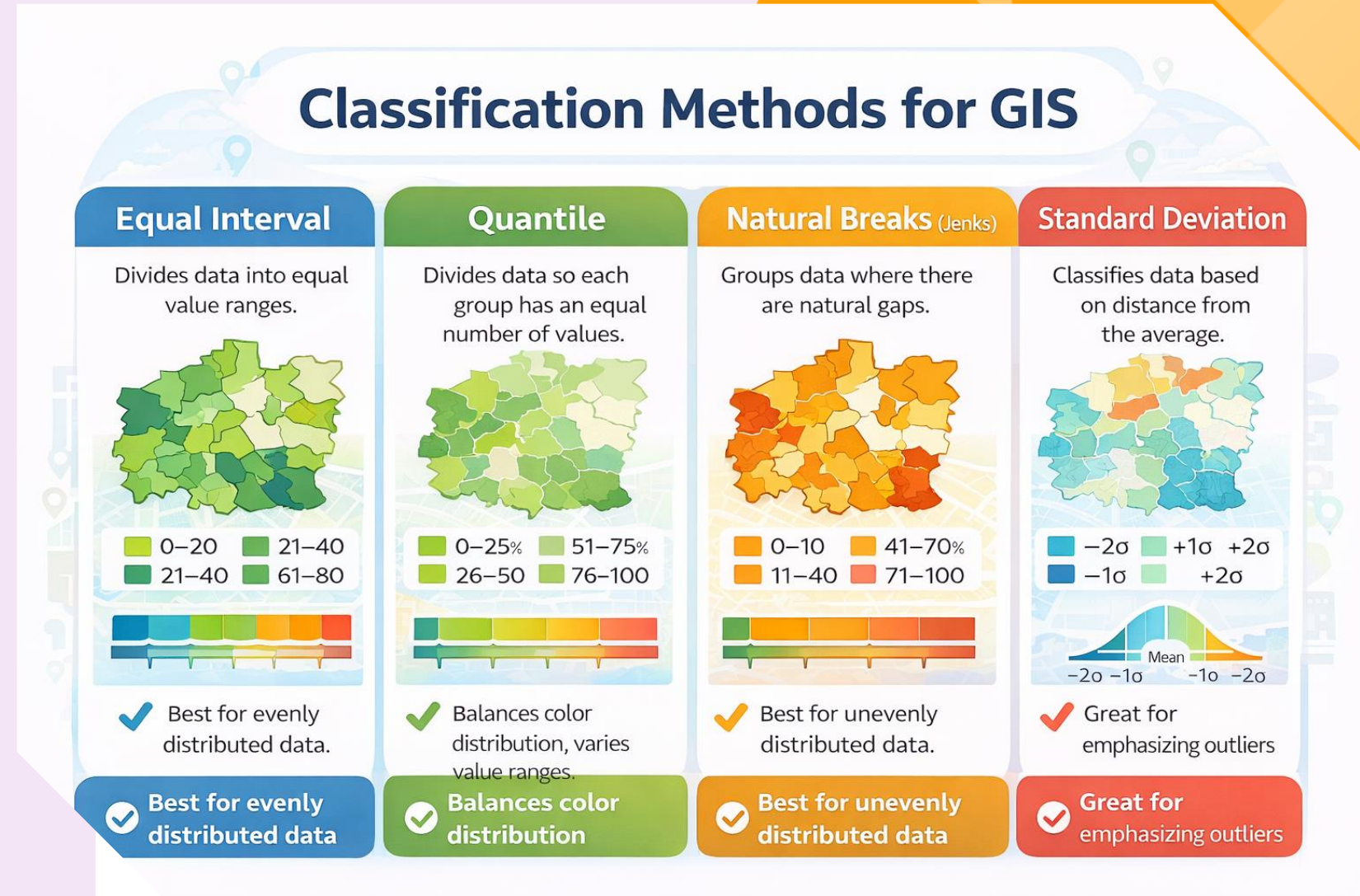
Classification Methods

Equal Interval

Quantile

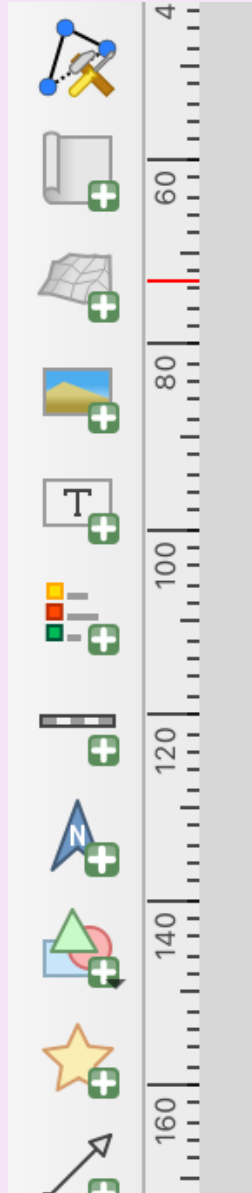
Natural Breaks (Jenks)

Standard Deviation





Essential Map Elements



Title

Legend

Scale Bar

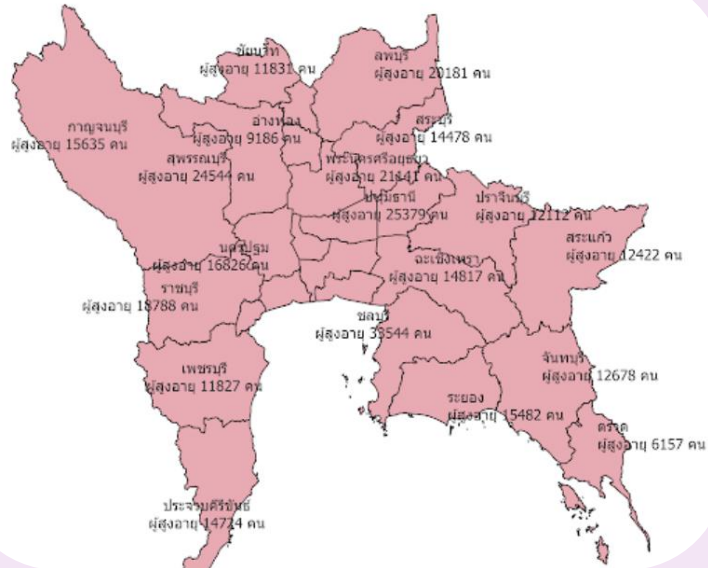
North Arrow

Data Source

CRS Information



Visual Hierarchy Principles



Use contrast effectively

Limit color usage

Apply readable fonts

Maintain spacing and balance



QGIS Layout and Export

Project → New Print Layout

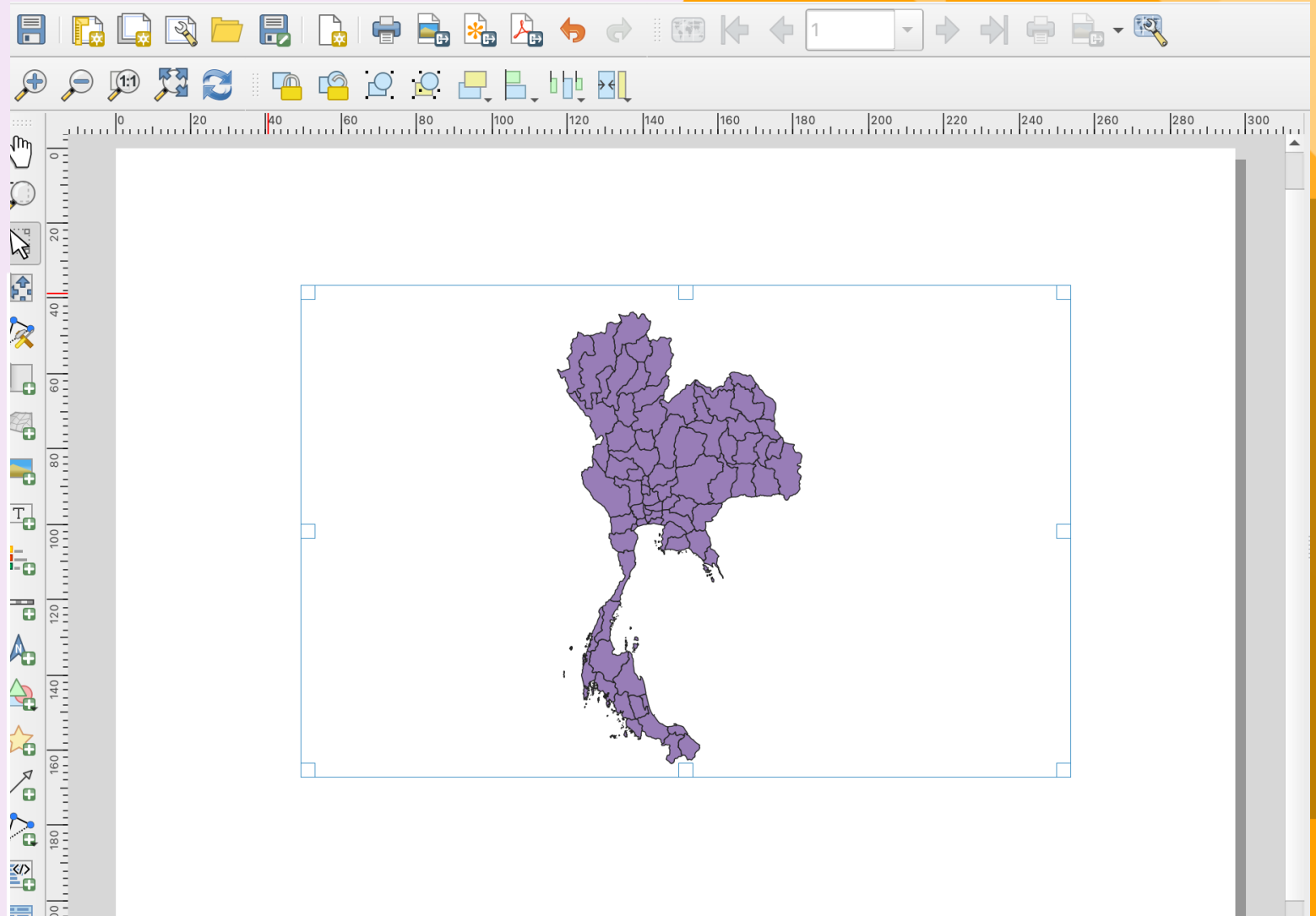
Add Map

Insert Legend

Add Scale Bar &

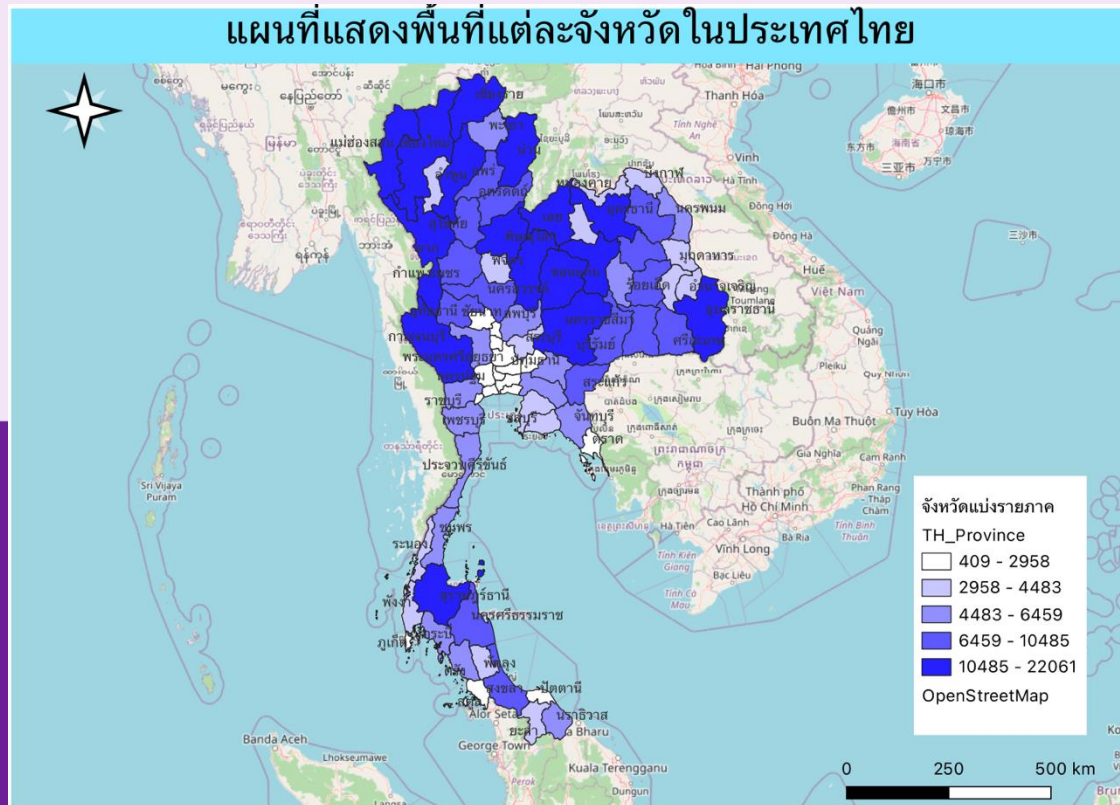
North Arrow

Export as PDF or PNG





Lab Activity (60 Minutes)



Create choropleth map (Population)

Create categorized land-use map

Design professional layout

Export final map as PDF



Assessment Criteria

Correct symbology selection

Appropriate classification method

Complete layout elements

Clear explanation of choices



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