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## Lab 2: Geographic data in GIS - display

**Due : Oct 9th @ 11 :30 am**

*(No late submissions will be accepted without a valid reason (eg. illness with Dr's note))*

### Objective

The objective of this lab is to introduce students to the different steps in creating thematic maps in ArcMap. The lab will allow the student to learn how to change colours, symbols, number of classes, legends, and more! The student will acquire experience in the esthetics of map creation and data representation.

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### Step 1 – Start ArcMap

- Start ArcMap. In ArcCatalogue, go to the folder containing the data (S:\GEG2320A00\Fall2017\_Oliva\). Copy the folder Lab2 to the C:\ (desktop).
- Add States.shp to a blank map.

### Map 1 - Mapping of a qualitative variable

- Change the appearance of the layer **States** as to have a different colour per state as per its **name** (qualitative variable).
- Label every state (note, use can use the abbreviation, look at the different rows in the attribute table).
- Complete the layout of the map (Title, scale, legend, north arrow).
- Export map (*File > export map...*) in jpeg (.jpg) and save somewhere safe to insert into your final report.

### Map 2 - Mapping of a quantitative variable

- Map the distribution of population per state (field **Pop1990** in the attribute table).
- Create 6 classes as per the classes below:
  - classe 1 (453588 à 2 000 000)
  - classe 2 (2 000 001 à 4 000 000)
  - classe 3 (4 000 001 à 9 000 000)
  - classe 4 (9 000 001 à 15 000 000)
  - classe 5 (15 000 001 à 22 000 000)
  - classe 6 (22 000 001 à 29 760 021)
- Complete the layout of the map (Title, scale, legend, north arrow).
- Export map (*File > export map...*) in jpeg (.jpg) and save somewhere safe to insert into your final report

### Map 3 - Mapping of an ordered variable

- Using the **Graduated Color** scheme, display in **three** classes the POP90\_SQMI. Under Classification, select Quantile and change to 3 classes. Change the name of the classes to **High density, medium density and low density**.
- Complete the layout of the map (Title, scale, legend, north arrow).
- Export map (*File > export map...*) in jpeg (.jpg) and save somewhere safe to insert into your final report.

### Map 4 - Display a phenomenon using dot density

- Illustrate the distribution of farms in the USA (field **No\_Farms87**). **Using dot density in the symbology tab, represent 1000 farms per dot.**
- Where is the highest density of farms in the USA?
- Complete the layout of the map (Title, scale, legend, north arrow).
- Export map (*File > export map...*) in jpeg (.jpg) and save somewhere safe to insert into your final report.

### Map 5 - Use of graduated symbols to illustrate a quantitative phenomenon

- Illustrate the population of each state using a symbol that varies in size as per the field **Pop\_1990** (*Symbology – Quantity*).
- Complete the layout of the map (Title, scale, legend, north arrow).
- Export map (*File > export map...*) in jpeg (.jpg) and save somewhere safe to insert into your final report.

### Map 6 - over 65

- Classify each state in **three** classes to see the **population over 65 years old** (ex : to see that the people over 65 years old in Maine is between 20 000 and 350 000).
- Complete the layout of the map (Title, scale, legend, north arrow).
- Export map (*File > export map...*) in jpeg (.jpg) and save somewhere safe to insert into your final report.

### Final : Upload your report

Upload your final report (including all maps and steps) to Virtual Campus under the proper assignment. (**Name it Lab2\_Lastname\_Student#.docx**)

Your final report (in .docx or .pdf) will include :

Detailed description of each step during map production: (5 pts per map) = \_\_\_\_ / 30

6 Maps (10 pts per map) : \_\_\_\_ / 60