Making Your Maps Work For You

You've got some geographic data so now what?

Minnesota GIS/LIS Consortium Educators Day

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Abstract

Your students have developed a plan, collected data, and completed some basic analysis. What's next? Join this session to learn some tips, tricks, and ideas to visualize and present geographic data. Get your students to start thinking about how they can get geographic data working to answer questions and start purposing solutions.

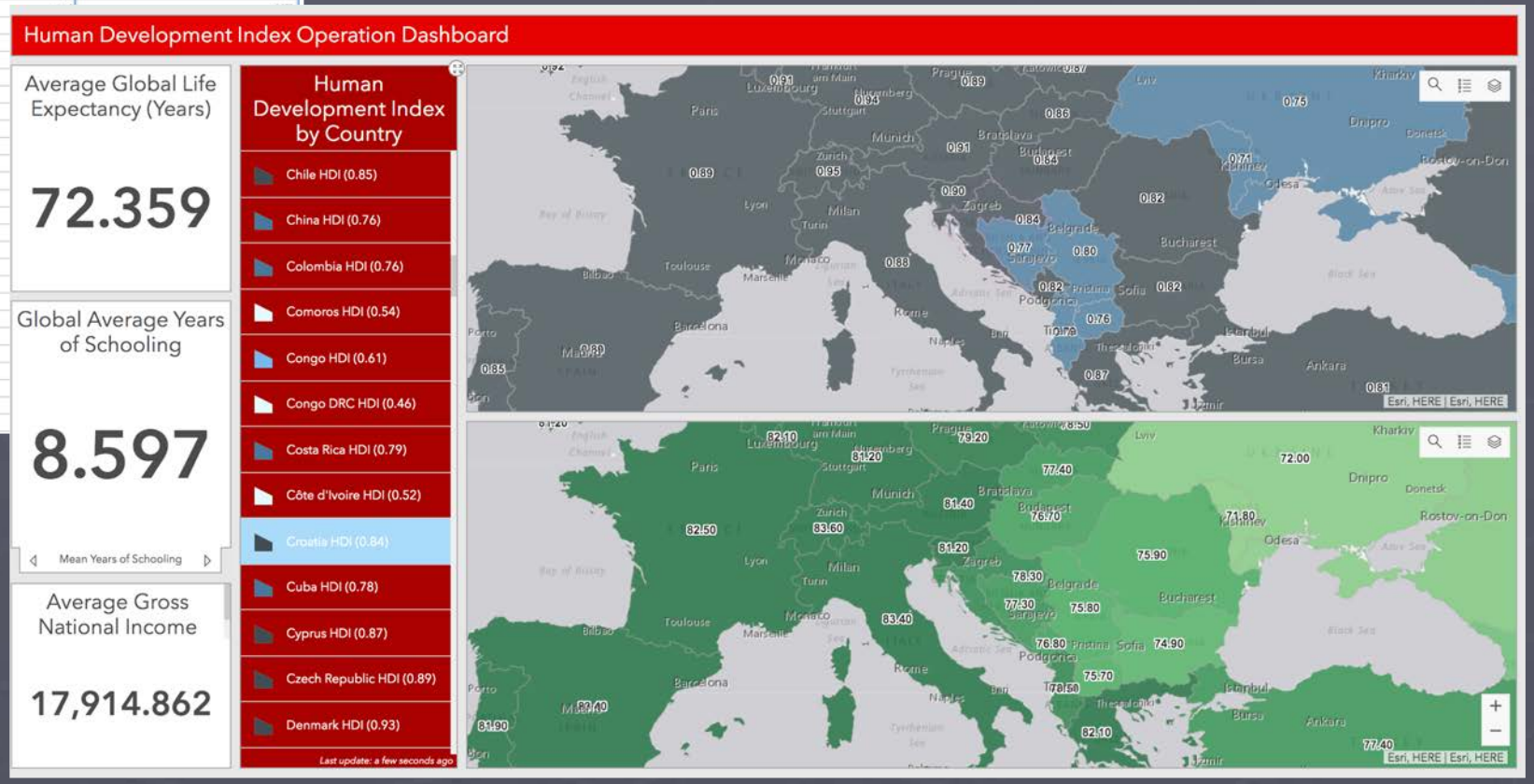
Session Objectives

- Give participants how an idea of how they can get students to communicate geographic ideas using geospatial technologies
  - Demonstrate how to do table joins to create new layers of Data in ArcGIS
  - Demonstrate how ArcGIS Dashboards can be used to create dynamic displays of geographic information in a interactive manner
- Demystify geospatial data visualization processes to encourage participants to incorporate them into their own classrooms

Taking Data and Making it Work

country name	country Join	Human development index (HDI) (Insex Value)	Life expectancy at birth (years)	Expected years of schooling (years)	Mean years of schooling (years)	Gross national income (GNI) per capita (2011 PPP $)
Afghanistan	Afghanistan	0.496	64.5	10.1	3.9	1,746
Albania	Albania	0.791	78.5	15.2	10.1	12,300
Algeria	Algeria	0.759	76.7	14.7	8	13,639
Andorra	Andorra	0.857	81.8	13.3	10.2	48,641
Angola	Angola	0.574	60.8	11.8	5.1	5,555
Antigua and Barbuda	Antigua and Barbuda	0.776	76.9	12.5	9.3	22,201
Argentina	Argentina	0.83	76.5	17.6	10.6	17,611
Armenia	Armenia	0.76	74.9	13.2		
Australia	Australia	0.938	83.3	22.1		
Austria	Austria	0.914	81.4	16.3		
Azerbaijan	Azerbaijan	0.754	72.9	12.4		
Bahamas	Bahamas	0.805	73.8	12.8		
Bahrain	Bahrain	0.838	77.2	15.3		
Bangladesh	Bangladesh	0.614	72.3	11.2		
Barbados	Barbados	0.813	79.1	15.2		
Belarus	Belarus	0.817	74.6	15.4		
Belgium	Belgium	0.919	81.5	19.7		
Belize	Belize	0.72	74.5	13.1		
Benin	Benin	0.52	61.5	12.6		
Bhutan	Bhutan	0.617	71.5	12.1		
Bolivia	Bolivia	0.703	71.2	14		
Bosnia-Herzegovina	Bosnia and Herzegovina	0.769	77.3	13.8		
Botswana	Botswana	0.728	69.3	12.7		
Brazil	Brazil	0.761	75.7	15.4		
Brunei	Brunei	0.845	75.7	14.4		
Bulgaria	Bulgaria	0.816	74.9	14.8		
Burkina Faso	Burkina Faso	0.434	61.2	8.9		
Burundi	Burundi	0.423	61.2	11.3		
Cape Verde	Cabo Verde	0.651	72.8	11.9		
Cambodia	Cambodia	0.581	69.6	11.3		
Cameroon	Cameroon	0.563	58.9	12.7		
Canada	Canada	0.922	82.3	16.1		

Getting Data to communicate for you!



Demonstration 1: How to do a Location Join with a Table of Data

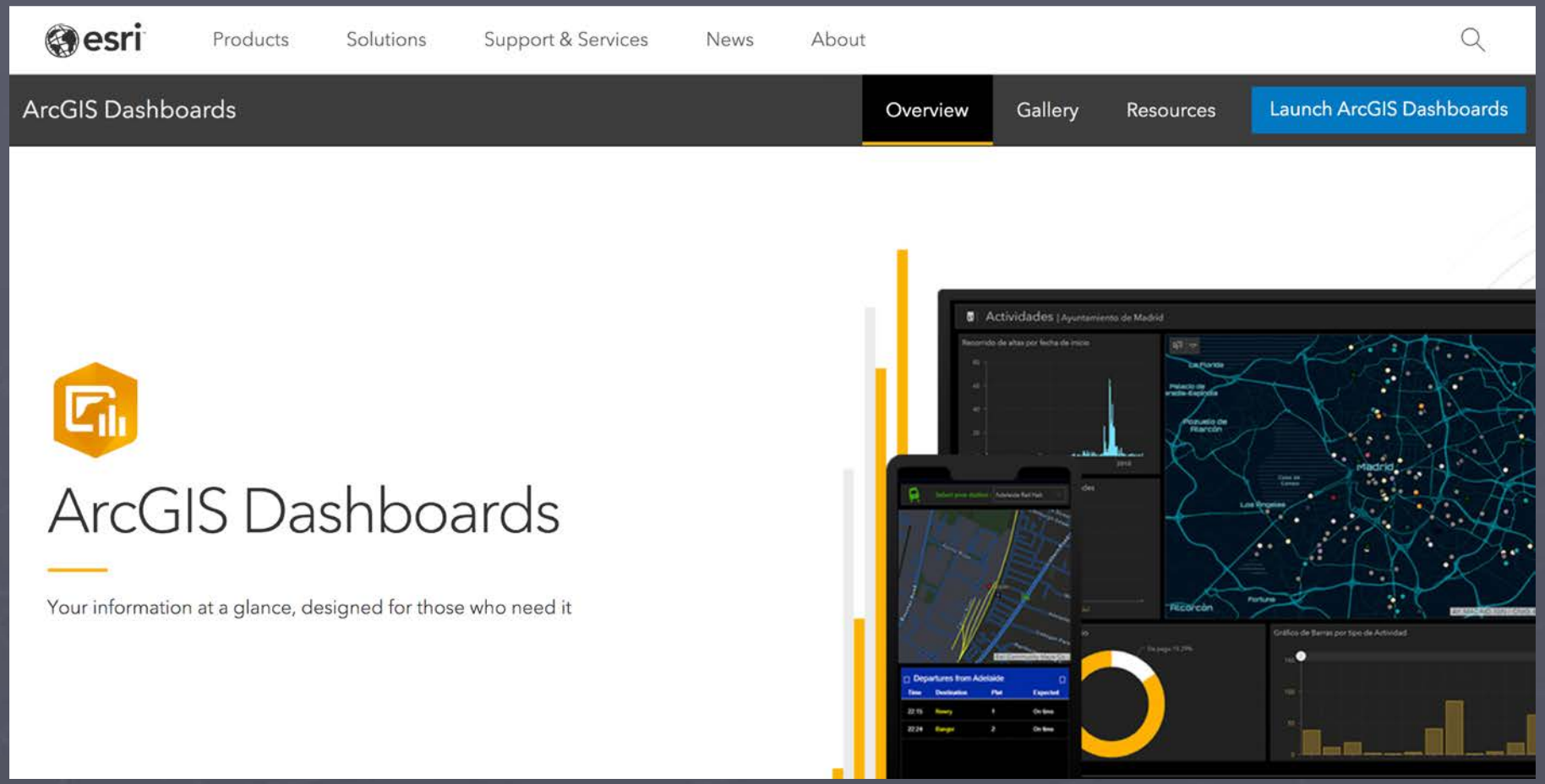
Instructions

- In my content select that you would like to add from your computer
  - Select the file and add (fill out any needed information in the pop-up menu)
- Open the layer in a map
- Add the layer *World Countries (Generalized)* from the ArcGIS Library
- In the analysis menu choose *Join Features* from the *Summarize Data* Drop-down list.
- In the types of Join specify the fields to join that will match up between layers
- Make sure you specify a descriptive name to the new layer which you will be creating by completing the join

Important Pieces to Consider

- Naming conventions need to match up between source and target layer
- Make sure you uncheck the box that restricts analysis to visible area.
- When adding the layer to your contents ensure you have appropriate scale

Esri's ArcGIS Operations Dashboard

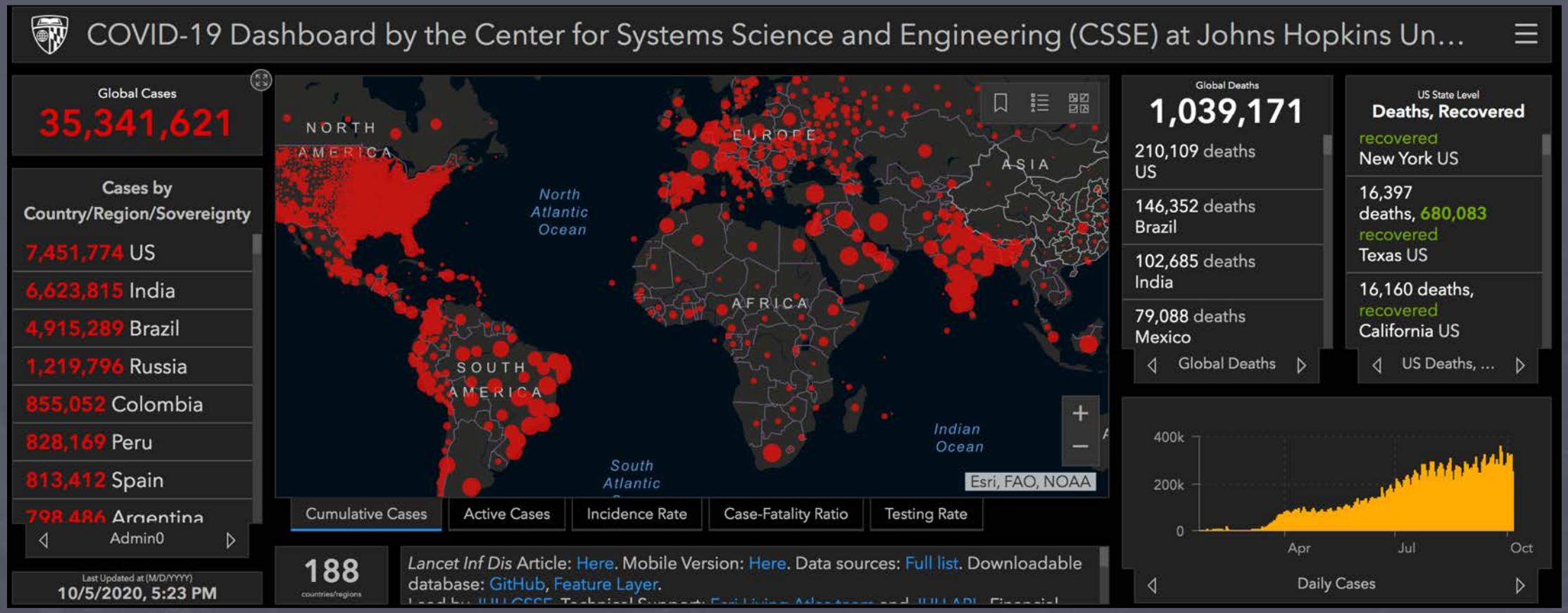


https://www.esri.com/en-us/arcgis/products/arcgis-dashboards/overview

Demonstration 2: Building an ArcGIS Operations Dashboard

- https://www.esri.com/en-us/arcgis/products/arcgis-dashboards/overview
- Login Using your normal Esri credentials
- The type of dashboard you can create depends on the data you have available
  - Dashboards rely on metadata and pre-made layers
- As with storymaps the core content of your dashboard should be a map

Using ArcGIS to communicate real-time data



https://coronavirus.jhu.edu/map.html

Suggestions for Using Operations Dashboards

- Incorporate dashboards into a story board in which students collect their own data
  - Dashboards can be a great way to get students analyzing relationships and determining action pieces
- Can be used in one off activities to examine topics where there is available data (ie. demographics, agriculture, industry, etc..)
  - Consider using the CIA World Factbook or Population Reference Bureau to have students compile data
- Dashboards should always be seen as a way to communicate multiple levels of authentic data in interactive ways
- Consider scale – at what level can you examine a topic and is there data available or do students need to collect data?

Questions? Comments? Concerns? Compliments? Cries of Outrage?

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Further Suggestions:

- Teaching with Storyboards and Dashboards ow.ly/W8o150BMyJr
- Connect with a Geomentor
- Sign up for the National Geographic Geoinquiry PD
  - https://www.nationalgeographic.org/education/professional-development/
- Play around with the software and see what you can come up with!