

Lab – Explore Sources of Open Data

Objectives

Explore the different websites that provide openly available data.

Part 1: Open Government Partnership

Part 2: Open Data Websites

Part 3: Data Visualization

Background/Scenario

Immeasurable amounts of data have been generated and stored. Data is useful only if it can be used to generate new knowledge. When data is made freely available for others to use, without intellectual property restrictions, this data is considered open data. Open data may require attribution to the original source. Derivations from the original work can also be designated as open data.

In this lab, you will explore several sources of open data. You will also explore the data visualization capability available on these websites to create insights based on facts.

Required Resources

- PC or mobile device with Internet access

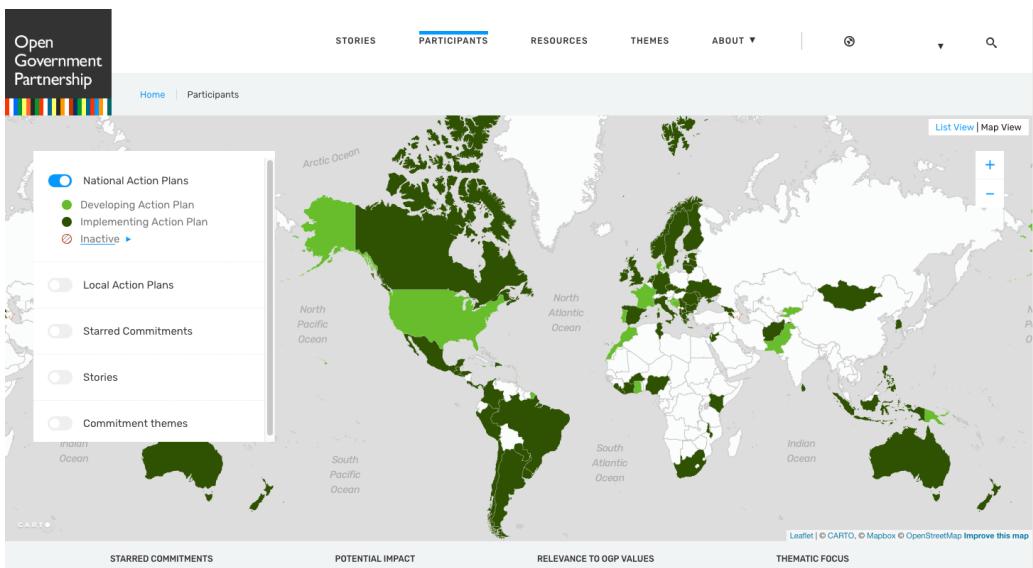
Part 1: Open Government Partnership

The Open Government Partnership (OGP) was launched in 2011. The goal of the partnership is to create an international platform to create more open, accountable, and responsive governments for their citizens.

- a. Navigate to www.opengovpartnership.org/ to find more information about OGP. (The photo you will see may vary.)
- b. Click **Participants** at the top center of the screen.



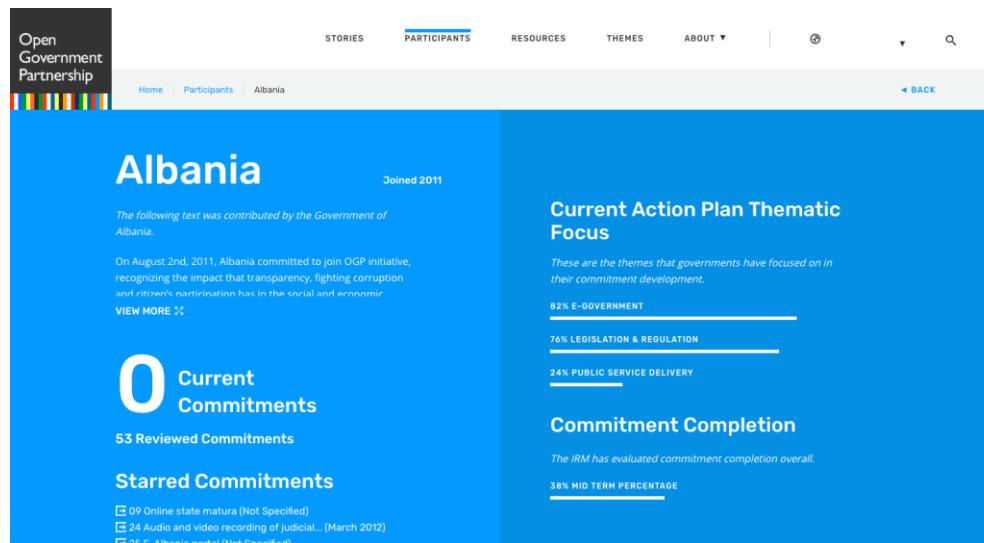
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List several countries that participate in the OGP.

Canada, United States, Israel, Panama, New Zealand, Australia, Brazil, Italy, Croatia, Denmark, Colombia, Jamaica, Ireland, United Kingdom, Finland, France

- c. Select a country using the map or the list at the bottom of the page to view information about that country's participation in open data. Using Albania as an example, a page displays an overview of the country's journey to join OGP. There are also many links to information regarding the country's move toward a more open government.



- d. The top of the page includes an overview of this country's participation in the OGP. Scroll down the page to see additional information including Action Plans and Reports. Click **People involved from Albania** (or your selected country) to see a list of the people who are involved from this country.
- e. Click **Resources** at the top of the screen. This page allows you to see information relevant to who you are and what your interest is.

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The screenshot shows the 'Resources' section of the Open Government Partnership website. At the top, there's a navigation bar with links for 'STORIES', 'PARTICIPANTS', 'RESOURCES' (which is underlined in blue), 'THEMES', and 'ABOUT'. Below the navigation, there's a search bar and a 'site search' link. The main content area is titled 'Resources' and contains a sub-instruction: 'Find OGP material relevant to your position and interests. Choose from Government, Civil Society, Researcher, Journalist, or Donor below for a full listing of useful tools and guidance, data and research, and general information documents. Or use the site search to find specific items.' Below this, there are six blue rectangular boxes arranged in a 2x3 grid, each representing a user type: 'GOVERNMENT / LEGISLATURE', 'CIVIL SOCIETY', 'RESEARCHER' in the top row; and 'JOURNALIST', 'DONOR', 'ALL RESOURCES' in the bottom row.

- f. Select **All Resources** (blue box). On the All Resources page, select **Data and Research** (below the All Resources heading). You will receive a variety of information. Select one of the case studies, for example **Case Study (2014): Encouraging Parents' engagement in Public Education Reform in Mexico**.
- g. Read the overview of the case study and then click the link below to see additional information.

The screenshot shows a specific case study page. At the top, it has the same navigation bar as the previous page. The main title is 'Case Study (2014): Encouraging parents' engagement in public education reform in Mexico', dated '01 JANUARY 2014'. Below the title, there's a detailed description of the study: 'Mexico's membership to OGP opened the gateway to negotiating with the education authorities to provide data. IMCO acquired databases on standardized test results and active teaching spaces, and cross-referenced them with basic data on the schools. Mejora tu Escuela covers all public and private schools from elementary to high school level and has four main tools: (1) Know your school which lets people search for a school by name or geographic location and reveals the quality of education as well as a state ranking based on test results (2) Compare your school which allows comparisons with other schools by educational quality, state and national ranking, performance over time and performance of students (3) Grade your school which invites the community to shed light on the strengths and weaknesses of each school and (4) Improve your school which provides concrete tools and suggestions to parents on how to participate in addressing problems in their child's school.' At the bottom, there's a link: <https://drive.google.com/open?id=0B471uVfgLNMSIBIVFBLoXdWaTg>.

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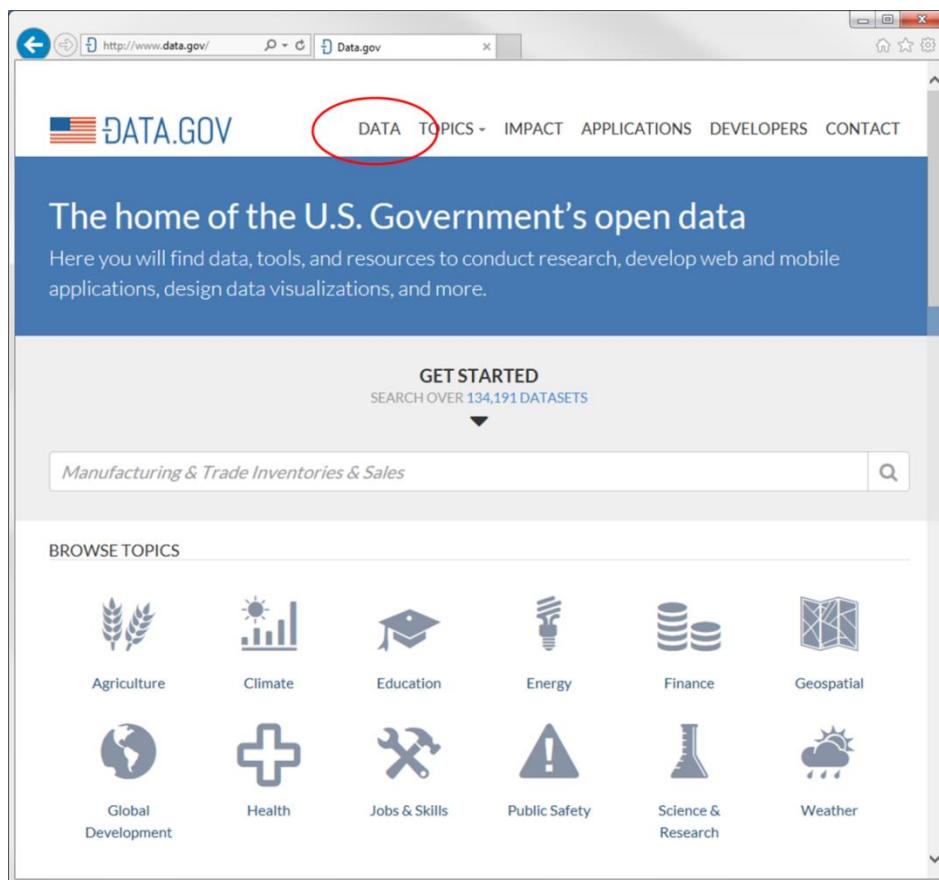
How can you as a citizen benefit from a more open government?

Open Government lets the public keep government accountable by allowing them to monitor how it operates. Furthermore, increased public participation can lead to better informed government policies, practices and decisions as well as more responsive, innovative and governance and services.

Part 2: Open Data Websites

Many organizations, such as governments, universities, businesses, and non-profit organizations publish their open data. Are you interested in data about weather, housing, or crime?

- a. Navigate to <http://www.data.gov>. This website is the home of the U.S. Government's open data. At this website, you can find data and resources about research, software development, and other projects related to data. From this website, you can also navigate to the original websites that provided the published information.
- b. Click **Data** at the top of the screen.



- c. How many datasets are available? 340757
- d. Explore an interesting dataset or different topic category. For example, you can filter by different categories. If you are only interested in the data provided by a city government, click **Data** at the top of the screen. Click **Local Government**. Scroll down the list until you locate **Organizational Types** on the left panel. Click **City Government**.

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The screenshot shows a web browser window with the URL <http://catalog.data.gov/dataset>. The search bar contains "Search for a Dataset - Data...". On the left, there's a sidebar for "Organization Types" with filters for "A-Z" and "1-9". The results list includes:

- Farmers Markets Geographic Data** (Federal) - Department of Agriculture - longitude and latitude, state, address, name, and zip code of Farmers Markets in the United States. Format: XLS.
- Climate Data Online (CDO)** (Federal) - National Oceanic and Atmospheric Administration, Department of Commerce - Climate Data online or CDO provides access to climate data products through a simple, searchable online web mapping service. Users can find a variety of NCDC... Format: HTML.
- Federal Logistics Information System Web Search (WebFLIS)** (Federal) - Department of Defense - Federal Logistics Information System Web Search (WebFLIS) provides essential information about supply items including the National Stock Number (NSN), the item...

- e. Click **Crimes – 2001 to present**. This dataset provides the crime statistics for the City of Chicago from 2001 to the present.

The screenshot shows a web browser window with the URL <http://catalog.data.gov/dataset>. The search bar contains "Datasets ordered by Popular". The sidebar includes filters for "Organization Types" (City Government selected) and "Topics" (Local Government selected). The results list shows:

5,539 datasets found

- Demographic Statistics By Zip Code** (383 recent views) - City of New York - Demographic statistics broken down by zip code. Format: CSV, RDF, JSON, XML.
- Crimes - 2001 to present** (308 recent views) - City of Chicago - This dataset reflects reported incidents of crime (with the exception of murders where data exists for each victim) that occurred in the City of Chicago from 2001 to... Format: CSV, RDF, JSON, XML.
- Crimes 2012-2015** (103 recent views) - City of Los Angeles - This is the combined raw crime data for 2012 through 2015. Currently, crime data is refreshed on an annual basis. However, we are exploring automated methods and... Format: CSV, RDF, JSON, XML.

- f. You can download this dataset by scrolling down to the Downloads and Resources section.

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What are the available downloadable file formats?

HTML, PDF, PNG, DATA

Downloads & Resources



Comma Separated Values File ↗ 11607 views

Download



RDF File ↗ 791 views

Download



JSON File ↗ 1739 views

Download



XML File ↗ 3153 views

Download



Landing Page

Visit page

Click the **Landing Page** link under Downloads and Resources section to navigate to the City of Chicago's Data Portal for the Crimes – 2001 to present page.

The screenshot shows a data portal interface for the City of Chicago. At the top, there is a navigation bar with links for Home, About, Help, Status Blog, Developers, Terms of Use, City of Chicago, Sign Up, and Sign In. Below the navigation bar is a search bar labeled "Find in this Dataset". The main content area displays a table of crime data. The table has columns for ID, Case Number, Date, Block, IUCR, Primary Type, Description, and Location Description. The data shows various crime types such as Burglary, Criminal Damage, and Assault across different locations like Apartment, Street, and Sidewalk. The table includes 8 rows of data, each with a unique ID and timestamp.

ID	Case Number	Date	Block	IUCR	Primary Type	Description	Location Description
1	10828786	JA130133	01/25/2017 11:59:00 PM	001XX N LOREL AVE	0650	BURGLARY	HOME INVASION
2	10828726	JA130126	01/25/2017 11:50:00 PM	044XX W WRIGHTWOOD AVE	1320	CRIMINAL DAMAGE	TO VEHICLE
3	10828660	JA130119	01/25/2017 11:50:00 PM	052XX W NORTH AVE	0486	BATTERY	DOMESTIC BATTERY SIMPLE
4	10828716	JA130130	01/25/2017 11:45:00 PM	057XX S MARSHFIELD AVE	0479	BATTERY	AGG. HANDS/FIST/FEET SERIOUS INJURY
5	10828727	JA130125	01/25/2017 11:40:00 PM	022XX W MONROE ST	1310	CRIMINAL DAMAGE	TO PROPERTY
6	10830381	JA130541	01/25/2017 11:40:00 PM	024XX W 47TH ST	0610	BURGLARY	FORCIBLE ENTRY
7	10828657	JA130115	01/25/2017 11:35:00 PM	063XX S ARTESIAN AVE	0560	ASSAULT	SIMPLE
8	10828747	JA130141	01/25/2017 11:35:00 PM	081XX S DREXEL AVE	0486	BATTERY	DOMESTIC BATTERY SIMPLE

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- g. On this page, you can view the crime data for the City of Chicago from 2001 to the present without downloading the data. You can also view a portion of this data on a map. Click **City of Chicago** at the top of the page to navigate to the list of datasets available from the City of Chicago Data Portal. Under View Types, click **Maps**.

The screenshot shows the City of Chicago Data Portal homepage. It features a navigation bar with links to Home, About, Help, Status Blog, Developers, Terms of Use, City of Chicago, Sign Up, and Sign In. Below the navigation is a grid of four cards: 'Array of Things Locations' (a map of Chicago with sensor nodes), 'Chicago Taxi Trips' (a map of taxi trips), '2017 Chicago Budget' (a chart of the budget), and 'Crimes - 2001 to present' (a map of crime locations). To the left is a sidebar with a search bar, 'View Types' (Data Lens pages, Datasets, Charts, Maps, Calendars, Filtered Views, External Datasets, Files and Documents, Forms), and 'Categories' (Administration & Finance, Buildings, Community & Economic Development, Education, Environment & Sustainable Development). The main content area is titled 'Search & Browse Datasets and Views' and shows a list of datasets with columns for Name, Description, Type, Views, Popularity, and Type. The 'Crimes - 2001 to present' dataset is highlighted.

Name	Description	Type	Views	Popularity	Type
1. Beach Weather Stations - Automated Sensors - 2016 - Humidity	Parks & Recreation beaches, parks, chicago park district, open spaces, ...		515,165	515,165 views	
2. Crimes - 2001 to present - Dashboard	Public Safety This dataset reflects reported incidents of crime (with the exception of murders where data exists for each victim) that occurred in the City of Chicago from 2001 to present.		470,006	470,006 views	
3. Lobbyist Data - Historical - Lobbyist Registry - 2010	Ethics lobbyists, historical All lobbyist registration filings submitted to the Board of Ethics during the 2010 reporting period. / All lobbyists must register with the City of Chicago Board of Ethics		368,297	368,297 views	
4. Current Employee Names, Salaries, and Position Titles	Administration & Finance personnel This dataset is a listing of all current City of Chicago employees, complete with full names, departments, positions, and annual salaries. For hourly employees the average salary is calculated.		804,952	804,952 views	
5. Performance Metrics - Streets & Sanitation - Graffiti Removal	Administration & Finance performance metrics, service delivery, graffiti The Department of Streets & Sanitation's (DSS) Graffiti Blasters crews offer a vandalism removal service to private property owners. This metric tracks the average number of graffiti removals per month.		206,302	206,302 views	
6. Small Business Improvement Fund (SBIF) Grant Agreements	Community & Economic Development sbif, sustainability Small Business Improvement Fund (SBIF) program grants made since 2001. SBIF uses Tax Increment Financing (TIF) revenues to help owners of commercial and residential properties finance improvements to their buildings.		193,010	193,010 views	
7. Building Permits	Buildings permits Permits issued by the Department of Buildings in the City of Chicago from 2006 to the present. The dataset for each year contains more than 65,000 records/rows.		371,650	371,650 views	
8. Crimes - 2001 to present	Public Safety crime, police This dataset reflects reported incidents of crime (with the exception of murders where data exists for each victim) that occurred in the City of Chicago from 2001 to present.		287,094	287,094 views	

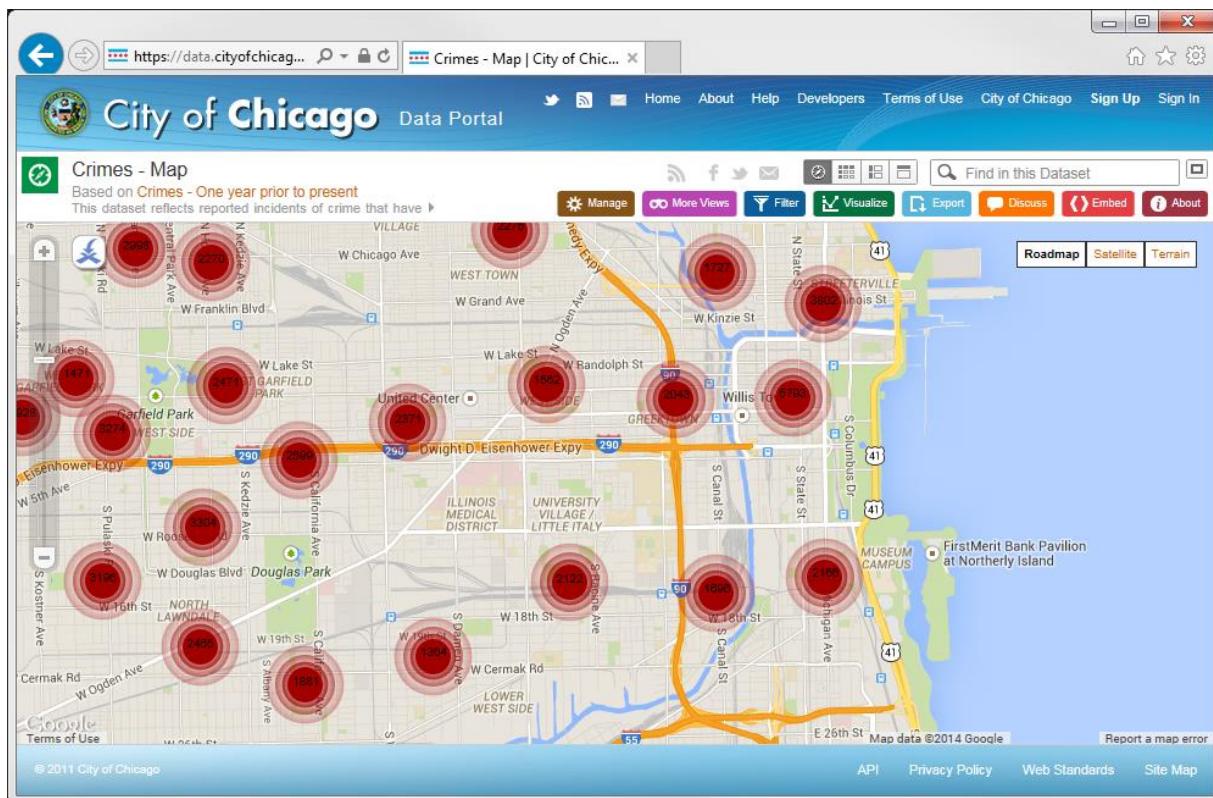
- h. Under **View Types** in the left panel, click **Maps** to display a list of maps. Click the dataset titled **Crimes – Map**. This presents an interactive map of the Chicago area with crime locations for the past year.

The screenshot shows the City of Chicago Data Portal with the 'Maps' view selected. The main content area is titled 'Results matching type of Maps' and displays a list of datasets with columns for Name, Description, Type, Views, Popularity, and Type. The 'Crimes – Map' dataset is highlighted.

Name	Description	Type	Views	Popularity	Type
1. Crimes – Map	Public Safety crime, police This dataset reflects reported incidents of crime that have occurred in the City of Chicago over the past year, minus the most recent seven days of data. Data is estimated.		220,837	220,837 views	
2. Boundaries - Community Areas (current)	Facilities & Geographic Boundaries gis, boundaries, shapefiles, kml, kmz Current community area boundaries in Chicago. The data can be viewed on the Chicago Data Portal with a web browser. However, to view or use the files outside of the portal, you will need to download them and use a GIS application.		54,645	54,645 views	
3. Problem Landlord List - Map	Buildings buildings, violations This list describes landlords and property owners who are designated "problem landlords". Landlords on this list have had two or more administrative hearings against them for violating city laws.		187,900	187,900 views	
4. Building Code Scofflaw List - Map	Buildings scofflaw, buildings, violations The Chicago Building Scofflaw Ordinance (Section 2-92-416 of the Municipal Code of Chicago) is designed to prevent landlords that refuse or refrain from correctly maintaining their buildings.		97,695	97,695 views	
5. CTA - System Information - Map Showing Bus Stop Shelters in Digital Sign Project	Transportation cta, bus, sustainability, transportation This dataset shows CTA Bus Stop shelters which are slated to have digital signs added to them to show upcoming arrivals. The listing is subject to change.		40,594	40,594 views	
6. Police Stations - Map	Public Safety facilities, gis Police station locations in Chicago		55,385	55,385 views	

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- i. Click dataset titled **Crimes – Map**. This presents an interactive map of the Chicago area with crime locations for the past year. You can explore the crime locations by clicking the red dots or zooming in using the scroll bar on the left.



- j. If you are interested in other organizational data, you can navigate back to <http://www.data.gov> and search for other topics. Similar websites for other countries can be found by searching on the Internet. For example:
 - Australia: <http://data.gov.au>
 - U.K.: <http://data.gov.uk>
 - Canada: <http://data.gc.ca>

Part 3: Data Visualization

Data visualization can help you make sense of lists of numbers and present the lists of numbers in a meaningful way. Visualization can help you “see” trends that may be otherwise missed.

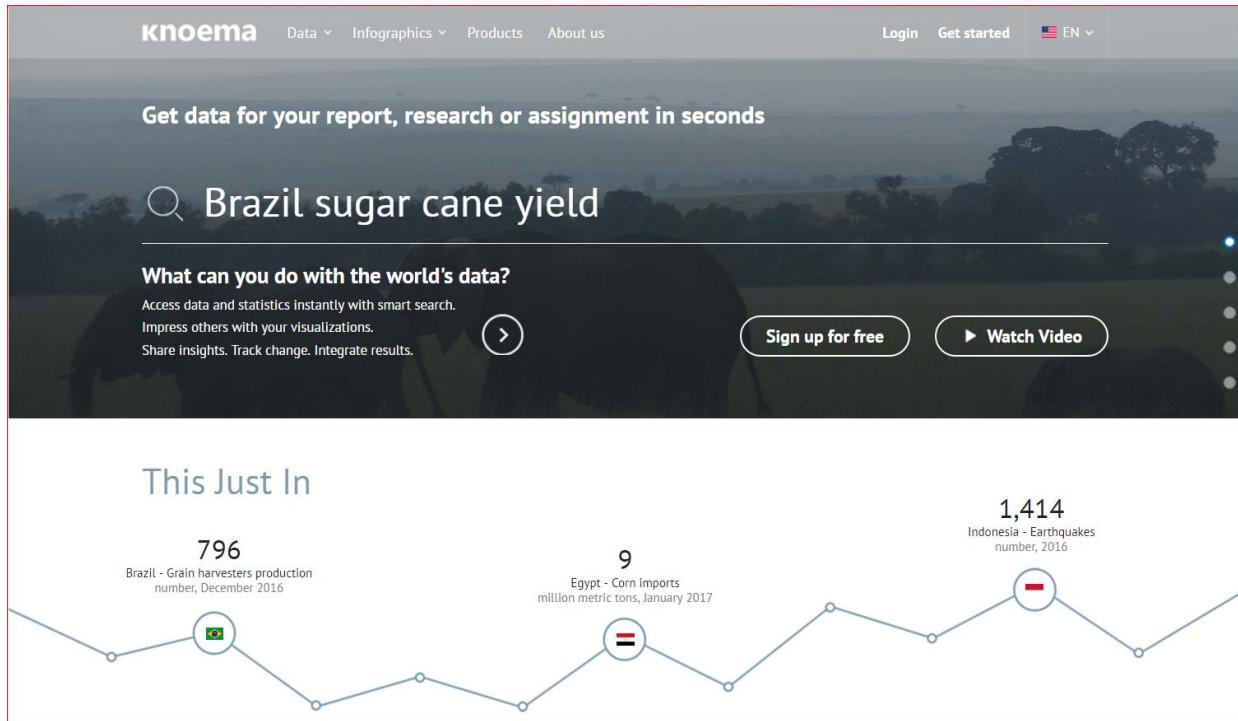
There are websites that provide data visualization for you. You will explore data visualization using the graphics provided on these two websites: www.knoema.com and www.gapminder.org.

Step 1: Explore knoema

At www.knoema.com, you can find many ways to graphically represent statistical data.

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- a. At the home page, scroll down. A list of different topics displays, such as This Just In, and Viz of the day. Scroll down the page to view many more topics that you can explore.



- b. What is the topic for Viz of the day?

Not Available

- c. Click the title and explore the issues and the different graphs available to you.

Name the data sources.

Not Available

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- d. At the top of the page, click the **down arrow** next to **Data**. Click **World Data Atlas**. From here, or from any category, you can explore the variety of data available to you.

The screenshot shows the Knoema World Data Atlas homepage. At the top, there is a navigation bar with links for Data, Infographics, Products, About us, a search bar, Login, Get started, and a language switcher (EN). The main title "World Data Atlas" is prominently displayed, followed by the subtitle "World and regional statistics, national data, maps, rankings". Below this, three circular statistics are shown: timeseries (2.4B+), topics (1K+), and sources (1K+). A call-to-action text "Take a look at [data coverage matrix](#) by country or topic to see the full picture!" is present. On the left, a sidebar lists categories: Country profiles, Sources, Maps, Country rankings, Commodities, Topics, Agriculture, Crime Statistics, and Demographics. The main content area displays a grid of flags representing various countries: United States, China, Japan, Germany, France, Brazil, United Kingdom, Italy, Russia, India, Canada, Spain, Australia, Mexico, South Korea, Indonesia, South Africa, and the World. Below the grid, a link "All countries: [A B C D E F G H I J K L M N O P Q R S T U V Y Z](#)" is provided.

Step 2: Explore Gapminder

The mission of the Gapminder Foundation is to fight knowledge gap using statistical data gathered from various sources. By creating rich data visualization and animated data presentations, statistical data becomes interesting.

In this step, you will explore the free material available from www.gapminder.org.

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- a. Navigate to www.gapminder.org.

The screenshot shows the Gapminder homepage with a prominent banner for 'Dollar Street'. The banner features three images: a close-up of a tire, a smiling woman holding a red ball, and a white cow. Below the banner is a grid of smaller images showing various people in different living environments. To the right, a section titled 'Welcome to Dollar Street' includes a quote about where country stereotypes fall apart and a link to a longer text.

A dream come true!

Dollar Street is now live!
Visit homes from all over the World
to see how people really live.

Toys on Dollar Street >>

Welcome to Dollar Street

– where country stereotypes fall apart

Imagine the world as a street. All houses are lined up by income, the poor living to the left and the rich to the right. Everybody else somewhere in between. Where would you live? Would your life look different than your neighbours' from other parts of the world, who share the same income level? Welcome!

- b. Click **Videos** to view presentations that bring statistical data to life and make the data more relevant to you.

The screenshot shows the 'Videos' section of the Gapminder website. It features four video thumbnails with titles: 'Singapore in a Global Perspective', 'Don't Panic — End Poverty', 'Will saving poor children lead to overpopulation?', and 'Don't Panic – The Facts About Population'. To the right, there is a 'Donate' section with a form, a 'TEDTalks' section with a list of videos, and a sidebar with a Swish number.

Videos

Singapore in a Global Perspective

The change from large to small families reflects dramatic changes in peoples lives.
In this TEDx video Hans Rosling talks [Read more ...](#)

Don't Panic — End Poverty

Hans Rosling asks: Has the UN gone mad? The United Nations just announced their boldest goal ever: To eradicate extreme [Read more ...](#)

Will saving poor children lead to overpopulation?

Hans Rosling explains a very common misunderstanding about the world: That saving the poor children leads to overpopulation. Not only is it not right, it's the other way around!

Don't Panic – The Facts About Population

The world might not be as bad as you might believe! "Don't Panic" is a one-hour long documentary produced by Wingspan Productions and [Read more ...](#)

Donate

Help Gapminder provide a fact-based worldview for free!

Enter an amount in US dollars:

\$

Make this a monthly donation

Donate now

Swish number: 123 327 55 75

TEDTalks

Hans Rosling's TEDTalks have been seen by millions. Tune in and see the talks from 2006 onwards:

Thumbnail	Title	Date
	TED 2006 Debunking myths about the "third world"	19.50
	TED 2007 The seemingly impossible is possible	18.57
	TED 2009 HIV: New facts and stunning data visuals	11.13

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Find videos that are of interest to you. After viewing some of the videos, how did it change your perception of the world?

After viewing videos, there accurate data and information about the the specific topics

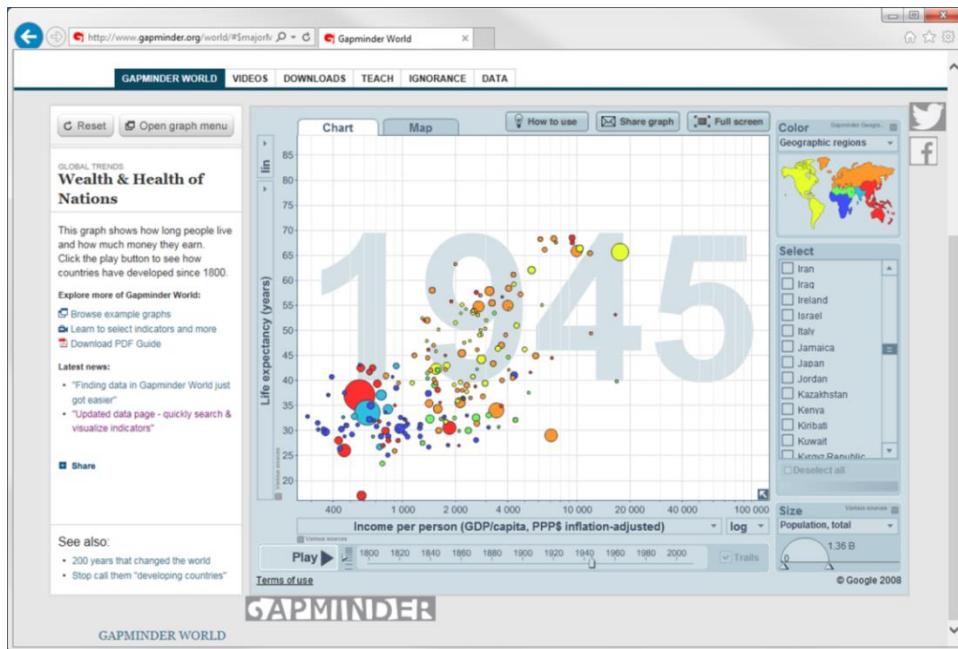
So using that data that can manipulate my thoughts about some topics related to world problems.

- c. To interact with the bubble charts that were presented in the videos, click **Gapminder World**.



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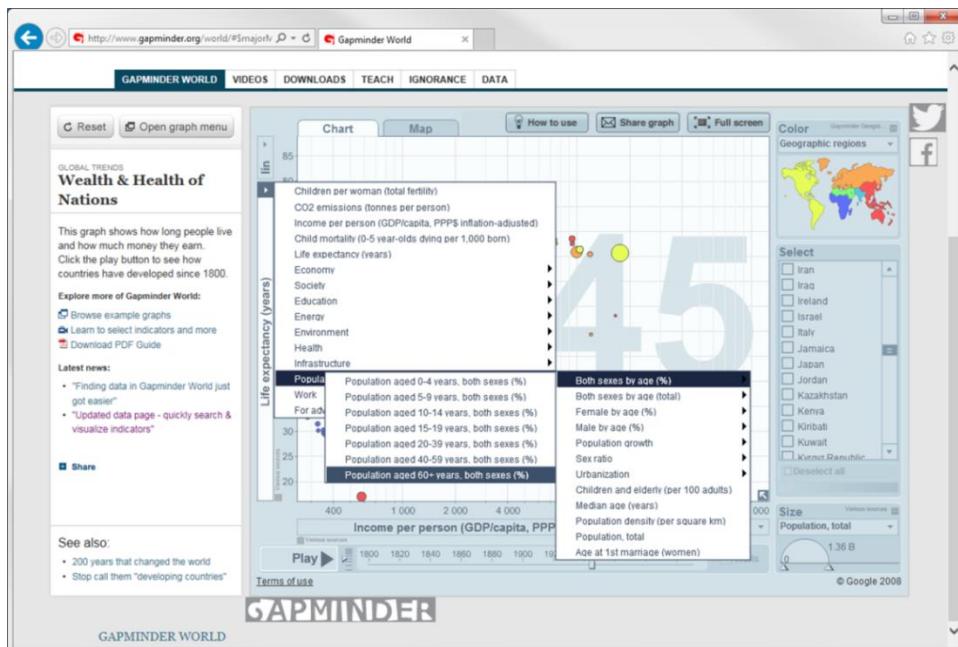
- d. Click **Play**. Observe the scatterplot changes for the trend between Life expectancy (years) vs. Income per person. Each of these bubbles represents the progress of a country.



What relationship did you observe?

Income per person is increasing in USA as per time is passing

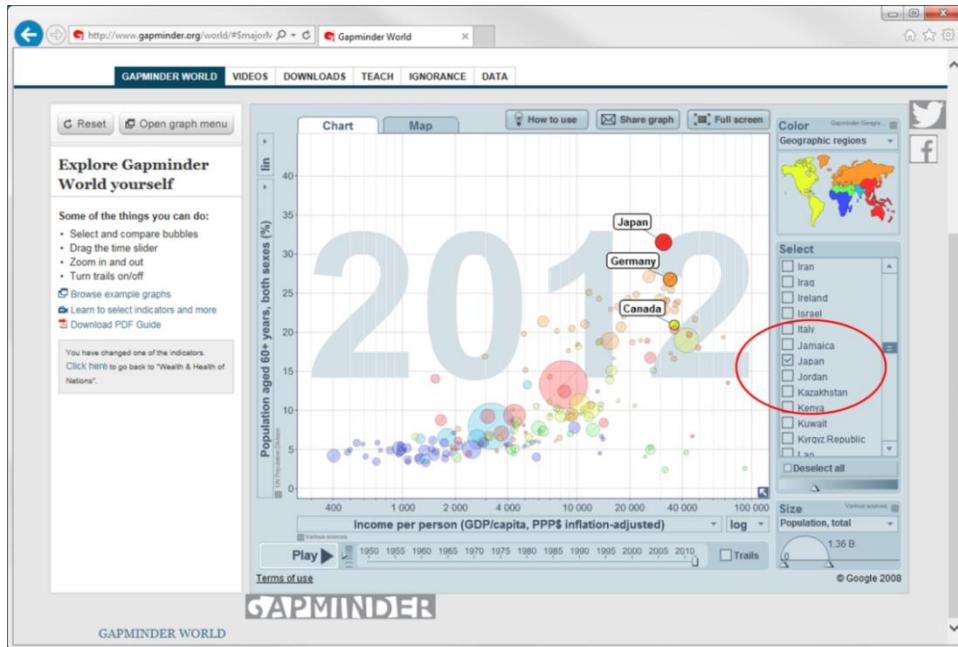
- e. Change the y-axis **Life Expectancy (years)** to **Population aged 60+ years, both sexes (%)** so the chart compares the percentage of the population over 60 with income per person.



- f. Now select a few countries to highlight their path from 1950 to 2012. In this example, Canada, Germany, and Japan were selected. Japan will have the highest percentage of their population at 60+ years of age

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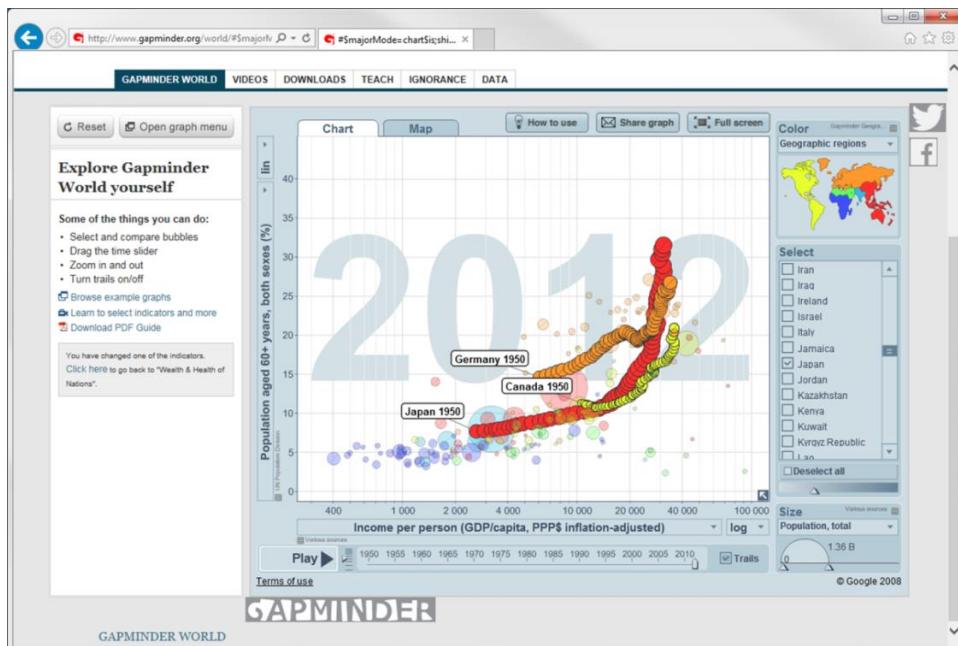
in 2030 according to the data visualization from <http://knoema.com/awppbnd/how-well-ageing-population-is-faring>.



- g. Click **Play** to observe the trace for these three countries.

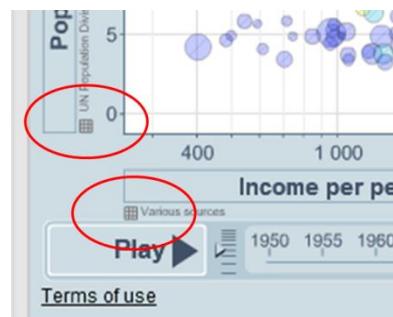
What relationship do you see?

Canada and Japan are almost equal all time and Germany is little back than those



- h. The data sources used in these charts are available to you by clicking the grid symbol next to the x or y axis on the chart. Click the grid symbol to view or download the raw data.

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Source: Free material from www.gapminder.org

Reflection

Now you have had a brief introduction to data visualization from different websites. Choose your favorite data visualization website and perform a visualization of your own.

Briefly describe the visualization you performed.

AS per my perception Gapminder is the best platform to visualize the data and that website also have the feature to select specific information and play it according to time.

What did you learn as a result of the visualization?

Data needs to be sorted, stored and properly visualized can help us to research about any topic can make it easy and fast.