

## PROJECT 1 – Visualize Your Life

### Directions:

#### Spreadsheet

Using Google Sheets or MS Excel, create a basic to mid-level spreadsheet that tracks something in your life. This could be your collection of Hot Wheels cars or the number of times you have visited a certain place for different occasions. It could be an inventory of holiday decorations in your garage or a list of everything you planted in your garden and how many vegetables it produced over time. You could track your music listening or collecting habits or statistics related to your health and wellness. Ultimately, anything you wish to track and show numerically.

Remember that an effective, basic spreadsheet needs to have three areas of data collection:

1. a Header Row (presented as words and/or numbers)
2. a Header Column (presented as words and/or numbers)
3. a set of triangulated cells (presented as numbers\*)

\* Note that units of measure can be notated outside the spreadsheet.

#### InfoGram

Once you have created and formatted a spreadsheet you are happy with, you will link it with your InfoGram account. From this spreadsheet, you will create a chart (pie, bar, bubble, etc.) that draws from the data in your spreadsheet. Format the chart how you like (colors, size, fonts, etc.).

In both your chart choice and the way you visually format it, work to make choices that help to tell the story of your data. Once complete, create and format a second chart that focusses on just some of the data from your spreadsheet.

You must also include at least one image that helps to support your data (from [unsplash](#), [pexels](#), or [pixabay](#)), a typographic title for your document, and a written, one paragraph introduction explaining what you are tracking and why you chose it.

#### Goal

In the end, you will have a collection of content that visualizes your data and tells a type of story. Be aware of tone, use of color and type, and who your intended audience could be.

#### Document Specs

NAME	YourLastName_PROJECT 1
SIZE	Tabloid (11"x17" vertical or horizontal)
MARGINS	1" all around
COLOR	full color
PUBLISH AS	InfoGram Web Link (submit to Canvas on MS Word Doc.)

## PROJECT 2 – Research & Inquiry

**About:** The Data Visualization Research & Inquiry Assignment continues the research process you were introduced to in GLE 101 FYI. This process includes identifying appropriate resources, forming an inquiry question that guides your research, reading and understanding sources, and synthesizing information found in those sources.

The culmination of this project is a data visualization presentation that is designed to educate, tell a story, and persuade.

**Theme:** The History of Data Visualization

**Directions:** Choose one of the areas covered in our brief history of data visualization that you are most interested in. Conduct background research on that topic and timeframe, seeking more depth and detail. From your background research, you will develop an inquiry question that you pursue further (through secondary source research). From your inquiry question findings, you will then create a data visualization poster for presentation.

As a reminder, here are the historical areas covered in this class:

1786	William Playfair: pioneered bar chart, line graph (1786) and pie chart (1801)
1858	Florence Nightingale: Rose Diagram, links data to social action
1900	W.E.B. Du Bois: Exposition des Nègres d'Amérique at the Exposition Universelle
1913	Modular Design Elements: originating in Russian constructivism...
1916	Italian futurism
1917	De Stijl
1919	Founding of Bauhaus: German art & design school, rigorous foundation.
1925	Isotype Picture Language: which defined simplified pictographic form
1950	International Typographic Style
1965	John Wilder Tukey
1968	Edward Tufte

There are three parts to this project:

### **Part 1: Background Research**

Deliverable: Inquiry Question

### **Part 2: Secondary Source Research**

Deliverable: Annotated Bibliography of (a minimum of) 5-sources (at least 2 academic)

### **Part 3: Presentation of Findings**

Deliverable: Data Visualization Poster

Each of these parts is explained below.

## Part 1: Background Research

**Directions:** Now it's time to decide on your inquiry/research question. This is no easy thing and should require some thought? Your choice of question should ultimately 'speak to you'. It should be a question you find exciting that you are willing to devote a good amount of time to researching and exploring the possible answers.

Once you decide on a historical area, you must conduct "background research". This means researching sources from the library or the internet to collect some background information on your area of interest. These sources may or may not end up being used in the next section (Part 2: Secondary Source Research). For now, they are to provide you with enough general research to help point you down some interesting paths and come with an inquiry question about your historical area.

Your inquiry question can be about one or more people, a place, a political, historical, or social movement – or about anything you find truly interesting that you want answers to. If you want to know how to write a good inquiry question, jump to **How to Write Your Inquiry/Research Question**.

Sample questions might include:

How did Florence Nightingale's Rose Diagram help to save lives?

How were African Americans viewed scientifically and socially in the US following the Emancipation Proclamation?

How did the Bauhaus influence art and design education in the US in the 20<sup>th</sup> and 21<sup>st</sup> centuries?

You are welcome to use any of these – but only if you truly love it. More likely, you will need to devise your own. Feel free to brainstorm in groups or work with a neighbor to help each other out. No duplicate questions please.

## Part 2: Secondary Source Research

**Directions:** You will create an annotated bibliography in correspondence to your inquiry question. An annotated bibliography is simply a list of references where each reference entered is followed by notes on its relevance to your inquiry question. You must use MLA, APA or Chicago style when listing sources.

To create your citation, you can either use OttoBib (<http://www.ottobib.com>) which focusses solely on sources with an ISBN number (books), or Citation Machine (<http://www.citationmachine.net>) which will create citations for books, magazines, newspapers, websites, journals, or films.

Each reference/source in the annotated bibliography makes up one bibliographical entry. For each entry:

1. State the bibliographic sentence (from OttoBib or Citation Machine in either MLA, APA or Chicago style)
2. Provide three pieces of data (i.e., *useful* observations, facts, statistics, assertions, or quotes) from the sources that helped you think and learn about your topic
3. Provide a minimum of two sentences reflecting on the usefulness of the source to your research

Be sure to number each source. You are required to collect a minimum of 5-sources (at least 2 academic). Note that you are not required to use all of them in your data visualization poster.

Besides documenting your research materials, the annotated bibliography serves

1. to get you to study your sources and, therefore, your research question
2. as your data collection process
3. to help you develop your thesis or narrative for your data visualization poster.
4. to prepare you to create your data visualization poster.

In tandem with creating your annotated bibliography, you will be delving into your sources. This is a deeper dive into your research and requires you to analyze your sources, follow where they lead, ask more question, and come to some findings/conclusions. It is not uncommon, when diving into these sources, to repeat some of these steps.

Remember, while 2 of your sources must be "academic" (books, scholarly journals and articles), the rest can be any other credible source such as newspapers, magazine articles, documentaries, films, even interviews.

How to identify an academic source: <https://www.library.illinois.edu/ugl/howdoi/scholarly/>

How to check your sources for credibility: <http://www.easybib.com/guides/students/writing-guide/ii-research/c-evaluating-sources-for-credibility/>

- Your final deliverable will begin by restating your inquiry question, then present your secondary source research as detailed above. Minimum of three pages.

## Part 3: Presentation of Findings

Now it is time to create your data visualization poster. Think of it like a term paper or book report but presented as a data visualization poster. Imagine that you are creating this for a museum display.

### Media

We will be creating our data visualization poster using InfoGram. From your home page, under *All Projects*, choose *Poster*. Next, choose *Blank Template > Public on the Web > Create*. Once in the new blank project, go to *Settings* (upper-right) and set your document size to *Custom* at 2500 x 1400 (horizontal).

### Research

Be sure to research the forms data visualization take (we cover this in WEEK 4), work to understand the appropriate usage of each, and choose which one(s) will best tell your story.

### Impact and Intent

As these are "visual presentations", they are meant to be more stimulating to a group of viewers as presented. They are not read individually as a book report might be. As with any poster design, they must be visually interesting and engaging. Specifically, they should be designed to educate, tell a story, and persuade.

Ultimately, your final poster must tell a clear and interesting story, on its own, without verbal explanation. The work must speak for itself.

### Design

Your data visualization poster must be well designed, consider the entire format, employ good layout and visual hierarchy, use of color, typography, and image creation. Photography must be sourced and cited in a separate document and pictograms, icons, illustrations must be original.

### Content

Your data visualization(s) can take the form of diagrams, maps, tables, and/or charts – or a creative hybrid that you develop. The poster could also contain more than one of these if that helps tell your story better. You can also include photographs, pictograms, icons, illustrations, and typography.

Your final poster must also contain your inquiry/research question (from Part 1).

### Specs

NAME	<i>YouLastName_PROJECT2</i>
SIZE	2500 x 1400 (horizontal)
MARGINS	50 pixels all around
COLOR	full color
PUBLISH AS	InfoGram Web Link (submit to Canvas on MS Word Doc.)

## PROJECT 3 – Illustrated Map

**Theme:** Your Commute

**About the Theme:** Commuting is periodically recurring travel between one's place of residence and place of work, or study – thus exceeding the boundary of their residential community. The word *commuter* derives from early days of rail travel in the US in the 1840s. The railways of the time charged workers a reduced or 'commuted' fare into the city. Commuted tickets would usually allow the traveler to repeat the same journey as often as they liked during a given period. Before the 19th century, most workers lived less than an hour's walk from their work. Today, it is not uncommon for people to travel one to four hours per day by car or public transportation to get to work or school.

**Directions:** Illustrated maps offer a unique view of the world around us and engage the viewer in a fun and creative way. Illustrated maps go beyond mere directions by providing entertainment, interesting or historic facts, and character.

Using Google Maps as your starting point, you are to map out your commute from home to school. Then, through research and traveling the route, you are to identify points of interest that you can illustrate (along with the map itself). You must have a minimum of 6 points of interest. These points of interest can be architectural, natural, or even human. What makes them interesting is up to you.

Each point of interest must:

- be researched and photographed before starting your illustrations.
- be illustrated, as icons, with pictograms, and/or graphics within the map in whichever style you wish.
- be accompanied by typeset information or fun facts about it.

Also, the map itself must also be a graphic representation with the path of your commute clearly marked. The more detailed and fun your map is, the better. This is a full color project.

### Media

You can create your illustrated map with InfoGram, Adobe Spark, Adobe Illustrator, MS Excel, Apple Numbers or any other digital tool you are comfortable with that can accomplish our objectives.

Whether you are already familiar with a digital tool or trying out something new, be sure to leave enough time to play and explore so it will do what you want it to do.

### Document Specs:

NAME	YourLastName_PROJECT 3
SIZE	Tabloid (11" x 17" or 792 x 1224 pixels – vertical or horizontal)
MARGINS	1" or 20 pixels all around
COLOR	full color
PUBLISH AS	InfoGram Web Link (submit to Canvas on MS Word Doc.) or High Res .pdf

**Extra Credit:** Design icons to be used in a Map Key for your map.

**To Learn More:** <http://www.illustratedmaps.com/>

## PROJECT 4 – Interactive Data Visualization

**Theme:** Sound Waves and the Visualization of Sound

**About the Theme:** Sound can travel through a medium such as air, water and solids as longitudinal. The sound waves are generated by a sound source, such as the vibrating diaphragm of a stereo speaker. The sound source creates vibrations in the surrounding medium. As the source continues to vibrate the medium, the vibrations propagate away from the source at the speed of sound, thus forming the sound wave. Note that the particles of the medium (air, water, solid) do not travel with the sound wave. This is obvious for a solid, but the same is true for air and water. However, while traveling, sound waves can be altered (reflected, refracted, or attenuated) by the medium.

**Early Explore:** Interactive Sound Visualizations: [Chrome Music Lab](#)

**Directions:** Using the tools below, you are going to create a data visualization that will originate from sound. Specifically, you will collect or create a number of sounds (voice, ambient, music) that will be pieced together to create an aural "short story". Once arranged in order, you will then translate your sounds into wave forms. These wave forms, will then be manipulated into a creative, artistic, data visualization.

**Example** of an aural story: [A Day in the Life, Until...](#)

### Steps

#### PLAN & PREP

1. Decide on a basic story you want to tell using sound. You may want to write down the basic plot.
2. Collect and or create the sounds needed to tell your story (your music collection, recorded sound, [Audio Archive](#), and/or [Free Sound](#)).
3. Organize your sound files by their order of appearance in your story. Rename them numerically or alphabetically.
4. One at a time, run each sound file through [WaveFormer](#) to create a visual sound wave. Be sure to play around with the settings to get the results you like. Adjust, pause, and capture as .SVG file.
5. Repeat Step 4 multiple times per audio file to collect a variety of options.

**NOTE:** If you have some audio editing skills, you could also stitch together all of your sounds in GarageBand or Audacity first, then run the completed sound story through WaveFormer.

#### CREATE

6. (Note that .SVG files can be opened directly into Adobe Illustrator)
7. Create a new Adobe Illustrator file (see specs below).
8. After opening up and deconstructing each .SVG file in Illustrator, work toward creating a visual representation of your aural story. Think: freeform play (artistic, abstract, etc.)

### .SVG File?

Scalable Vector Graphics (SVG) is an XML-based vector image format for two-dimensional graphics with support for interactivity and animation. The SVG specification is an open standard developed by the World Wide Web Consortium (W3C) since 1999.

### Document Specs:

NAME	YourLastName_PROJECT 4
SIZE	Tabloid (11"x17" horizontal)
MARGINS	.5" all around
COLOR	full color
PUBLISH AS	High Res .pdf