VISUALIZATION DESIGN

In this assignment, you will **design a visualization** for a small data set and provide a **rigorous rationale** for your design choices. You should in theory be ready to explain the contribution of *every pixel* in the display. You are free to use any graphics or charting tool you want — including drafting it by hand.

(See for a list of **visualization tools**). Graphics tools include **Inkskape** (https://inkscape.org/), **Adobe Illustrator** (http://www.adobe-students.com/creativecloud/buy/students.html?sdid=KKTGX&mv=search&ef_id=Cj0KCQiArvX_BRCyARIsAKsnTxP5ux_YILkbjmO_0Z6fPcoV0nhw2rSlvQDpWb8uDChTCKy0caAvykEALw_wcB:G:s&s_kwcid=AL!3085!3!474713429992!e!!g!!illustrator), **Affinity Designer** (https://affinity.serif.com/en-gb/designer/). Other suitable tools for creating visual content include **MS PowerPoint** (https://office.live.com/start/powerpoint.aspx), **Google Jamboard** (https://jamboard.google.com/), or freeform sketching digital tools for tablets, such as **Sketchbook** (https://sketchbook.com/), or **Notability** (https://www.gingerlabs.com/). A high-resolution photograph of a hand-drawn visualization works too!

DATA SET: MOVIES SHOT IN TORONTO

Toronto, or the "Hollywood North", is known for its prolific movie industry. Many blockbusters such as X-Men and Robocop have been shot in Toronto. How popular are these movies in general? What genres dominate? Who are the main directors or producers who frequently bring their production to Toronto studios? Here, you will examine interesting questions about movies shot in Toronto (https://en.wikipedia.org/wiki/List_of_films_shot_in_Toronto

Toronto (https://en.wikipedia.org/wiki/List_of_films_shot_in_Toronto)) with added data from IMDB (https://developer.imdb.com/ (https://developer.imdb.com/)).

Download the dataset: [CSV (https://q.utoronto.ca/courses/281275/files/21948147/download?download_frd=1)]

ASSIGNMENT

Your task is to (a) design a static (i.e., single image) visualization to effectively communicate a specific finding from the data and (b) provide a short write-up describing the main takeaway message that your visualization aims to convey (first paragraph), as well as a description of your design (no more than 4 paragraphs).

Start by analyzing the data and collecting interesting insights. After that, choose a particular insight (or set of related insights) that answer a particular question, and create a visualization that communicates the answer based on your insights. **Use the question as the title of your graphic.**

While you must use the given data set, note that you are free to transform and filter the data as you see fit. Such transforms may include (but are not limited to) log transformation, computing percentages or averages, grouping elements into new categories, or removing unnecessary variables or records. You are also free to incorporate external data. Your chart image should be interpretable without recourse to your short write-up. Do not forget to include title, axis labels, or legends as needed!

In your write-up, you should provide a rigorous rationale for your design decisions. Document the visual encodings you used and why they are appropriate for the data and your specific question. These decisions include the choice of visualization type, size, color, scale, and other visual elements, as well as the use of sorting or other data transformations. How do these decisions facilitate effective communication?

As different visualizations can emphasize different aspects of a data set, you should also document what aspects of the data you are attempting to communicate. In short, what story are you trying to tell? What takeaway message do you want to convey to your audience? You should also note which aspects of the data might be obscured due to your visualization design.

GRADING

The assignment score is out of a maximum of 15 points. We will determine scores by judging both the soundness of your design and the quality of the write-up. We will also look for consideration of audience, message, and intended task:

	Exceeds expectations	Meets expectations	Needs improvement	Below expectations	Unacceptable
Visualization design (5 pts)	(5 pts) 1. The visualization design is the result of *excellent choice of encodings* 2. The visualization design is *very creative and original* 3. The visualization design is *very clear, and very effective in communication*.	(4 pts) 1. The visualization design is the result of good choice of encodings. Some elements are unnecessary or unmotivated. 2. The visualization design is reasonably creative and original. 3. The visualization design is reasonably clear and effective in communication.	(3 pts) 1. Several encodings are questionable and/or ineffective. 2. The visualization design is not very creative nor original. 3. The visualization design is somewhat confusing and/or affects effective communication.	(1-2 pt) 1. The visual encodings are poorly chosen. 2. The visualization design has been clearly rushed and not thought through. 3. The visualization design is very confusing and fails at communicating the intended message.	(0 pts) Missing submission, off-topic submission, unreadable submission (corrupt file, poor resolution, poor lightning, etc...)
	(5 pts) 1. The chosen question and insights are discussed *very clearly, concisely and in depth*	(4 pts) 1. The chosen question and insights are discussed clearly. 2. The design	(3 pts) 1. The chosen questions and insights are discussed but lack clarity	(1-2 pt) 1. The chosen questions and insights are barely discussed, and/or are	(0 pts) Missing submission, off-topic submission, unreadable

			lack clarity.		unreadable
Write-up (5 pts)	2. The design rationale is *clearly articulated and discussed in depth* (i.e. tradeoffs and alternatives are considered, all dimensions are justified, limitations are outlined)	rationales are reasonably well articulated, and reasonably complete. Clarity and/or completeness could be improved.	2. The design rationale is discussed, but not very clearly or not in depth.	poorly articulated. 2. The design rationales is barely discussed, and/or poorly articulated.	submission (corrupt file, non English, …)

Here are examples of aspects that may lead to point deductions:

- Violation of submission instructions, missing components, poor presentation (e.g., poor formatting), lack of clarity (e.g., poor writing, poor organization).
- Missing chart title, axis labels or data transformation description.
- Use of misleading, unnecessary or unmotivated graphic elements.
- Ineffective encodings for your stated goal (e.g., distracting colours, improper data transformation).
- Missing or incomplete design rationale in write-up.

We will reward entries that go above and beyond the assignment requirements to produce effective graphics. Examples may include outstanding visual design, meaningful incorporation of external data to reveal important trends, demonstrating exceptional creativity, or effective annotations and other narrative devices.