

Module 4 - Session 2 - Data Visualisation

Working effectively with data

CivicDataLab

2021/10/21 (updated: 2021-10-21)

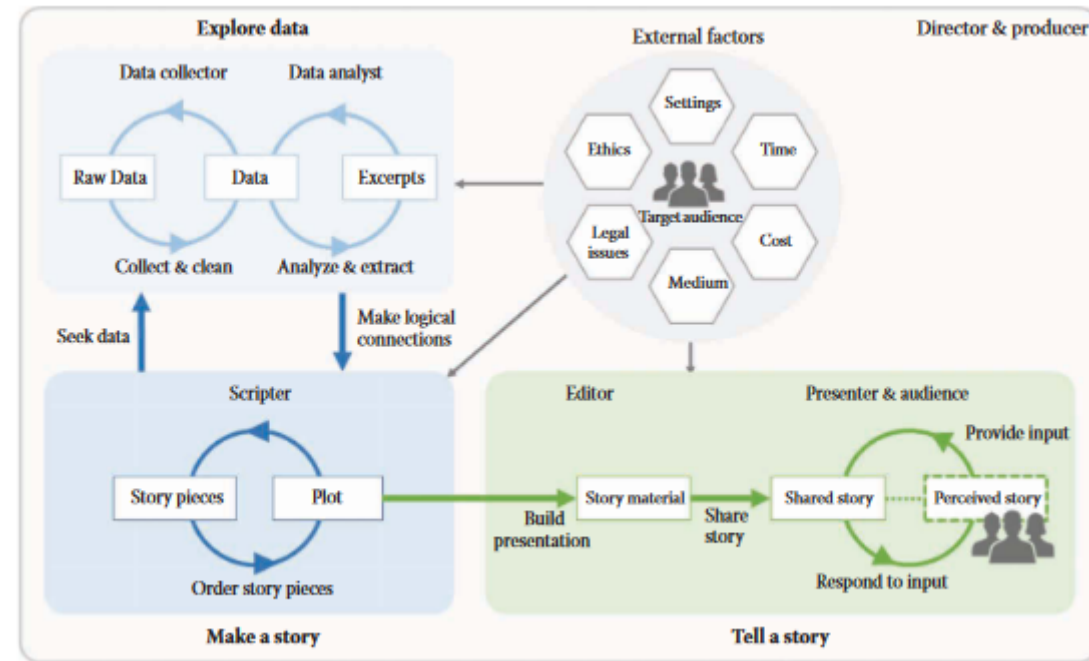
RECAP

Topics covered in the last session:

1. The data viz quadrant
2. What restricts us from visualising data
3. Data viz storytelling components **Story | Audience | Medium**
4. Activity - Building a narrative
5. Activity - Reading a data viz
6. Building accessible data visualisations - Check the [Chartability project](#)
7. How to select the most appropriate graph for your data
8. Things to avoid when developing visualisations
9. Information sharing framework when working with external consultants on data viz projects

Slides | Video

The data viz storytelling process



The storytelling process from the story idea to visually shared stories.¹

[1] Data Driven Storytelling

Data Viz - The Tooling Landscape

Visualisation Tools

Types	Description	Graphical-Based	Code-Based
Chart Templates Based	<ul style="list-style-type: none"> • Pre-defined configurations • Limited data flexibility • Harder to change • <i>Analogy: Idioms</i> 	<ul style="list-style-type: none"> • Excel / Sheets • RawGraphs • Flourish 	<ul style="list-style-type: none"> • Highcharts.js • Chart.js • Google Charts
Grammar Based	<ul style="list-style-type: none"> • Flexible configuration • Defined grammar • Based on data structure • <i>Analogy: Syntax</i> 	<ul style="list-style-type: none"> • Charticulator • Data Illustrator • Tableau • Kepler (Geo) 	<ul style="list-style-type: none"> • VegaLite.js • G2Plot • Leaflet (Geo) • Deck.gl
Components Based	<ul style="list-style-type: none"> • Individual components • Understand data for vis • Blocks to assemble • <i>Analogy: Words</i> 	<ul style="list-style-type: none"> • NodeBox • Framer (+ Code) • ... 	<ul style="list-style-type: none"> • D3.js • Vega.js (json) • VisX (react) • Ant Vision
Sketch Based	<ul style="list-style-type: none"> • Drawing on canvas • Limited data understanding • Do everything from scratch • <i>Analogy: Letters</i> 	<ul style="list-style-type: none"> • Figma • Sketch • InVision • Illustrator <p>(Static Vis Mostly)</p>	<ul style="list-style-type: none"> • p5.js • pts.js • paper.js • nodes.io

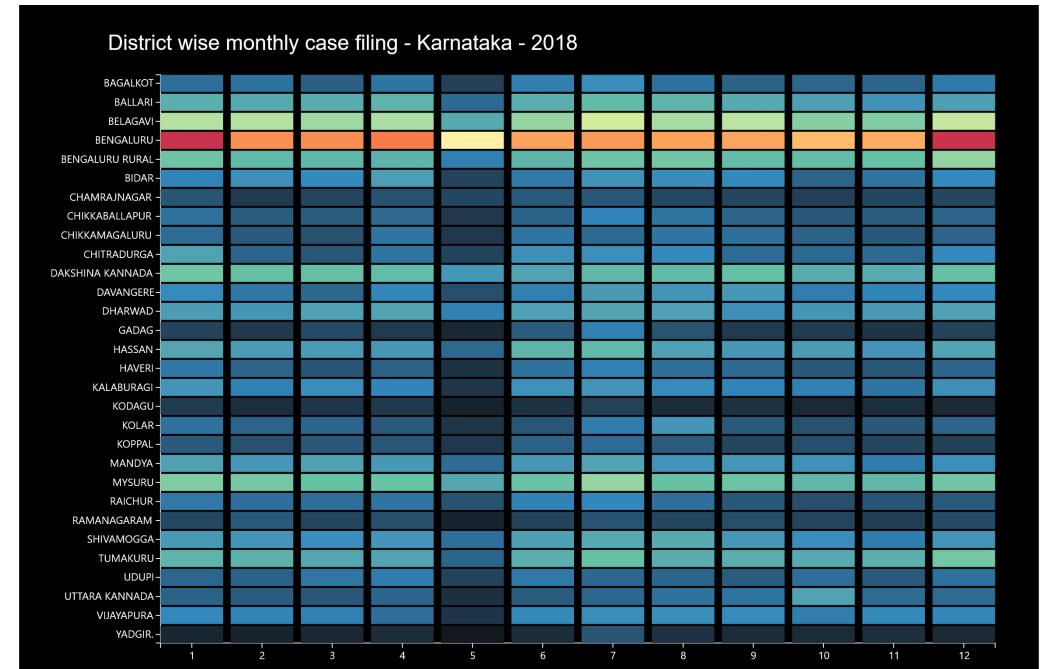
Static viz

Charticulator

Objective : Plot month wise cases for all districts of Karnataka from the year 2018



Charticulator is a project from Microsoft Research.

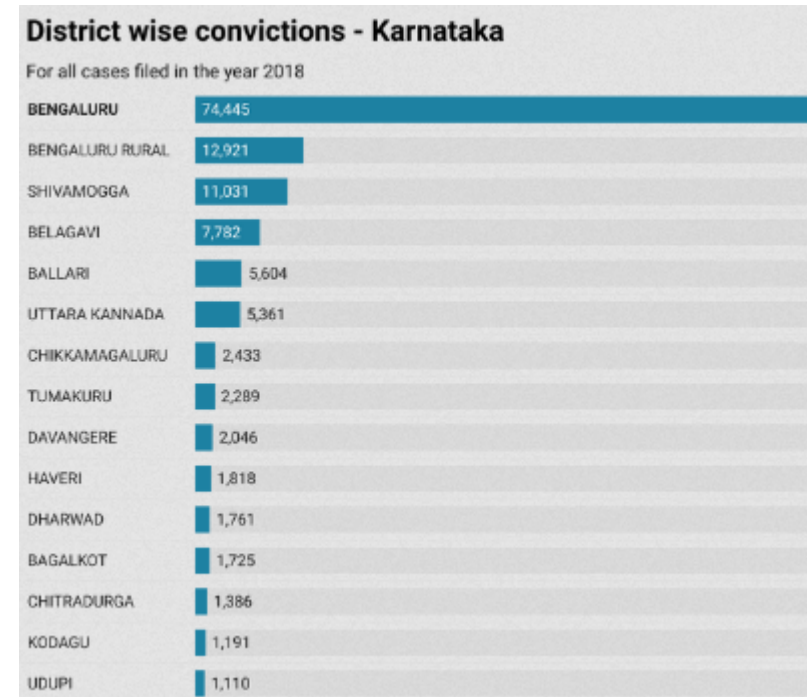


DataWrapper

Objective : Plot district wise total conviction cases for all districts of Karnataka from the year 2018

Datawrapper

Datawrapper helps some of the world's best teams to tell their stories with data.



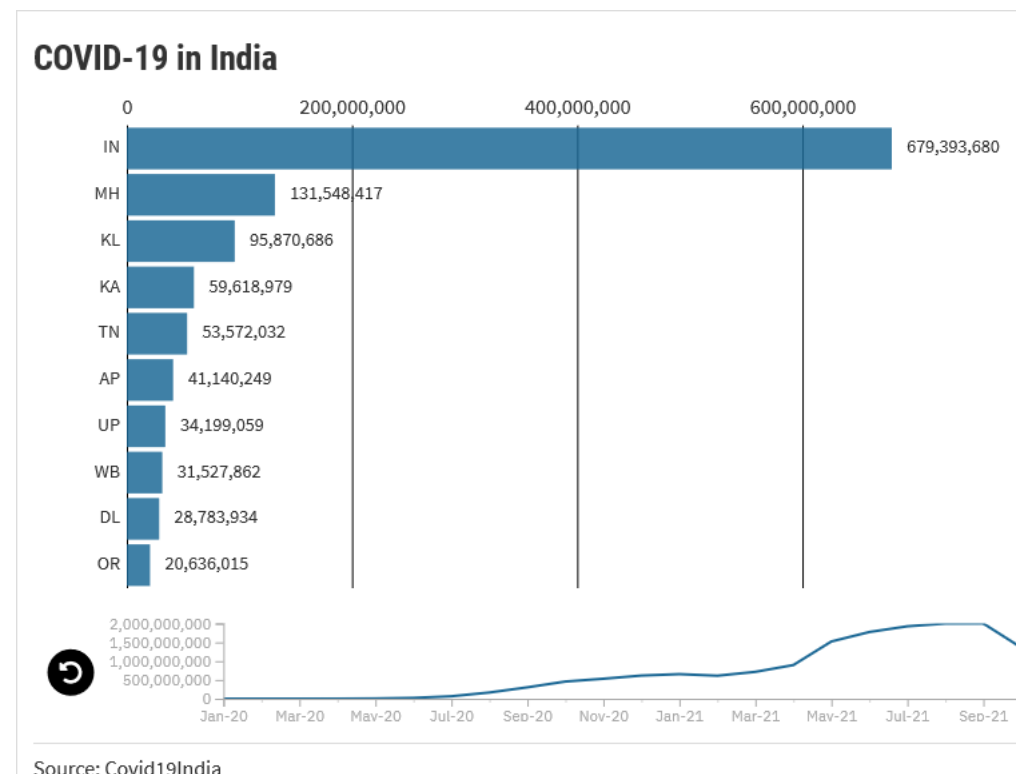
Dynamic (or Interactive) viz

Flourish

Objective : Plot the spread of COVID-19 across states from Jan, 20 - Oct, 21



Beautiful and easy data visualization and storytelling



COVID-19 Dynamic Data Viz



Maps

Maps - StoryMap - KnightLab



StoryMapJS is a free tool to help you tell stories on the web that highlight the locations of a series of events.



Maps - Designing a Road Trip around India

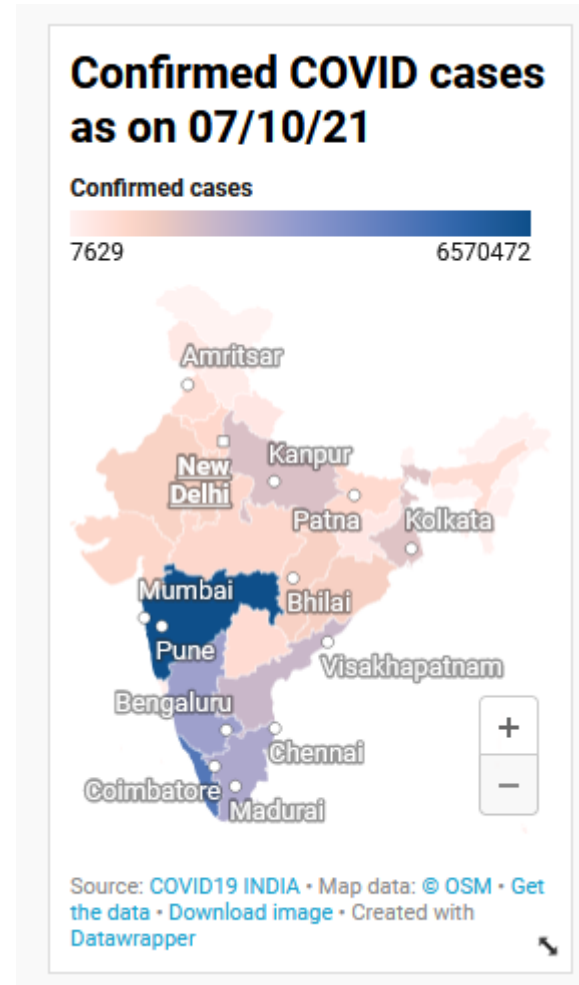


Maps - Static

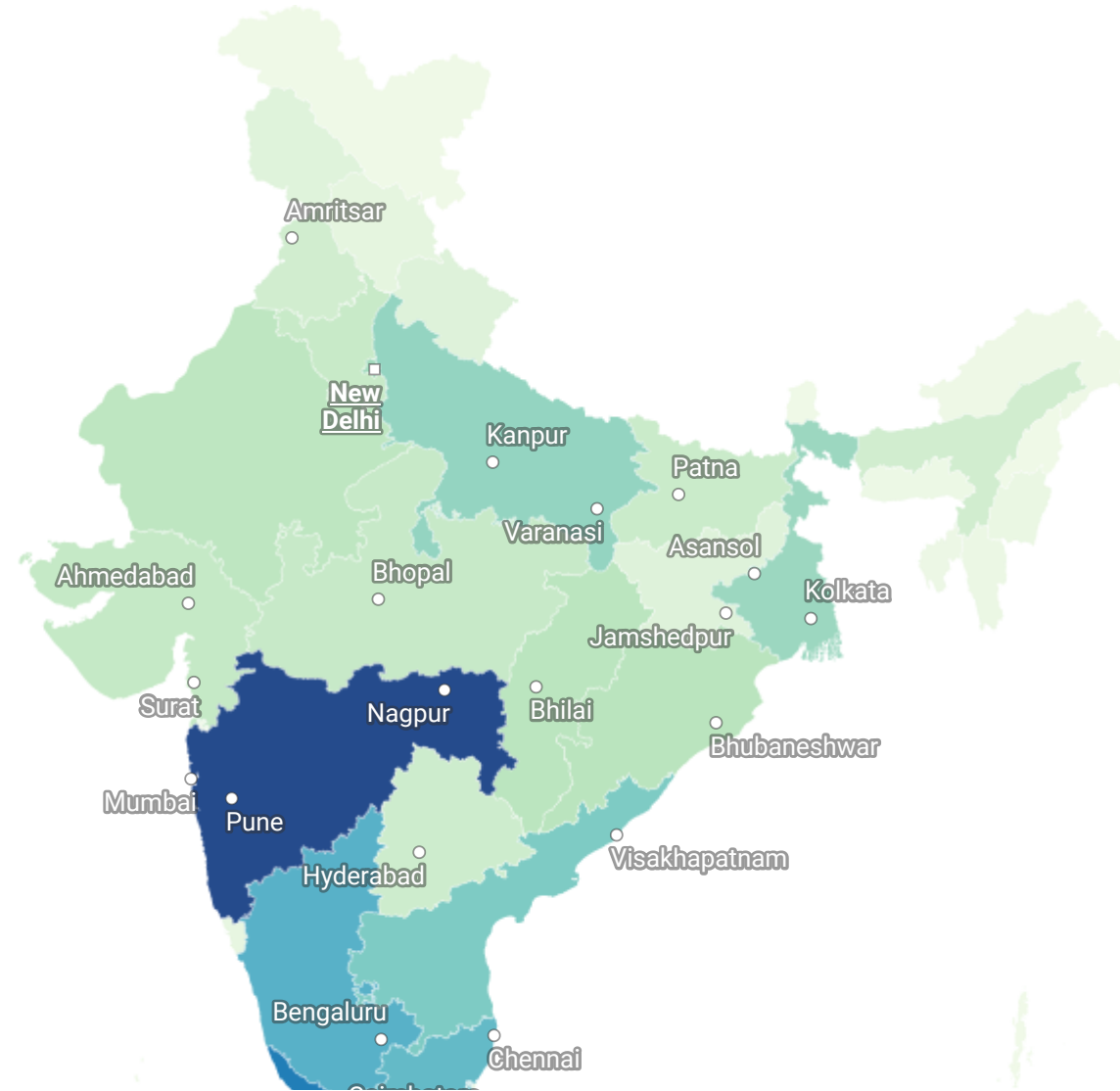
Create beautiful maps with Datawrapper

More than static maps: responsive, customizable and live-updating.

Tool | **Dataset**



Confirmed COVID cases as on 07/10/21



Tables

Table - Datawrapper

Objective : Display the total number of registered calls of women users across states from 2016-17 till 2019-20

Datawrapper

Create responsive tables with Datawrapper














State/UTs	2016-2017	2017-2018
DELHI	98,949	140,715
GUJARAT	111,584	129,265
ANDHRA PRADESH	44,715	215,300
TELANGANA	0	170,610
PUNJAB	123,545	108,253
UTTAR PRADESH	12,551	188,142
JHARKHAND	62,923	77,993
MAHARASHTRA	43,250	79,645
TAMIL NADU	0	0
BIHAR	45,908	43,119
MADHYA PRADESH	18,503	26,279
ORISSA	0	28,197
CHANDIGARH	15,318	13,625
KERALA	382	17,794
RAJASTHAN	0	1,323
CHHATTISGARH	1,103	1,830
ARUNACHAL PRADESH	8	3,314

Table - Women help line scheme

Women Help Line Scheme

Total number of registered calls of women users across states from 2016-17 till 2019-20

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	State/UTs	2016-2017	2017-2018	2018-2019	2019-2020	Total ▼	Trends
1	DELHI	98,949	140,715	172,519	326,515	738,698	
2	GUJARAT	111,584	129,265	172,352	208,224	621,425	
3	ANDHRA PRADESH	44,715	215,300	235,425	82,106	577,546	
4	TELANGANA	0	170,610	281,917	111,522	564,049	
5	PUNJAB	123,545	108,253	126,607	193,908	552,313	
6	UTTAR PRADESH	12,551	188,142	204,632	100,987	506,312	
7	JHARKHAND	62,923	77,993	143,423	116,550	400,889	
8	MAHARASHTRA	43,250	79,645	141,970	5,544	270,409	
9	TAMIL NADU	0	0	68,831	111,363	180,194	
10	BIHAR	45,908	43,119	36,254	12,255	137,536	
11	MADHYA PRADESH	18,503	26,279	38,982	49,479	133,243	
12	ORISSA	0	28,197	23,321	18,294	69,812	
13	CHANDIGARH	15,318	13,625	12,759	13,352	55,054	

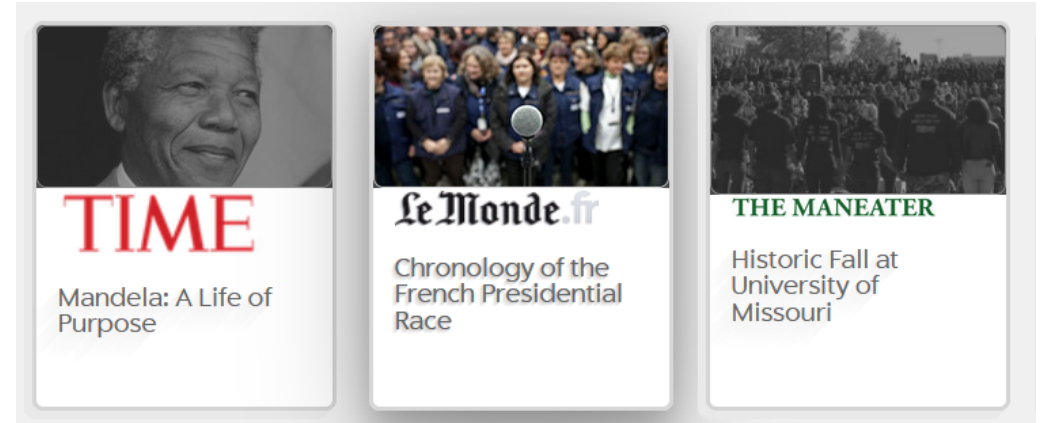
Timeline

Timeline - KnightLab

Timeline

Easy-to-make, beautiful timelines.

TimelineJS is an open-source tool that enables anyone to build visually rich, interactive timelines.



Tool

Timeline demo - Women in Computing



Resources - To select a chart

Visual vocabulary

Designing with data

There are so many ways to visualise data - how do we know which one to pick? Use the categories across the top to decide which data relationship is most important in your story, then look at the different types of chart within the category to form some initial ideas about what might work best. This list is not meant to be exhaustive, nor a wizard, but is a useful starting point for making informative and meaningful data visualisations.



1. From Data to Viz
2. FT - Visual Vocabulary
3. Information design for the human brain

Other Resources

Creating accessible data viz

- The [Chartability project](#)
- [Accessibility Features Demo - HighCharts](#)

Tools

- [Visualisation Tools](#)
- [RAWGraphs](#)
- [DataWrapper](#)
- [For creating infographics - Infogram](#)
- [Dashboard - Metabase](#)
- [Dashboard - Superset](#)

Links

1. [Creating responsive data visualisations](#)
2. [Visualizing How India Reacted to Decriminalization of Homosexuality](#)
3. [India in Pixels](#)
4. [Demo of how data can tell any story you want, ode to Tokyo](#)
5. [Data Viz - Style Guides](#)
6. [PolicyViz](#)
7. [How to Use Storytelling Conventions to Create Better Visualizations](#)

Queries and Feedback