

PV251 / Seminar #2

Katarína Furmanová

Data Preprocessing and Visualization with Python

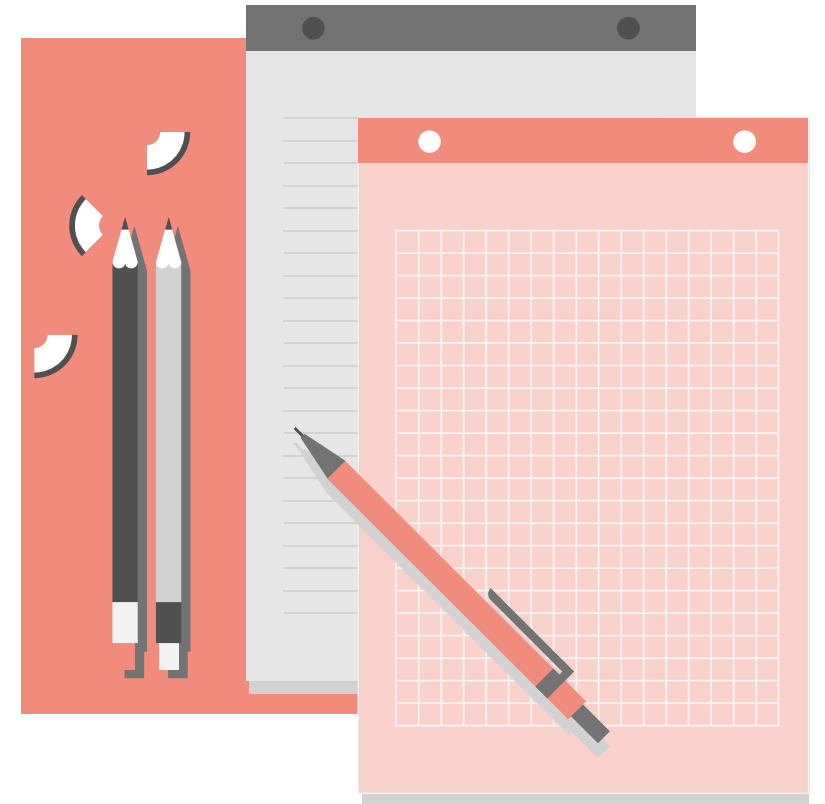
HCI^{LAB}

∴ visitlab

Pi Transition Paths by Martin Krzywinski

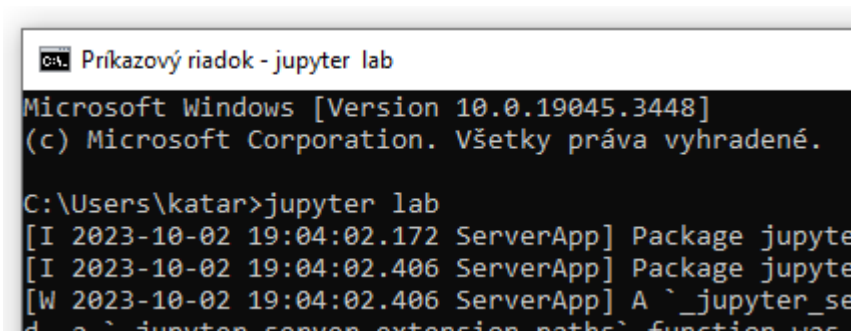
Today

- Homework 2 assignment
- Introduction to data pre-processing and visualization with Python
 - We will use python notebook in Jupyter Lab environment
 - Download the notebook and data from IS, put it all in the same folder
 - Load notebook into Jupyter Lab
- Individual work on visualization tasks
- Homework 1 feedback and consultation



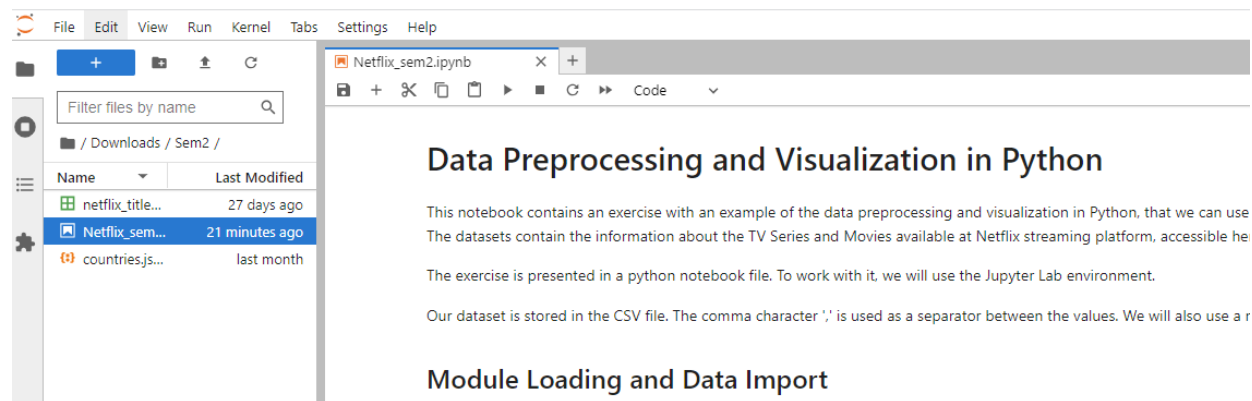
Jupyter Lab

- Open command prompt and navigate to the folder where you saved the files
 - Windows + R -> cmd OR type "cmd" into the address bar of file explorer with your folder
 - On school PCs work on local drives, do not use network drives (\\ad.fi.muni...), we often have trouble with permissions etc. there
 - The folder should contain files Netflix_sem2.ipynb, countries.json, and netflix_titles.csv at the same level)
- Type 'jupyter lab', hit Enter – Jupyter Lab will start in your browser
 - Once there, search for the .ipynb file from IS and open it



```
CA. Příkazový řádek - jupyter lab
Microsoft Windows [Version 10.0.19045.3448]
(c) Microsoft Corporation. Všechny práva vyhrazené.

C:\Users\katar>jupyter lab
[I 2023-10-02 19:04:02.172 ServerApp] Package jupyterlab
[I 2023-10-02 19:04:02.406 ServerApp] Package jupyterlab
[W 2023-10-02 19:04:02.406 ServerApp] A `jupyterlab`
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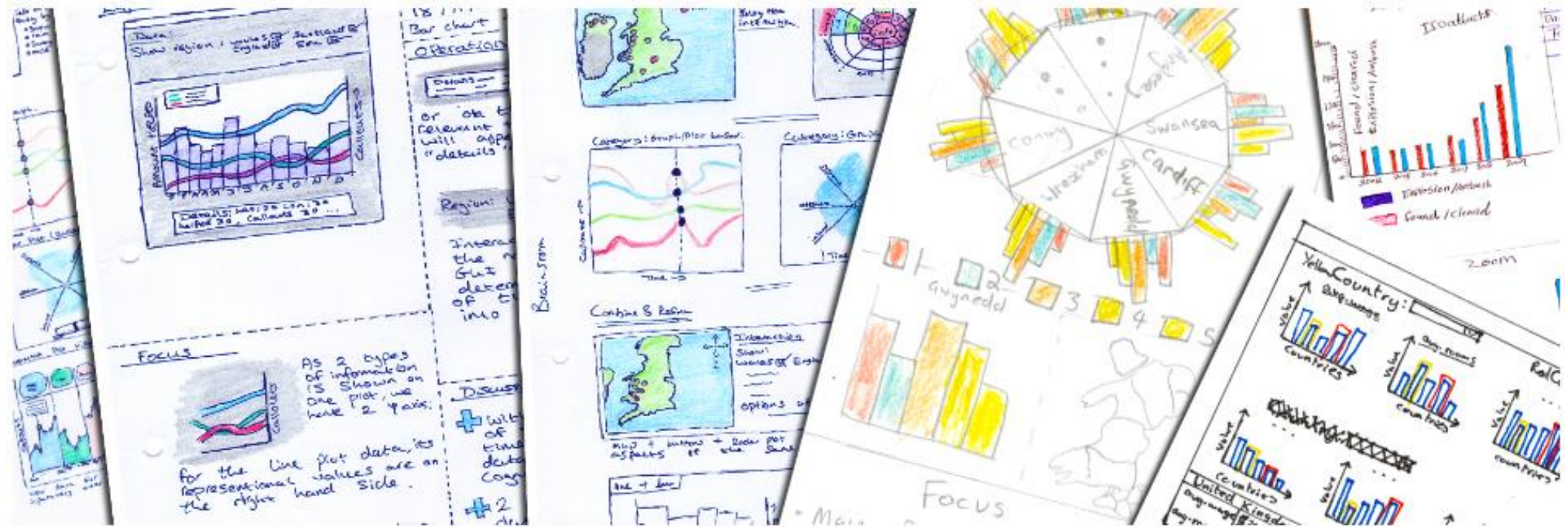




Homework 2 Assignment

Five Design Sheets

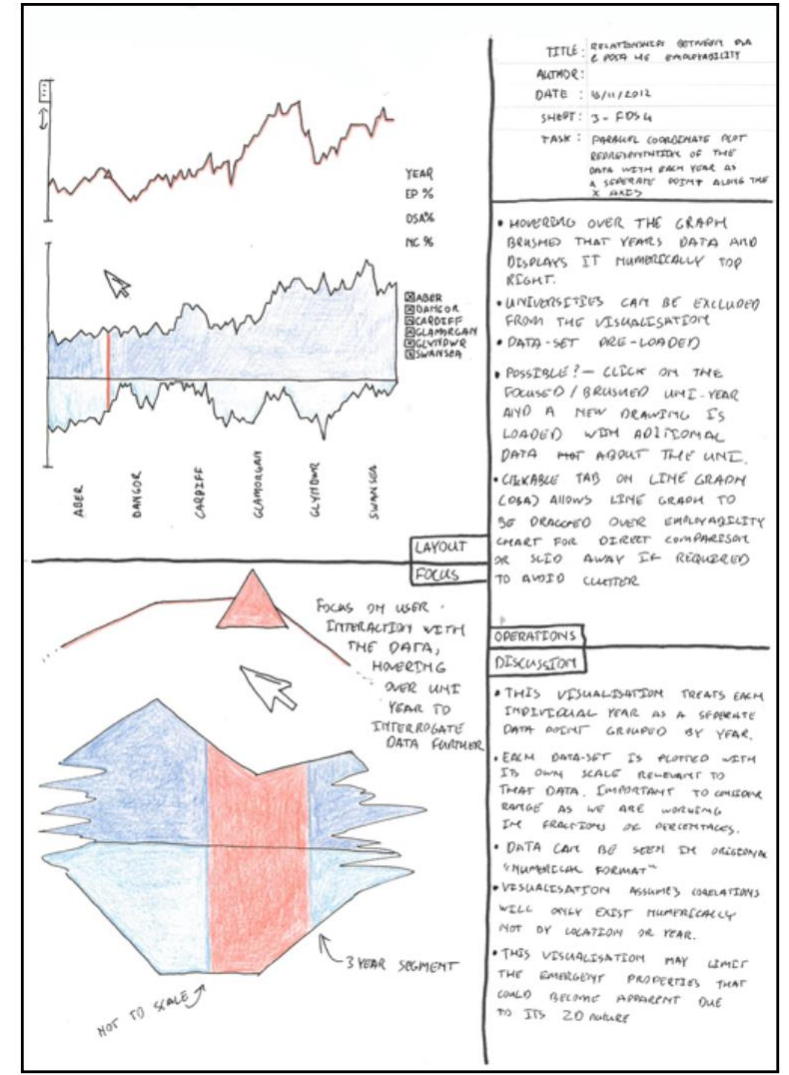
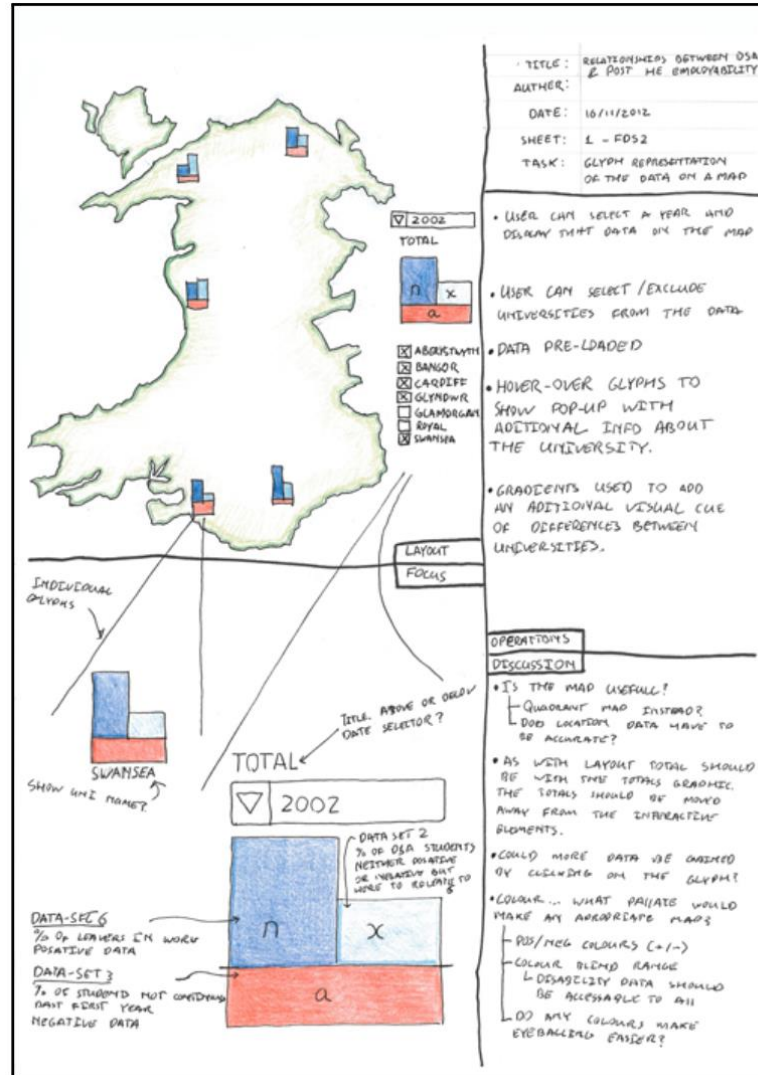
- ~~1st sheet: Brainstorming~~
- **2nd-3rd sheet: Potential designs**
- 5th sheet: Final design



Homework 2: Design Sheet 2/3/(4)

1. Layout
2. Focus
3. Operations
4. Discussion
5. Information

Sources: [Accessibility](#)

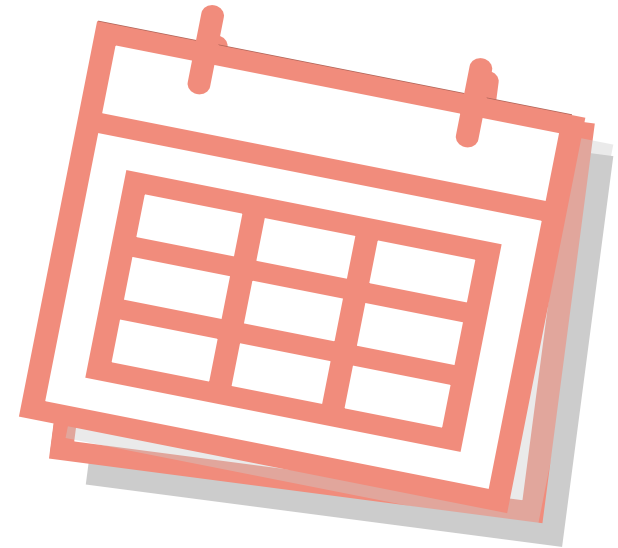


Homework 2: Design Sheet 2/3/(4)

- 1. Layout** – your vision of what the final visualization would look like. Sketch of the whole layout.
- 2. Focus** – detailed sketches and notes on key components.
- 3. Operations** – descriptions of how the user operates and interacts with the visualization. Controls of the user interface should also be included.
- 4. Discussion** – discussion of the advantages and disadvantages of the used visualization techniques. What do they support and what do they miss?
- 5. Information** – title, author, tasks to support, ...

Homework 2: Design Sheet 2/3

- **2 alternative designs = 2 separate design sheets**
- Use different visualization techniques, different interactions, and/or focus on different tasks that your project could support
- Upload to **Homework vault** of your group in IS
- **Deadlines:**
 - Group 02 and 04: Wednesday 16.10.
 - Group 01 and 03: Wednesday 23.10.



Dos and Don'ts: Provide Context and Navigation



Definition of key terms and goals, textual scaffolding

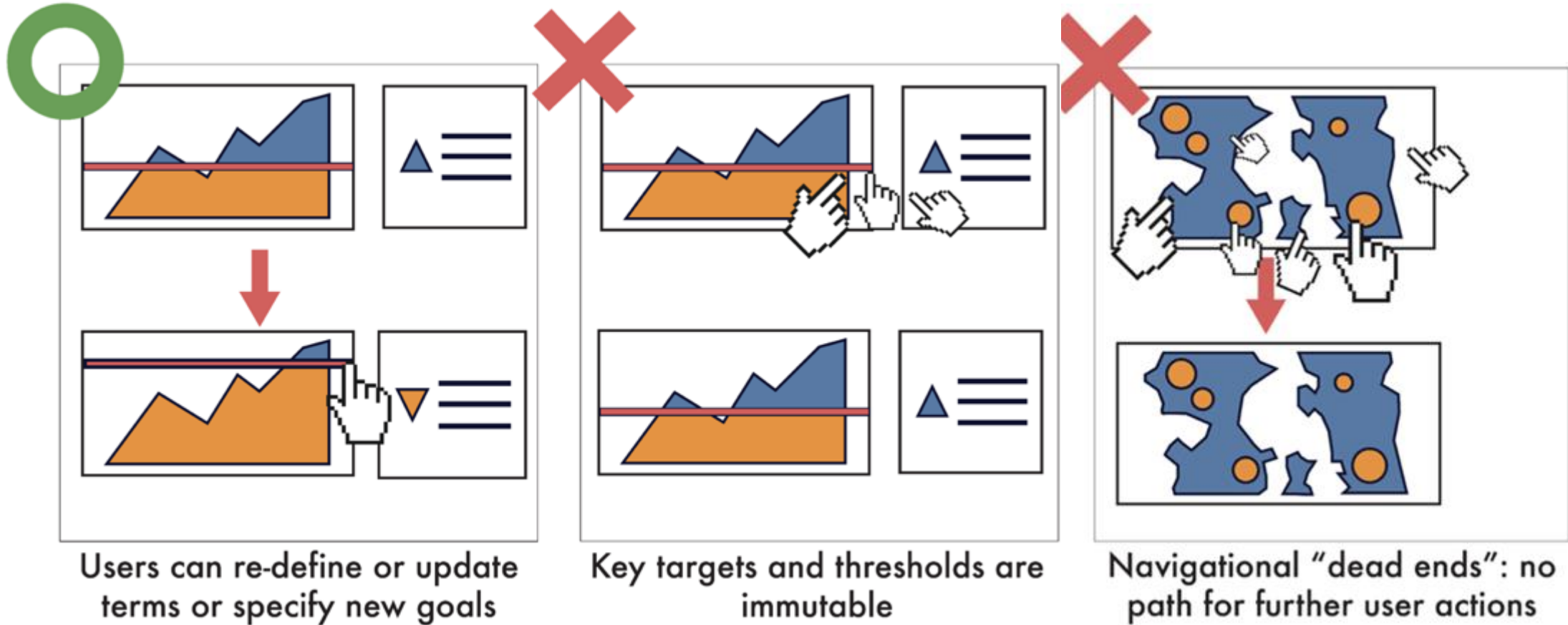


No provided textual context or explanation of views



No clear starting location or route to navigate

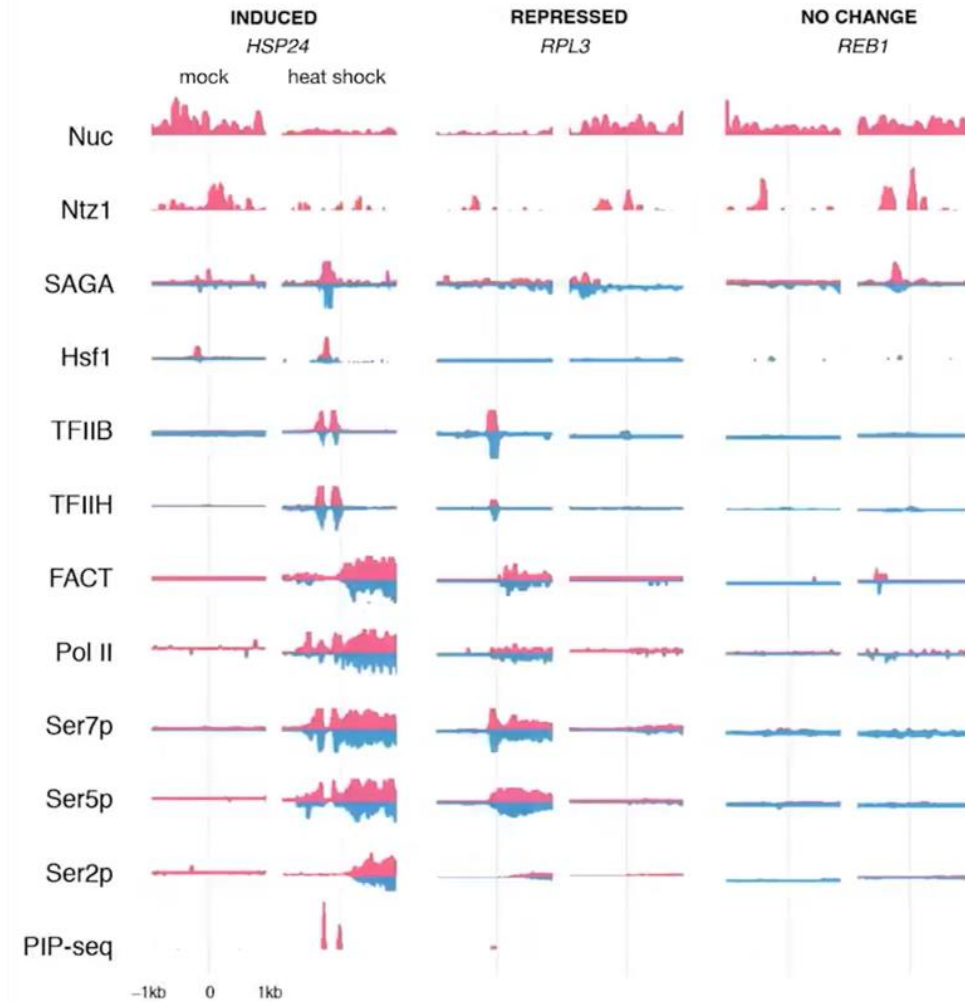
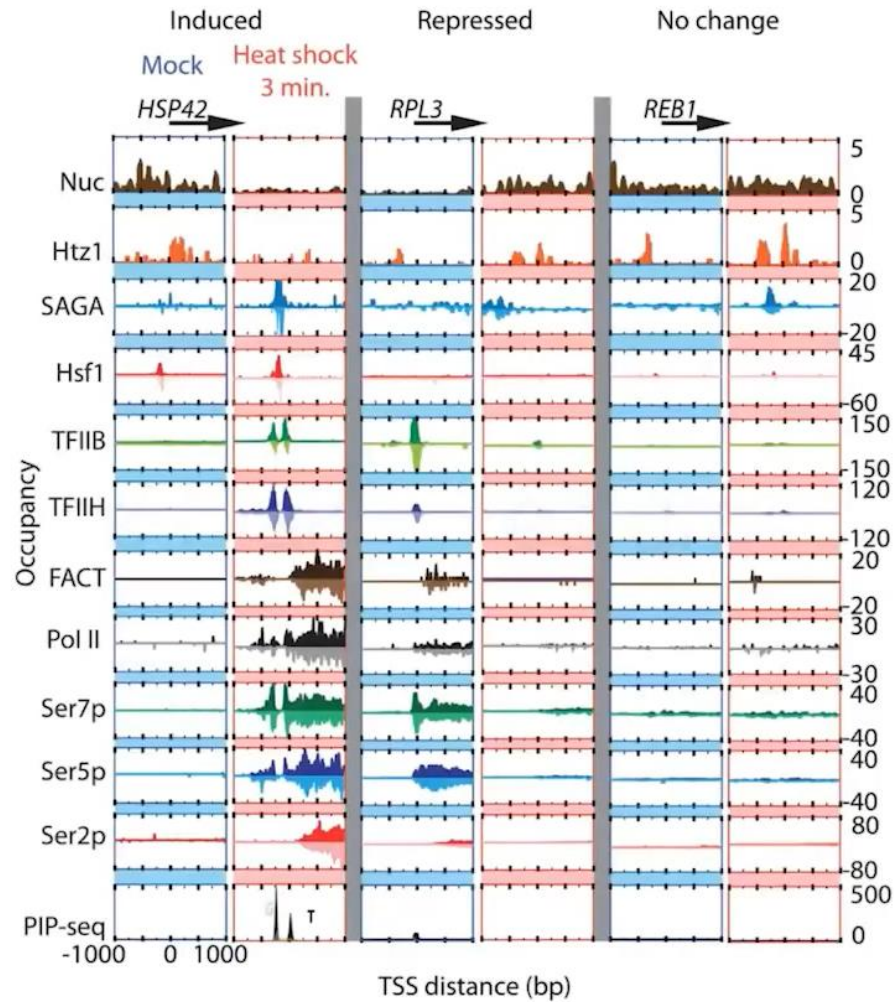
Dos and Don'ts: Avoid Dead Ends



Dos and Don'ts: Highlight Takeaways



Dos and Don'ts: Keep It Simple



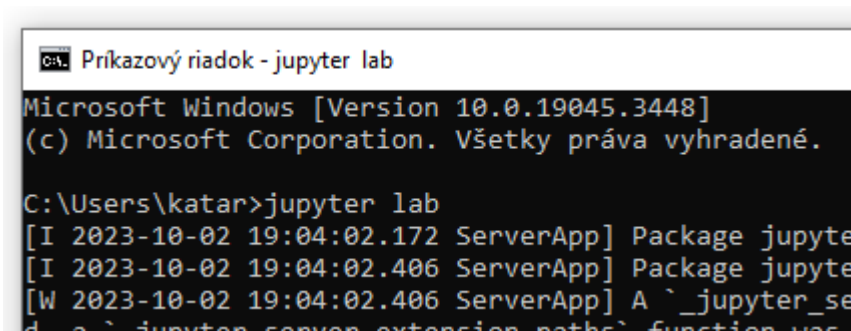
Source: Martin Krzywinski, <https://www.youtube.com/...>



Data Preprocessing and Visualization with Python

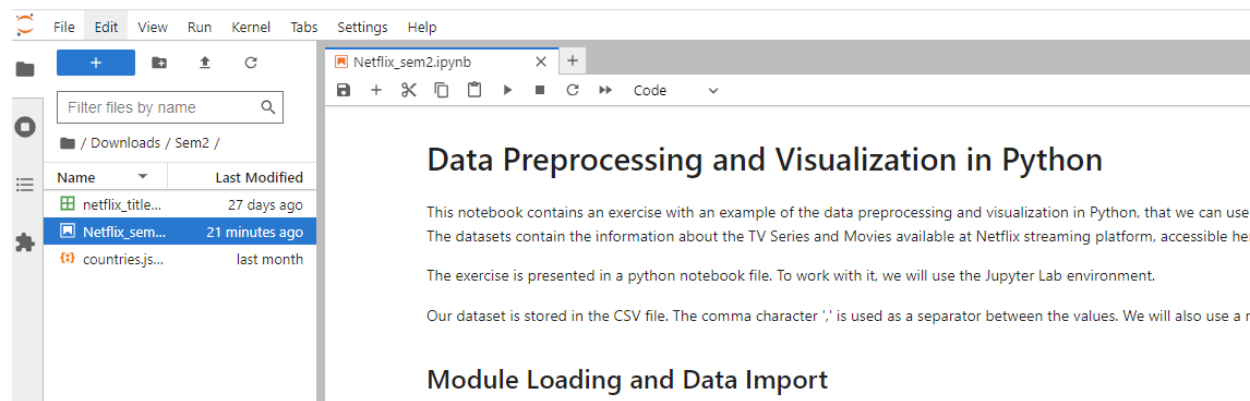
Jupyter Lab

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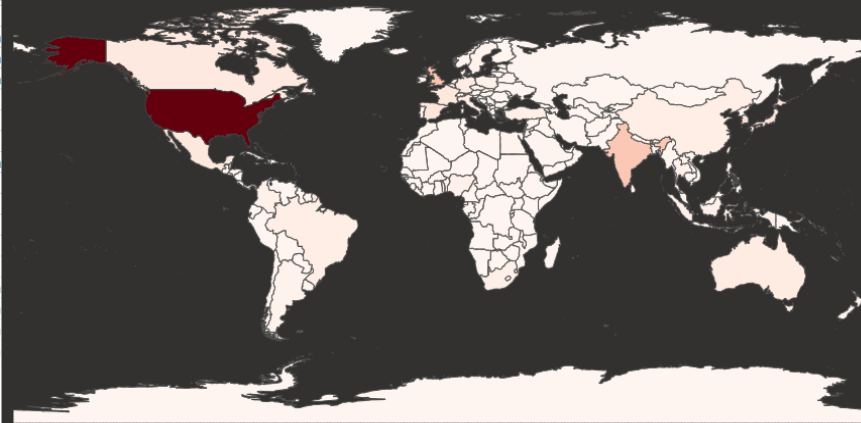
In This and the Following Seminar:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	show_id	type	title	director	cast	country	date_added	release_year	rating	duration	listed_in	description			
2	s1	Movie	Dick Johnson	Kirsten Johnson		United States	September 2020	2020	PG-13	90 min	Documentaries	As her father nears the end of his life, a filmmaker crosses paths with a young girl who is also a filmmaker.			
3	s2	TV Show	Blood & Water		Ama Qam	South Africa	September 2021	2021	TV-MA	2 Seasons	International TV Shows	After crossing paths at a party, a Cape Town filmmaker and a young girl discover their shared roots.			
4	s3	TV Show	Ganglands	Julien Lec	Sami Bouajila, Tracy	France	September 2021	2021	TV-MA	1 Season	Crime TV Shows	To protect his family from a powerful crime boss, a young man goes undercover.			
5	s4	TV Show	Jailbirds		New Orleans	United States	September 2021	2021	TV-MA	1 Season	Docuseries	Feuds, flirtations and toilet talk go down in the Louisiana State Penitentiary.			
6	s5	TV Show	Kota Factory		Mayur Mohan	India	September 2021	2021	TV-MA	2 Seasons	International TV Shows	In a city of coaching centers known for their ruthless tactics, a young man rises to the top.			
7	s6	TV Show	Midnight	Mike Flanagan	Kate Siegel, Zach Gilford	United States	September 2021	2021	TV-MA	1 Season	TV Dramas	The arrival of a charismatic young girl in a small town.			
8	s7	Movie	My Little Friend	Robert Curjel	Vanessa Hudgens, Kaitlyn	United States	September 2021	2021	PG	91 min	Children & Family Movies	Equestria is divided. But a bright-eyed girl is determined to bring them back together.			
9	s8	Movie	Sankofa		Haile Geri Kofi Ghanaba	United States	September 1993	1993	TV-MA	125 min	Dramas	On a photo shoot in Ghana, an American filmmaker meets a young girl who is also a filmmaker.			
10	s9	TV Show	The Great	Andy Delaney	Mel Giedroyc	United Kingdom	September 2021	2021	TV-14	9 Seasons	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
11	s10	Movie	The Starling	Theodore Melissa	Melissa McCarthy	United States	September 2021	2021	PG-13	104 min	Comedies	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
12	s11	TV Show	Vendetta: Truth, Lies and The Mafia			United States	September 2021	2021	TV-MA	1 Season	Crime TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
13	s12	TV Show	Bangkok	E Kongkiat	Sukollawat Kanarot	Thailand	September 2021	2021	TV-MA	1 Season	International TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
14	s13	Movie	Je Suis Kai	Christian Theodor	Luna Wedderburn	Germany	September 2021	2021	TV-MA	127 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
15	s14	Movie	Confession	Bruno Garcia	Klara Castanho, Lucca	Brazil	September 2021	2021	TV-PG	91 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
16	s15	TV Show	Crime Stories: India Detectives			India	September 2021	2021	TV-MA	1 Season	Crime TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
17	s16	TV Show	Dear White People	Logan Brown	Brooklyn Beckham	United States	September 2021	2021	TV-MA	4 Seasons	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
18	s17	Movie	Europe's Most Wanted	Pedro de Alcázar	Pablo Pinedo	Spain	September 2020	2020	TV-MA	67 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
19	s18	TV Show	Falsa identidad		Luis Ernesto	Mexico	September 2020	2020	TV-MA	2 Seasons	International TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
20	s19	Movie	Intrusion	Adam Salkov	Freida Pinto, Logan Lerman	United States	September 2021	2021	TV-14	94 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
21	s20	TV Show	Jaguar		Blanca Suárez, Iván	Spain	September 2021	2021	TV-MA	1 Season	International TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
22	s21	TV Show	Monsters	Olivier Megaton		United States	September 2021	2021	TV-14	1 Season	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
23	s22	TV Show	Resurrection	Ertugrul Engin	Alta Inanc	Turkey	September 2018	2018	TV-14	5 Seasons	International TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
24	s23	Movie	Avval	Shai K.S. Raviki	Kamal Hassan, Meenakshi	India	September 1996	1996	TV-PG	161 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
25	s24	Movie	Go! Go! Crazy	Alex Woo	Maisie Benson, Paul	United States	September 2021	2021	TV-Y	61 min	Children & Family Movies	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
26	s25	Movie	Jeans		S. Shankar	Prashanth	India	September 1998	1998	TV-14	166 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.		
27	s26	TV Show	Love on the Spectrum	Brooke Satchell		Australia	September 2021	2021	TV-14	2 Seasons	International TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
28	s27	Movie	Minsara K. Rajiv Men	Arvind Swamy, Kajol		India	September 1997	1997	TV-PG	147 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
29	s28	Movie	Grown Up Dennis	Duane Adams	Sanjay	United States	September 2010	2010	PG-13	103 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
30	s29	Movie	Dark Skies	Scott Stewart	Keri Russell	United States	September 2013	2013	PG-13	97 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
31	s30	Movie	Paranoia	Robert Luliam	Hemley	United States	September 2013	2013	PG-13	106 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
32	s31	Movie	Ankahi Ka Ashwini		Abhishek Banerjee,	India	September 2021	2021	TV-14	111 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
33	s32	TV Show	Chicago Party Aunt	Lauren Ash,	Rory O'Neil	United States	September 2021	2021	TV-MA	1 Season	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
34	s33	TV Show	Sex Education	Asa Butterfield		United Kingdom	September 2020	2020	TV-MA	3 Seasons	International TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
35	s34	TV Show	Squid Game		Lee Jung-jae, Park Hae-	South Korea	September 2021	2021	TV-MA	1 Season	International TV Shows	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
36	s35	TV Show	Tayo and Little Wizai	Dami Lee,	Jason Lee,	United States	September 2020	2020	TV-Y7	1 Season	Children & Family Movies	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			
37	s36	Movie	The Father	Daniel Kalmar	Anthony Hopkins	United States	September 2021	2021	TV-MA	110 min	TV Dramas	A young man rises to the top of a coaching center in a city known for its ruthless tactics.			

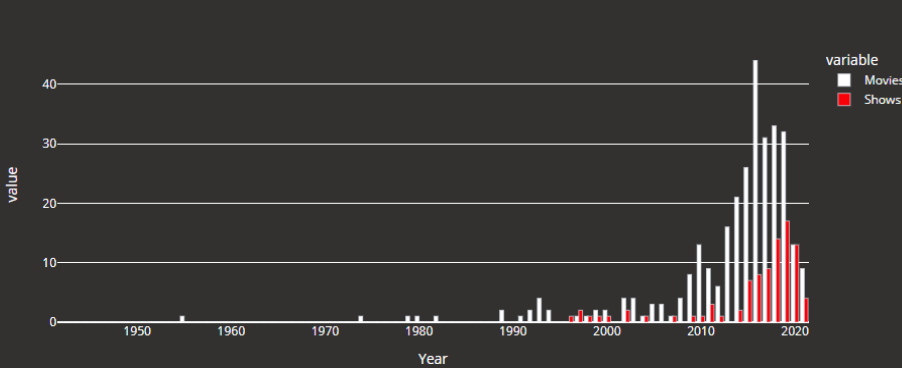
Netflix in Data

Visualisation of Netflix Movie and TV Show origins

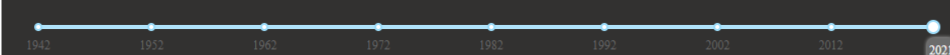
Content type: Movies Shows All
 Fixed color range: Fix Auto



Timeline: France



Years



type	title	director	rating	listed_in
Movie	The Women and the Murderer	Mona Achache, Patricia Tourancheau	TV-14	Documentaries, International Movies
TV Show	On the Verge		TV-MA	TV Comedies, TV Dramas
TV Show	Gone for Good	Juan Carlos Medina	TV-MA	Crime TV Shows, International TV Shows, TV Dramas
Movie	The Swarm	Just Philippot	TV-14	Horror Movies, Independent Movies, International Movies
TV Show	Lupin		TV-MA	Crime TV Shows, International TV Shows, TV Action & Adventure
Movie	Tragic Jungle	Yulene Olaizola	TV-MA	Dramas, Independent Movies, International Movies

Today:

- Preprocessing, preparing dataframes
- Preparing individual components
- Additional visualization tasks (defined in the notebook)

