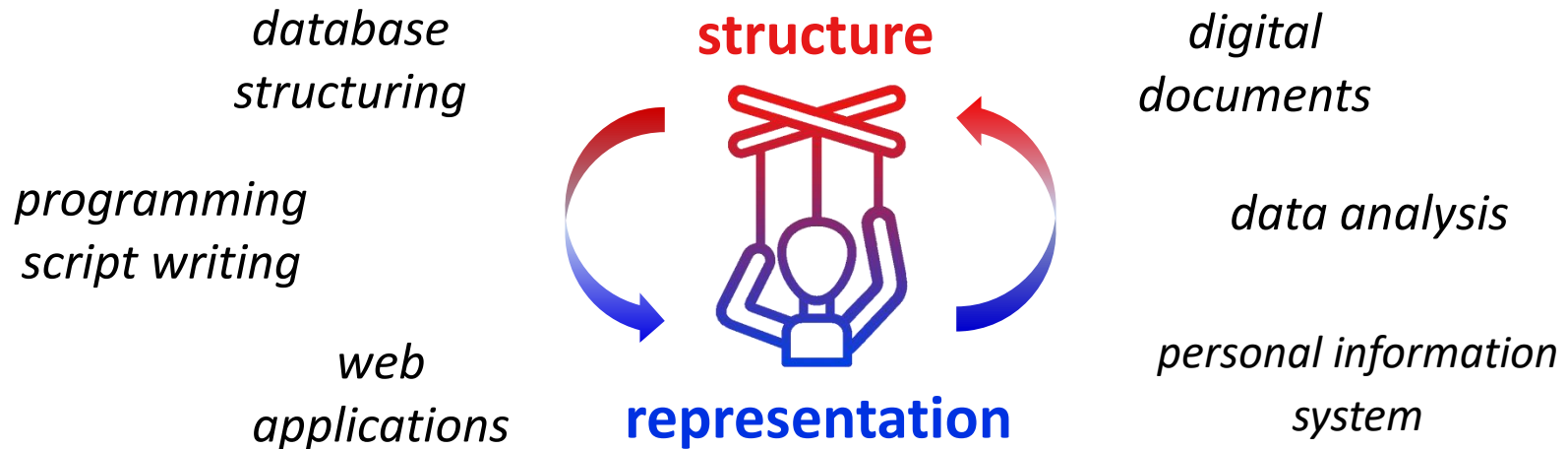


Véronique Gendner - *Information Design Full Stack*

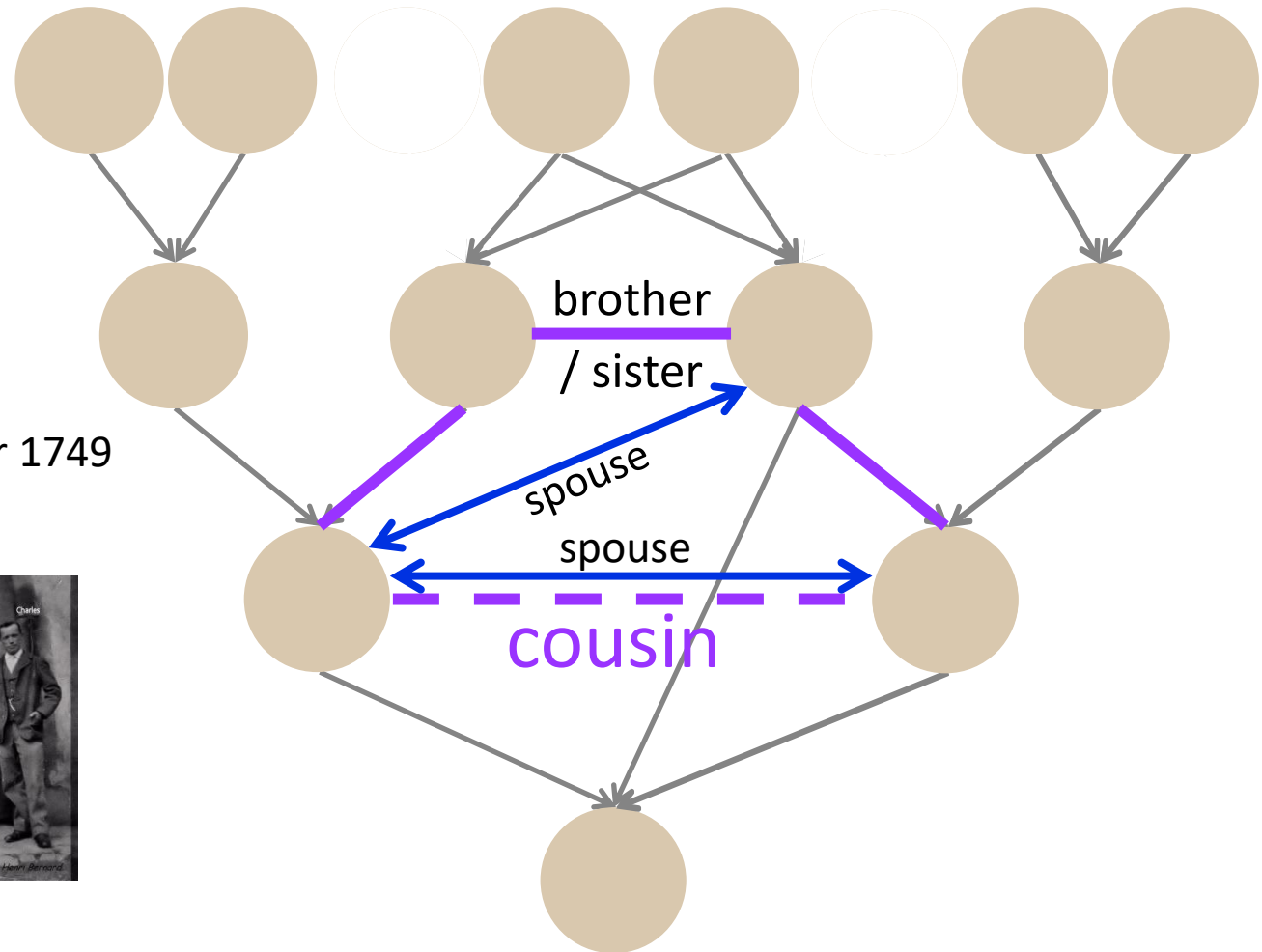


Genealogy with different graph technologies for data collection & visualization

Collecting and structuring information

Marie Weasley
born in 1749

Birth certificate
-> born 29 December 1749





Rich text editor toolbar with icons for bold, italic, underline, strikethrough, text color, background color, font size, bulleted list, numbered list, link, unlink, table, link icon, Attach, R-B, ABC, and a word count indicator showing 0 words.

Right sidebar area containing a white text input field at the top and a grey panel below it.



Good :

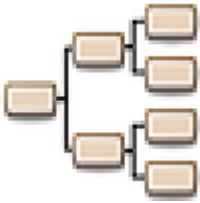
- Excellent **UI for data collection** : easy drag&drop of documents and links
- Easy to structure incoming information **without having to follow a strictly formal order** (table, hierarchy). Collect as it comes, according to user's agenda.
- **Several search strategies** : instant search (go anywhere in the graph), browsing relations (follow relations), by lists (exhaustive check)
- Good for node local display around a node



Limits :

- **Difficult to get the big picture**, to take stock of what has been done and what can be explored further
- **Difficult to visualize distant relations**: visualization enables specific cognitive skill that help put things in relation, hence giving them their symbolic place, which helps understanding

NB: visualizing how thing relate is part of the understanding process for any subject you want to learn



Gramps visualization



picture
for visual identification

date and place of
marriage

Weasley, Sophie Adolphine, née ^Thyme
(5 oct 1800 – 30 mars 1875)
Poudlard


Weasley, Jean Frédéric
(25 mai 1803 – 12 mai 1875)
Poudlard

Finnigan, Paisible Rosalie, née ^Finnigan
(6 juil 1812 – 17 juil 1886)
Poudlard

Finnigan, Jean Emmanuel
(2 mai 1813 – 25 janv 1892)
Poudlard

2 déc 1829
Poudlard

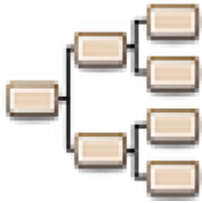
17 janv 1838
Poudlard

 Weasley, David Henri
(28 oct 1831 – 22 févr 1924)
Poudlard

 ^Finnigan, Weasley, Marie Thérèse
(27 avril 1840 – 4 févr 1918)
Poudlard

5 oct 1862

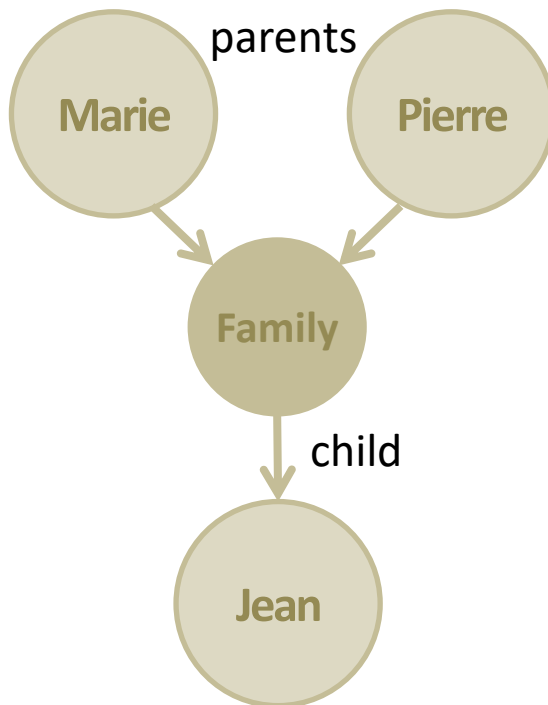
dates and places
of birth and death



Gramps import formats

Persons, with gender, dates and places of birth and death

```
Person, "Surname", "Firstname", "gender", "Birthdate", "Birthplace", "Deathdate", "Deathplace"  
[I1970], "Weasley", "Marie", "feminin", "16 nov 1836", "Paris", "30 oct 1912", "Paris"  
[I1974], "Weasley", "Pierre", "masculin", "3 juin 1939", "Strasbourg", "11 fév 2015", ""  
[I2786], "Weasley", "Jean", "masculin", "13 mars 1963", "Strasbourg", "", ""
```



Family, with marriage date and place

```
marriage, "father", "mother", "date", "place"  
[F1652], "[I1974]", "[I1970]", "22 oct 1917", "Paris"
```

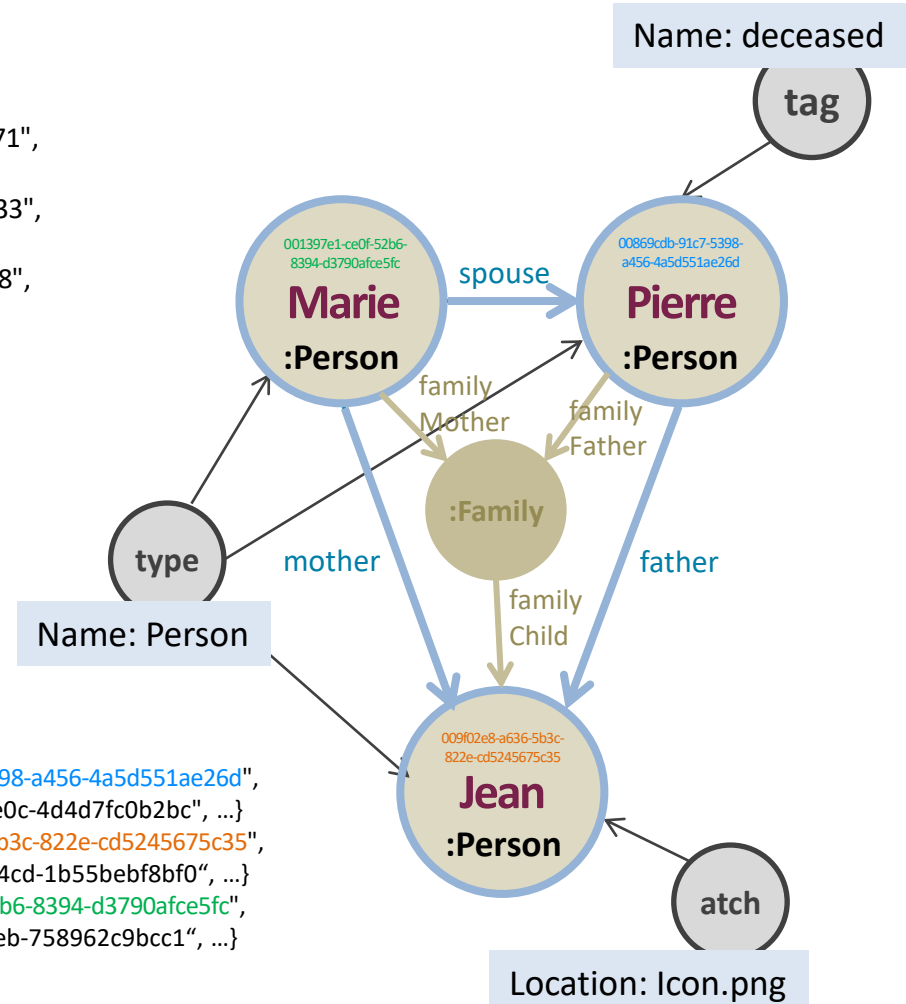
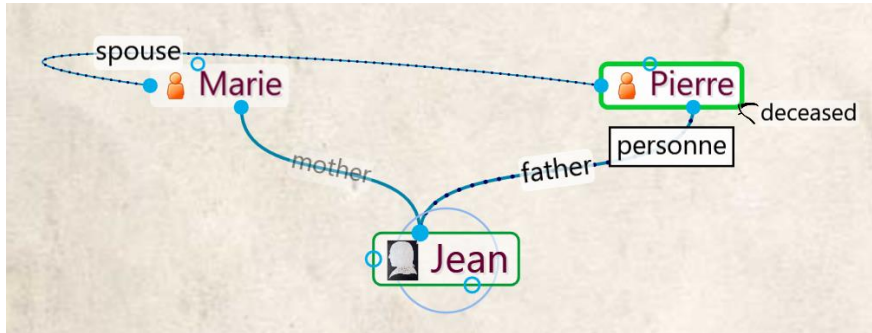
Children

```
Family, Child  
[F1652], [I2786]
```

Neo4j DB model

Thoughts.json (nodes)

```
{
  "Name": "Annie",
  "TagIds": [],
  "CreationDateTime": "2022-10-24T09:21:56.1339771",
  "Id": "001397e1-ce0f-52b6-8394-d3790afce5fc",
  ...
},
{
  "Name": "Pierre",
  "TagIds": [],
  "CreationDateTime": "2022-10-24T09:21:56.1778733",
  "Id": "00869cdb-91c7-5398-a456-4a5d551ae26d",
  ...
},
{
  "Name": "Jean",
  "TagIds": [],
  "CreationDateTime": "2022-10-24T09:21:55.7606218",
  "Id": "009f02e8-a636-5b3c-822e-cd5245675c35",
  ...
}
```



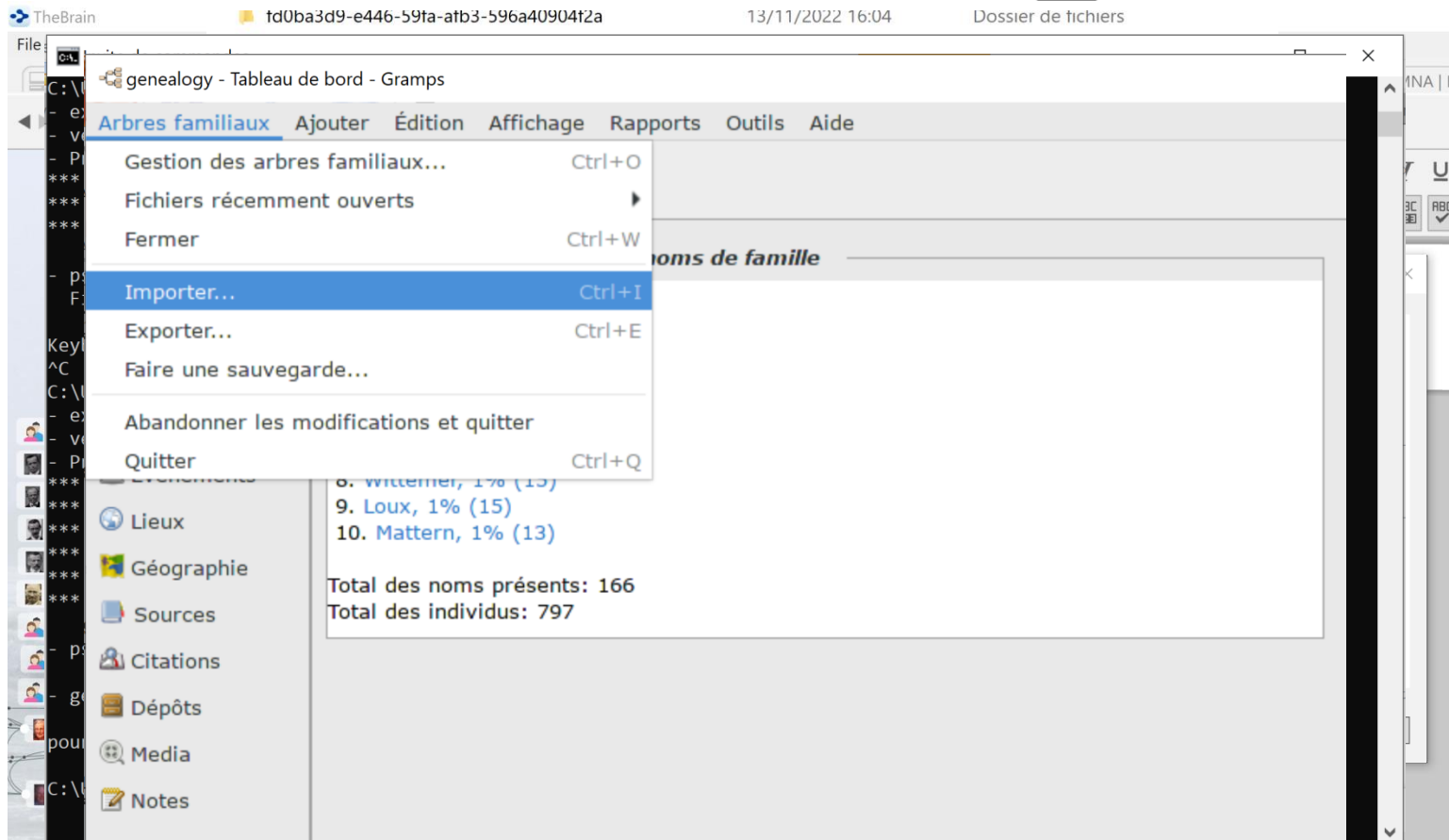
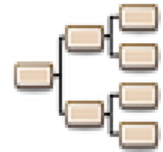
Links.json

```
{
  "ThoughtIdA": "001397e1-ce0f-52b6-8394-d3790afce5fc",
  "ThoughtIdB": "00869cdb-91c7-5398-a456-4a5d551ae26d",
  "Id": "00282afc-18ff-5acf-aaba-fbc3e9a721bd",
  "TypeId": "54a71199-35a2-5925-8e0c-4d4d7fc0b2bc",
  ...
},
{
  "ThoughtIdA": "00869cdb-91c7-5398-a456-4a5d551ae26d",
  "ThoughtIdB": "009f02e8-a636-5b3c-822e-cd5245675c35",
  "Id": "00282afc-18ff-5acf-aaba-fbc3e9a721bd",
  "TypeId": "bed27826-9e8e-550a-94cd-1b55bebf8bf0",
  ...
},
{
  "ThoughtIdA": "009f02e8-a636-5b3c-822e-cd5245675c35",
  "ThoughtIdB": "001397e1-ce0f-52b6-8394-d3790afce5fc",
  "Id": "00282afc-18ff-5acf-aaba-fbc3e9a721bd",
  "TypeId": "49f10e3f-49f8-55e3-a3eb-758962c9bcc1",
  ...
}
```

Use of graph topology to create gramps model

```
match (f:Person) -[:father]->(c:Person) <-[:mother]-(m:Person)
merge (m) -[:familyMother]->(:Family {Name:f.Name+" & "+m.Name}) <-[:familyFather]-(f)
merge (f) -[:familyChild]->(c);
```

Data transfer



Generating visualizations with Gramps

genealogy - anonyme - Tableau de bord - Gramps

Arbres familiaux Ajouter Édition Affichage **Rapports** Outils Aide

Livres...

Graphique de lignées familiales - Diagrammes - Gramps

Graphique de lignées familiales

Individus recherchés Inclure **Couleurs de la famille** Individus

Nom	Couleur
Londubat	#d6dbe8
Ollivander	#9dc7f3
Potter	#f9d7a6
Weasley	#d9aade
Granger	#d6dbe8

Couleurs des familles :

Options du document

Format de sortie : PDF (Ghostscript)

Ouvrir aussitôt avec le logiciel par défaut

Fichier : C:\Users\VG\Desktop\Jean Waesley.pdf

Aide Annuler Valider

Prêt

1. Weasley
2. Finnigar
3. Lovegood
4. McGonagall
5. Granger
6. Ollivander
7. Londubat
8. ??, 2%
9. Quirrell
10. Poudlard

Total des n...
Total des in...

ique. Comme les autres
fonctions efficaces et

s-users

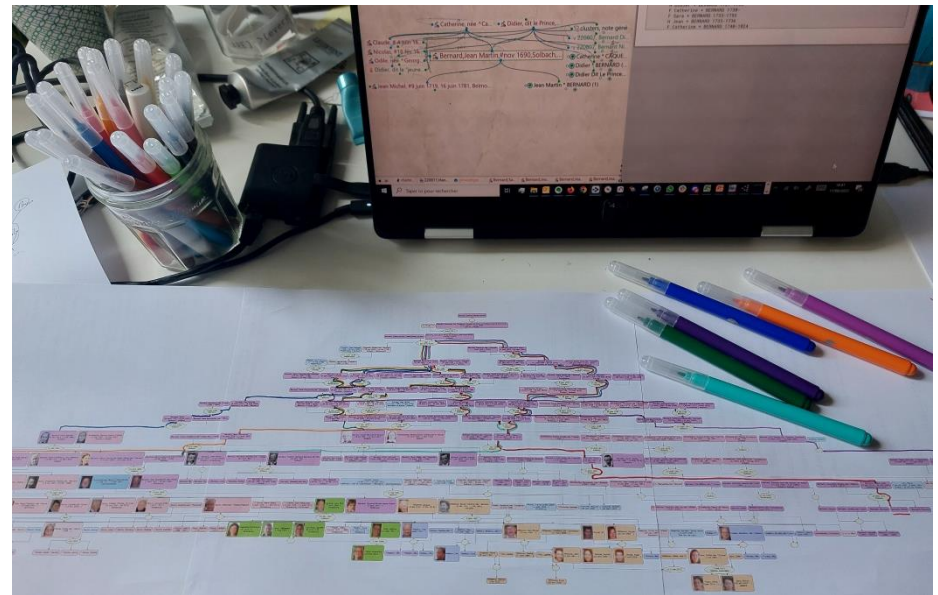
ire des copies et les
loppé et maintenu par
ut est d'associer sa

e familial (une base de
s le menu, choisissez
ouveau » et donnez un
, lisez les informations

ord », dans lequel vous
ez également ajouter des
barre inférieure, avec un
simple clic du bouton droit de la souris sur l'onglet.

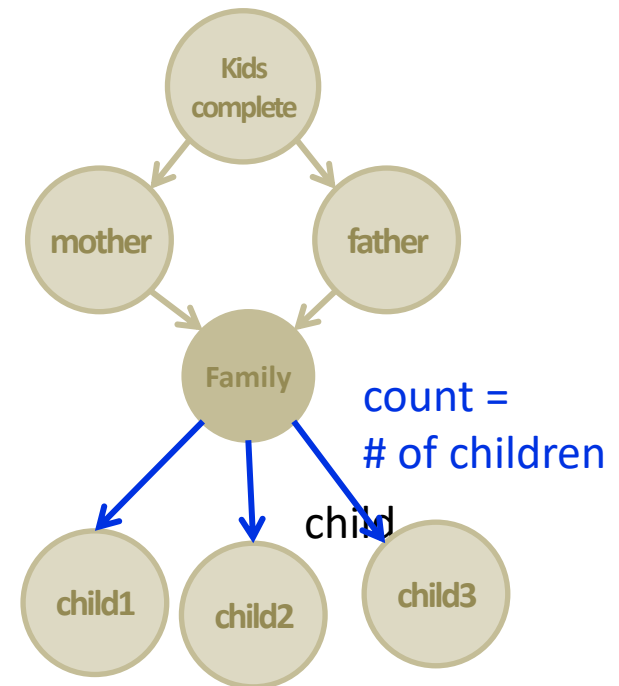
Gramps visualisation limits

- Node color according to family name:
 - Tedious to list names,
 - Only at the beginning of the name string -> pb for spouse/birth names of women
- No way to show path to common ancestor with path color
- No possibility to use cypher fine-tuned queries
 - Ignore a specific person's descendant to make another part of the graph more visible
 - ...



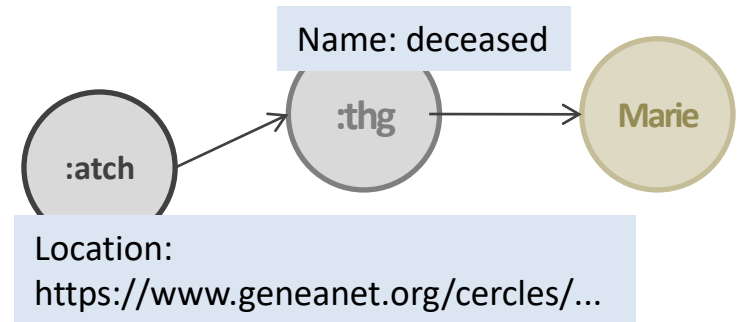
Use of graph topology to compute new information

- In the Neo4j DB, cypher allows
 - for coherence checks
 - to detect missing information and manual errors
- Computation of new information
 - # of children of couples
 - How many cousin did my great grand father have ?
 - # of person from father/mother side
 - All people with a certain last name in the descendance of the first ancestor with that name ?



Use of graph topology to extract specific information (1/2)

- Extract death certificate sources :



```
match (a:atch)--(n:thg)--(p:Person) where n.Name contains "deceased" and
a.Location contains "http"
return p.Name as Person, collect(a.Location) as `death source url`
```



	Person	death source url
1	"Dursley,Christiane,née ^Lockhart"	["https://www.geneanet.org/cercles/view/colgneccminsee/19452435"]
2	"Poudlard,Albert"	["https://www.geneanet.org/cercles/view/colgneccminsee/13067503"]
3	"Sesame,Madeleine Rosalie,née ^Weasley"	["https://www.geneanet.org/cercles/view/colgneccminsee/7798007"]
4	"Botruc,Rose,née ^Weasley"	["https://www.geneanet.org/cercles/view/colgneccminsee/14876533"]
5	"Lovegood,Jérôme"	["https://www.geneanet.org/cercles/view/colgneccmccg/14609512700", "https://archives.b"]
6	"Weasley,Georges Henri"	["https://www.geneanet.org/cercles/view/colgneccminsee/11658651"]



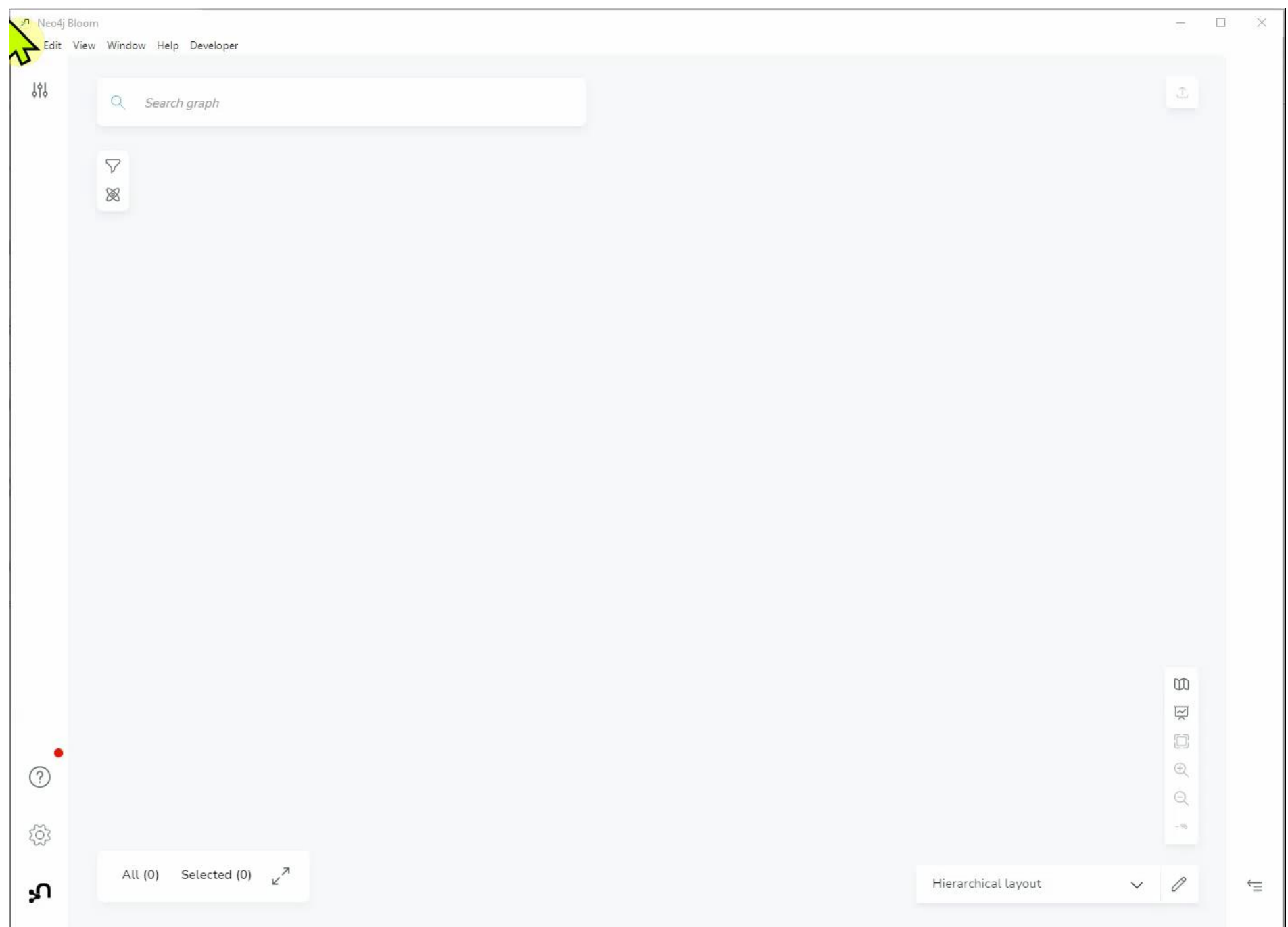
Use of graph topology to extract specific information (2/2)


- Extract list of source geneanet account


with many thanks to people who put archives information online !

```
RETURN distinct apoc.text.regexGroups(a.Location, 'geneanet.org/([^\?]+)?')[0]  
[1] as account ,count(a) as `pages count` order by `pages count` desc
```



	account	pages count
1	"dspehner"	86
2	"gcaro"	49
3	"eve71"	47
4	"eweiser"	29
5	"mge1951"	26
6	"daniel92700"	22
7	"pganiere"	22
8	"eenglert"	15
		...



 **data explorer**
Explore your Neo4j database!


built with  yFiles

RECENT CONNECTIONS

 localhost Last Login: 16/11/2022 14:35:09	
--------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

Import connection from settings file:

Privacy information: The database data is transferred directly to your computer and will not be sent to a server.
[Terms of Use](#), [Privacy Policy](#)

Install in Neo4j Desktop 

Information

Select a single Graph Element to see its details.

proudly made with  yFiles

Wrap up

With this genealogy use case, we have seen that:

- **Graphs** are very interesting to **collect and structure information intuitively**, as it comes
- Recent developments of **graph technologies** allow to apply **automatic formatting, coherence checks and corrections** on such manually structured data
- This way, you can get the **best of both human thinking and machine processing combined**
- Different **visualization tools** are best, either for local information collection and structuring, or for large overview to make sense of complex data and distant relations

Thank you for your attention !

e-tissage.net/NODES2022



veronique.gendner@e-tissage.net



@v2belleville



<https://discord.gg/neo4j>



<https://www.linkedin.com/in/veroniquegendner/>

Véronique Gendner