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Taller de Visualización Analítica para la  
Exploración de Datos

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Bioinformatics Service

Servicios:

- Data analysis
- Storage and Data Processing Service of research data
- Formation
- Scientific programming



Programa investigador de contratación de personas jóvenes demandantes de empleo en la realización de iniciativas de investigación e innovación, en el marco del Plan de Recuperación, Transformación y Resiliencia.

Personal técnico de apoyo a la investigación por las universidades públicas de Castilla y León


Programas de Técnicos de Apoyo a la Investigación (PTA2022-022270-I) del Ministerio de Ciencia Innovación y Universidades

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R PACKAGES – DATA VISUALIZATION




looking4clusters

D<sup>3</sup>GB Browser

RD3plot


RJSplot



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Visual Analytics



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Visual Analytics


Visual Analytics: the science of analytical reasoning through the use of interactive visual interfaces<sup>1</sup>.

Present + Explore Information

- **Interactive:** make changes to the chart dynamically.
- **Evolutive:** ability to observe changes in successive periods of time or states.
- **Problem-solving:** manages information, represents it dynamically and answers questions.

**Interactive + Evolutive + Problem-solving**

[1] Thomas, J., Cook, K. Illuminating the Path: Research and Development Agenda for Visual Analytics. IEEE Press (2005)



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## Interactive Visualization

Interactive Visualization R Packages:

- Leaflet: Geo-spatial mapping
- dygraphs: Time series charting
- MetricsGraphics: Scatterplots and line charts with D3
- networkD3: Graph data visualization with D3
- d3heatmap: Interactive heatmaps with D3
- DataTables: Tabular data display
- threejs: 3D scatterplots and globes
- DiagrammeR: Diagrams and flowcharts

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## RJSplot

### Interactive Visualization

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## RJSplot

**RJSplot:** RJSplot is an R package allows the generation of interactive graphics. It brings together the data analytics power of R and JavaScript visualization libraries in a single package.

**Interactive**

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## rD3plot

### Analytical Networks

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## rD3plot – Analytical Networks

**rD3plot:** Represents and manages information from a database about a network. It also allows you to view the evolution of the added elements over time or in periods.

**Componentes:**

- **Nodes/Links:** Shapes, Images, Links.
- **Information:** Table, Name, Tooltip, Info Window.
- **Utilities:** Node Search, Filter, Display Customization, Playback Controls, Bar Charts.

**Interactive + Evolutive + Self-Analytical**

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## Information

**Information window**

**Name & tooltip**

**Table**

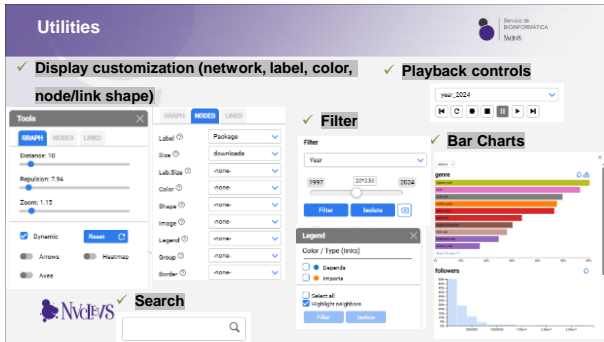
id	name	followers	probability	degree
1	Paula Paredes	10	0.1	1
2	Paula Paredes	10	0.1	1

**NvCEVS**

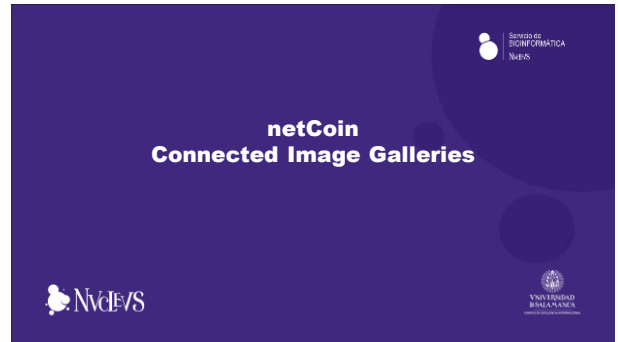
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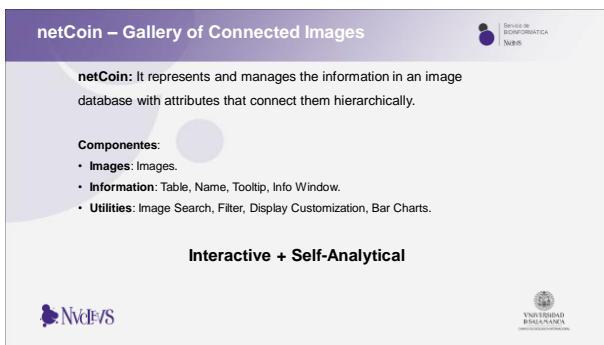
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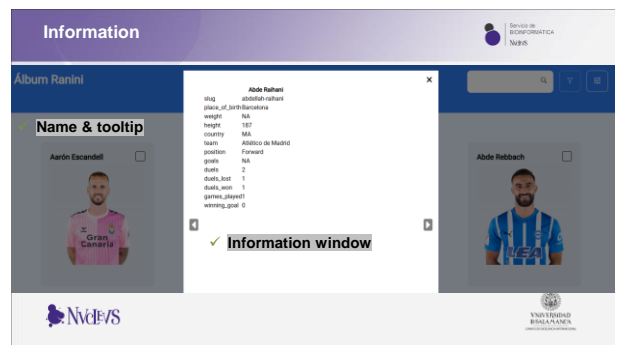
13



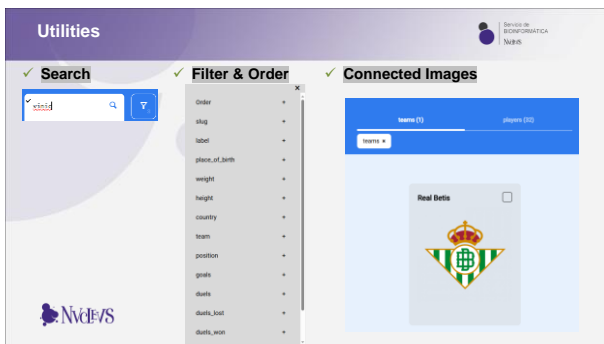
14



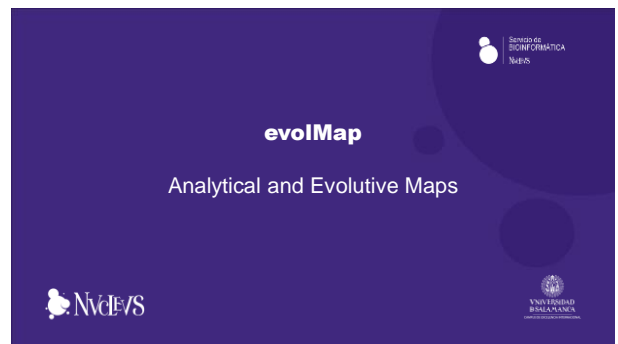
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## evolMap – Analytic Maps

**evolMap:** Represents and manages information from a database on an interactive geographic map. It also allows you to view the evolution of the added elements over time or in periods.

**Componentes:**

- **Entities:** Markers, Lines, Images, Shapes, Choropleths, Links.
- **Information:** Table, Name, Tooltip, Info Window.
- **Utilities:** Entity Search, Filter, Display Customization, Playback Controls, Bar Charts.

**Interactive + Evolutionary + Self-Analytical**



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## Entities

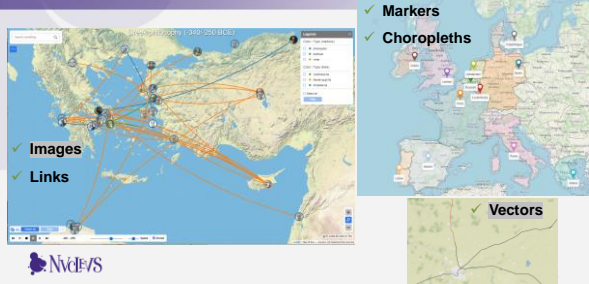

✓ **Markers**

✓ **Choropleths**

✓ **Images**

✓ **Links**

✓ **Vectors**



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## Information

✓ **Information window**

**Name & tooltip**

✓ **Table**

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## Utilities

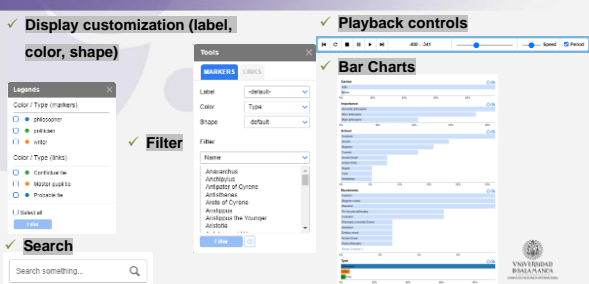

✓ **Display customization (label, color, shape)**

✓ **Filter**

✓ **Search**

✓ **Playback controls**

✓ **Bar Charts**

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Search something...

**Tools**

Layers

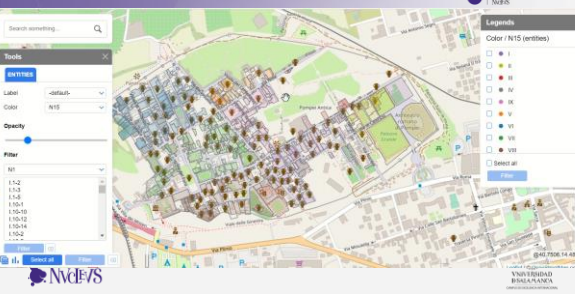

Opacity

Filter

**Legend**

Color / NIS (entities)

Filter

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## Pompeii - Code

```
library(evolMap)
library(sf)

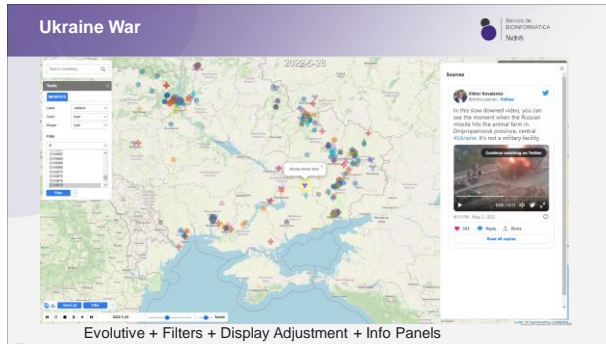
domi <- st_read('https://raw.githubusercontent.com/scraptoriv/pompeii/master/geojson/domi.geojson')

domi[["info"]] <- paste0("<iframe src='\"", sub("http:", "https:", domi[["N3"]]), "\"></iframe>")
domi$is.na(domi[["N3"]], "info") <- NA

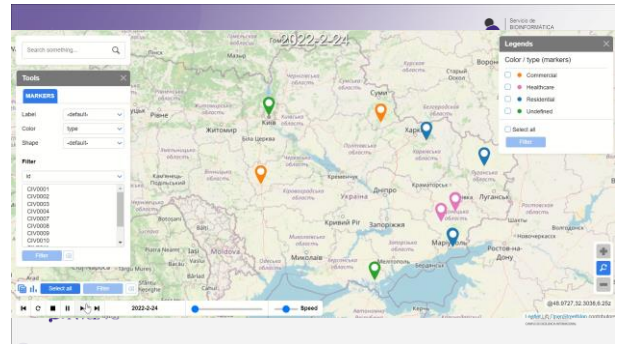
map <- create_map(center=c(40.750556, 14.489722), zoom=16)
map <- add_entities(map, domi, info="info")
plot(map, directory = "pompeii_domi")
```



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