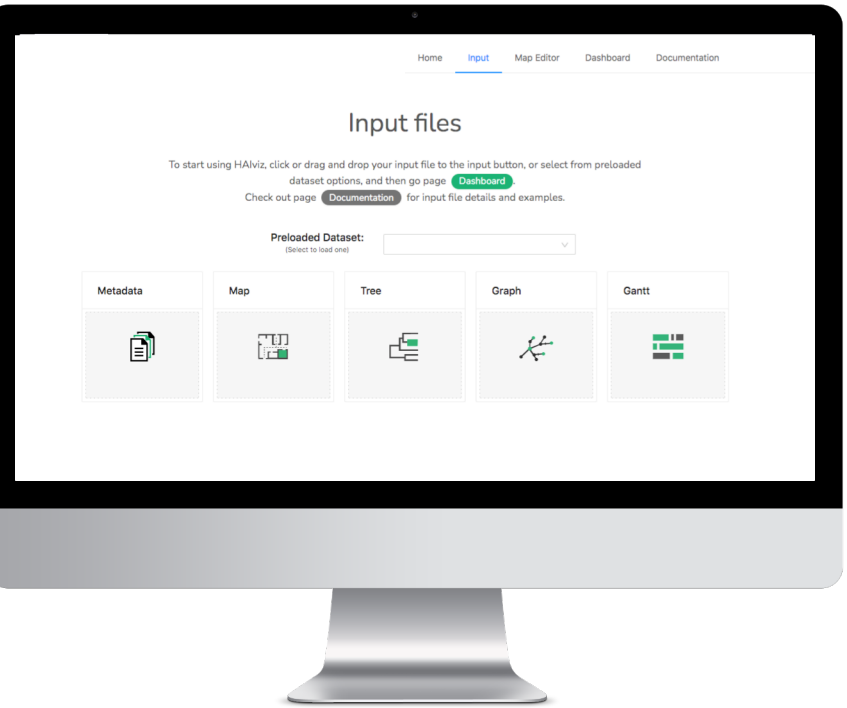
QUICK START GUIDE

HAIviz v1.0

Budi Permana

v.2023.08

Input Files



HAIviz is showing page ***Input*** . Users can click the file loader or drag and drop the files into the area. Input file will be parsed and validated, if file is valid, chart icon in page **Dashboard** will be activated.

Disabled **Activated**

Chart icon

Metadata

A table contains information about the isolates, written in CSV format. No duplicated records in column **id** and all dates must written in **ISO 8601** format (YYYY-MM-DD).

Mandatory columns (fixed header) **Other columns (optional, user-defined header)** **Color columns (optional, [column]:color)**

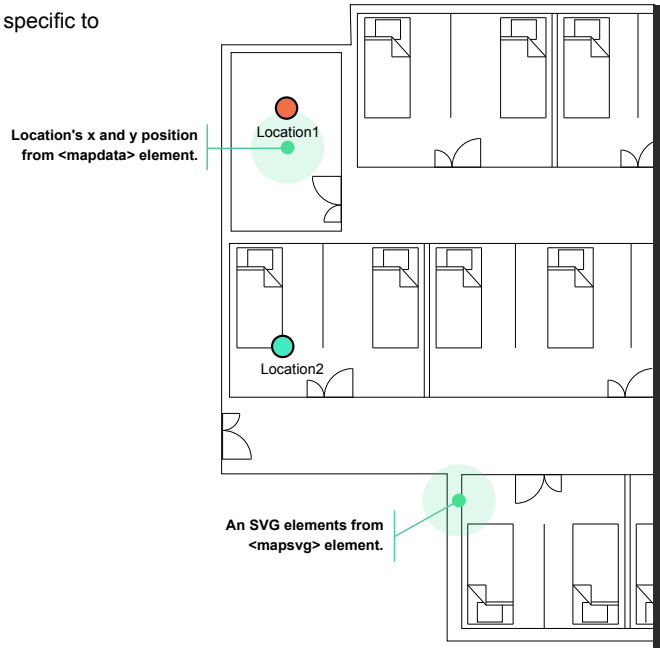
id	date	location	species	source	location:color	species:color
Isolate1	2019-12-20	Location1	Species1	Patient	blue	#9e0142
Isolate2	2019-12-21	Location2	Species2	Environment	lightgreen	#c12949

Local map

An XML file contains SVG element and location indexes. This file is specific to HAIviz and can be created in page **Map Editor**.

```
<?xml version="1.0" encoding="UTF-8"?>
<haivimap>
    <mapsvg>
        <svg
        version="1.1"
        xmlns="http://www.w3.org/2000/svg"
        xmlns:xlink="http://www.w3.org/1999/xlink"
        x="0px" y="0px"
        width="900px" height="500px">
        <!--SVG elements here-->
        </svg>
    </mapsvg>
    <mapdata>
        <location name="Location1" x="100" y="150"/>
        <location name="Location2" x="100" y="350"/>
    </mapdata>
</haivimap>
```

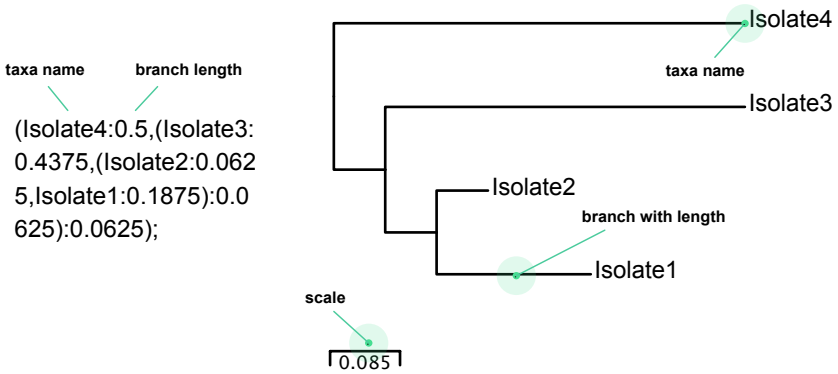
Example of recommended SVG attributes for HAIviz map editor.



Input Files (cont.)

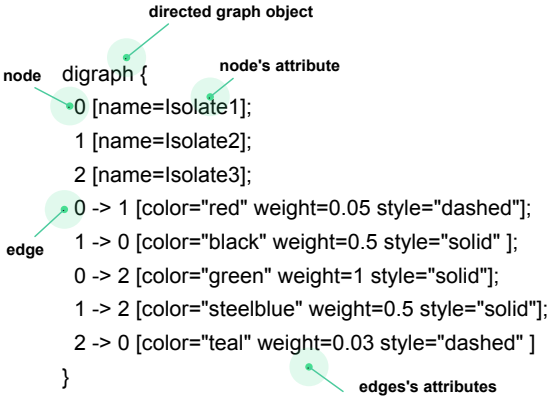
Phylogenetic tree

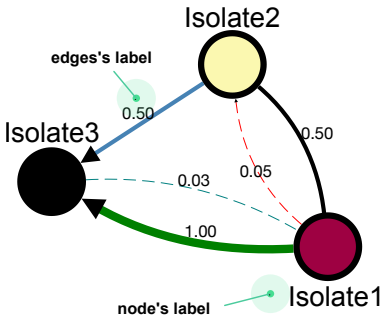
A Newick formatted phylogenetic tree file with **taxa name** (leaf label) and **branch length**.



Network (graph)

A text file describing a graph object written in **DOT** language.





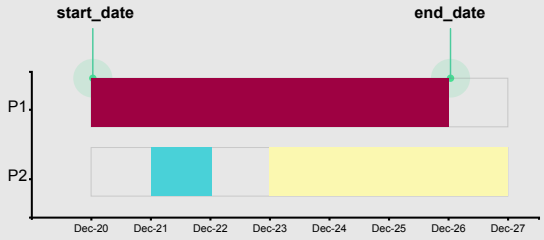
Movement timeline

A table file describing an individual movements (e.g. patient) from time to time at a single or multiple locations, written in **CSV** format. Column dates cannot empty and must written in **ISO 8601** format (YYYY-MM-DD), and **start_date** must be **less than or equal to end_date**.

Mandatory headers and columns

Optional

pid	start_date	end_date	location	location_color
P1	2019-12-20	2019-12-25	Location1	#9E0142
P2	2019-12-21	2019-12-22	Location2	#49D1D8
P2	2019-12-23	2019-12-26	Location3	#FBF8B0



Main Interface

Visualisation menu

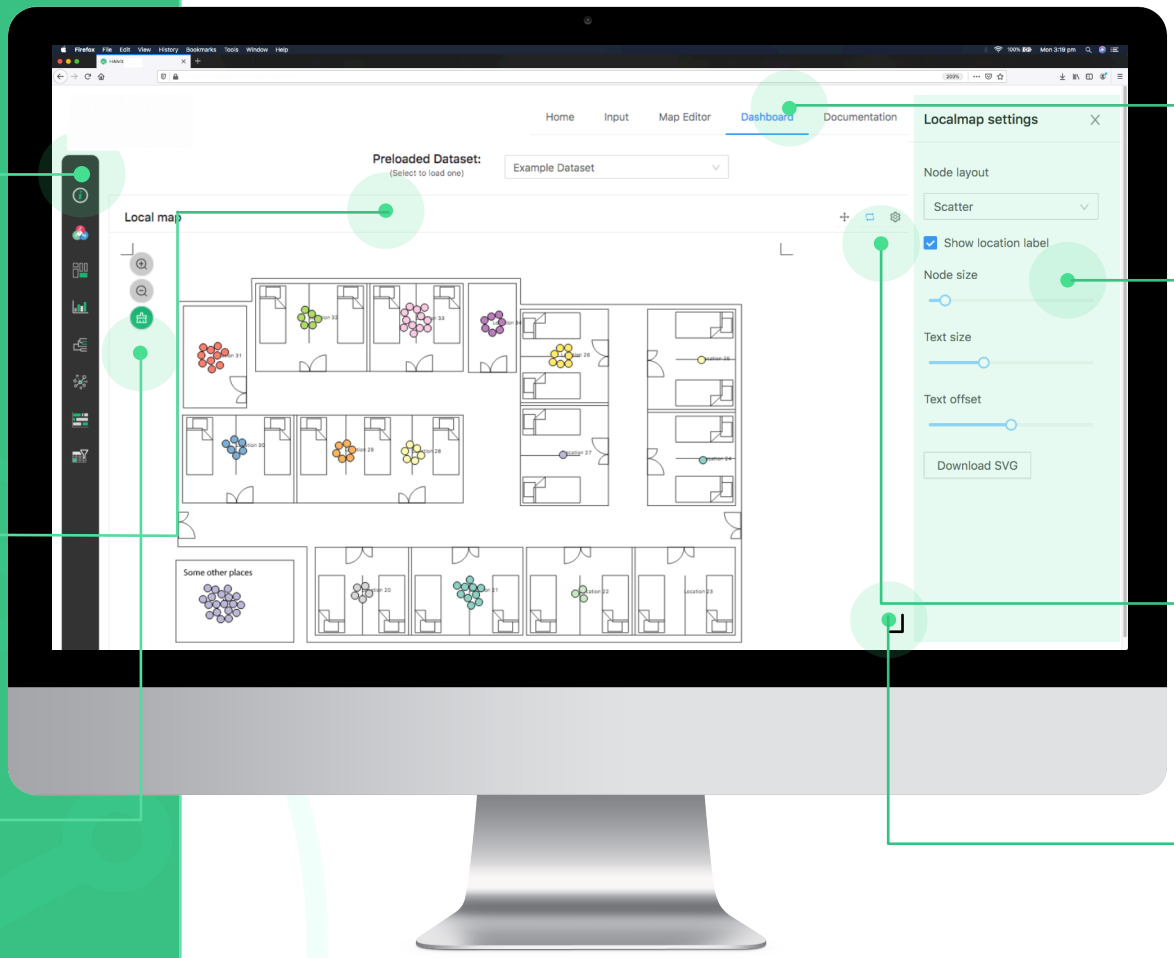
Host all visualisation windows. Each icon will be activated as soon as visualisation from your input file is ready. Click on the icon to display the window.

Visualisation window

A window container where the interactive graphics are being rendered. The window can be individually moved, resized and closed.

Visualisation controller

Let you change the current state of visualisation display, such as, zoom in, zoom out and clear data selection.



Navigation

The main application navigation to let you jump between pages.

Window settings

A side drawer provides you additional actions or settings related to the current window.

Window controller

(From left to right) Let you move the window, re-draw visualisation, open additional settings and close the window.

Resize controller

Let you change the current size of your visualisation window.

HAIviz is showing page Dashboard with map window displayed. Coloured nodes (circles) represent isolates clustered based in their location. Users can click, mouseover, zoom, pan, change the node layout, node size, location text size and download the the visualisation result.

Creating local map

HAIviz is showing page **Map Editor**. Users can start creating the map by **loading an SVG** image. To be properly displayed, the SVG file must include attribute of **width and height** in pixel unit (example of recommended attributes is given in page 1). When file is loaded, users can **add, rename, update or remove a location**. A final map can be saved using **download** for future use.

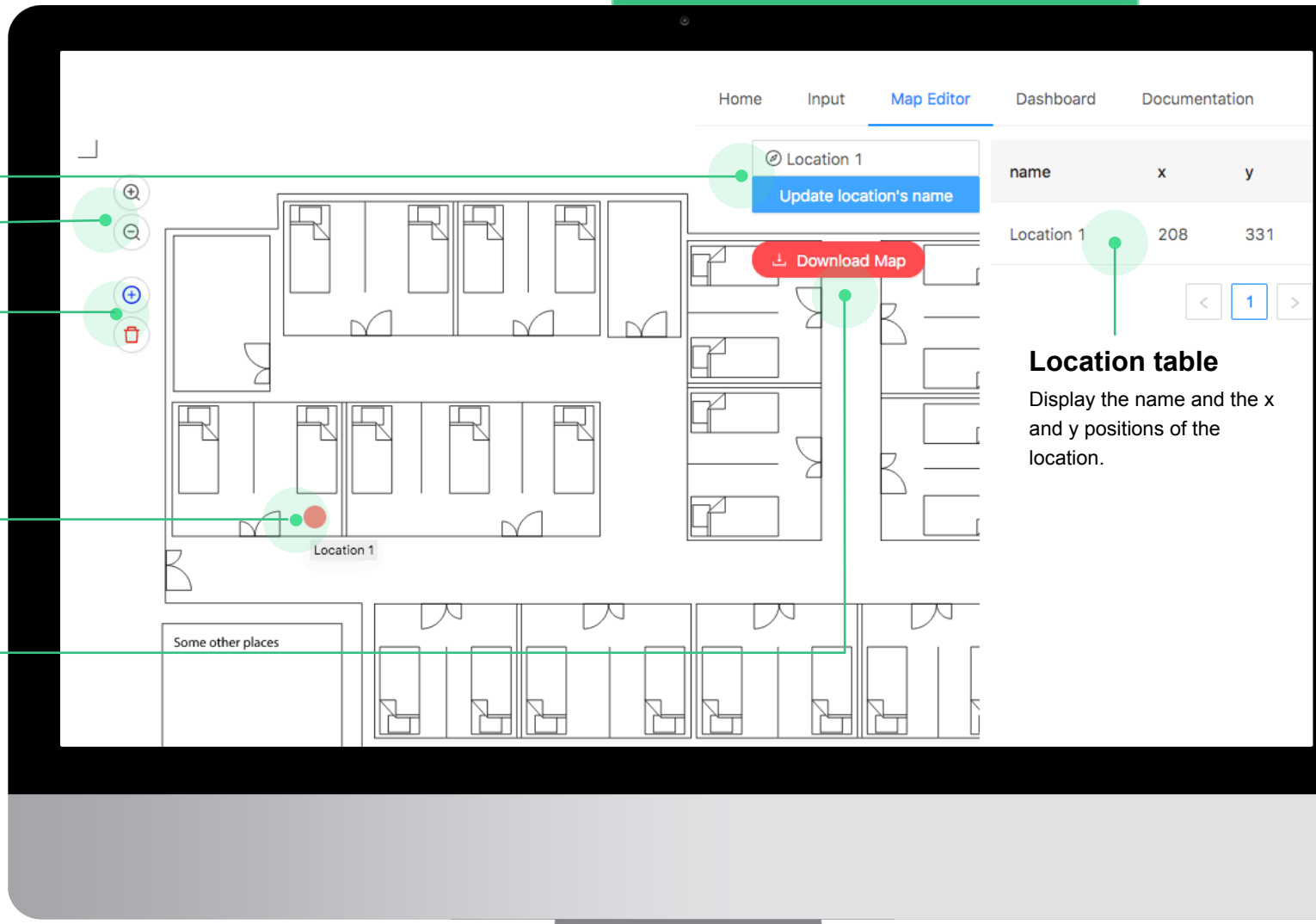
Location labeller
Let you enter and update the name of a location.

Zoom controller
Let you zoom in and zoom out the map.

Location logger
Let you add a new location and remove the selected location.

Location marker
To remove or update location name, users can click or drag to select the marker. Mouse over the circle will display the location label.

Map downloader
Let you download the map for later usage or load the map directly to HAIviz.

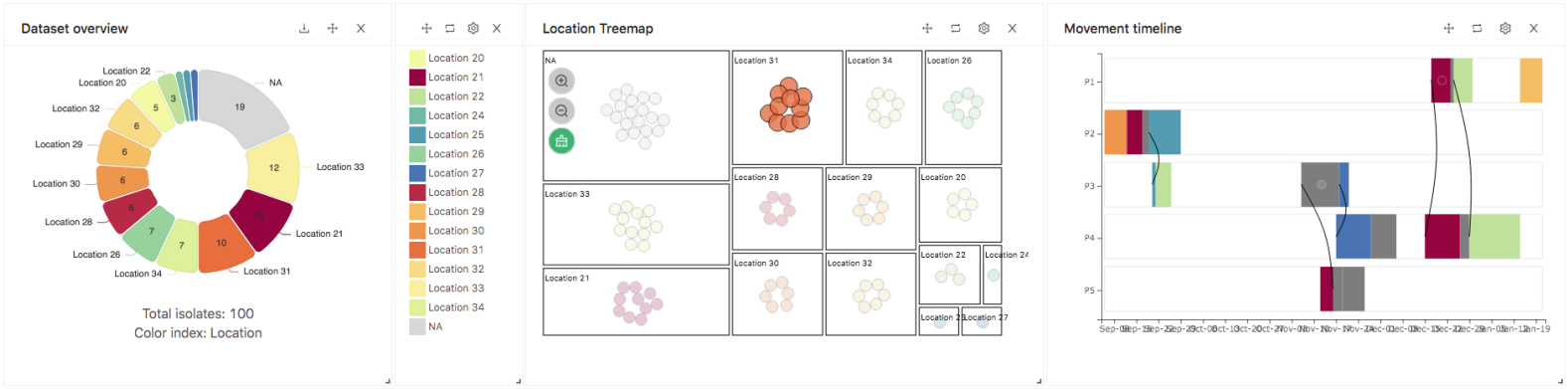


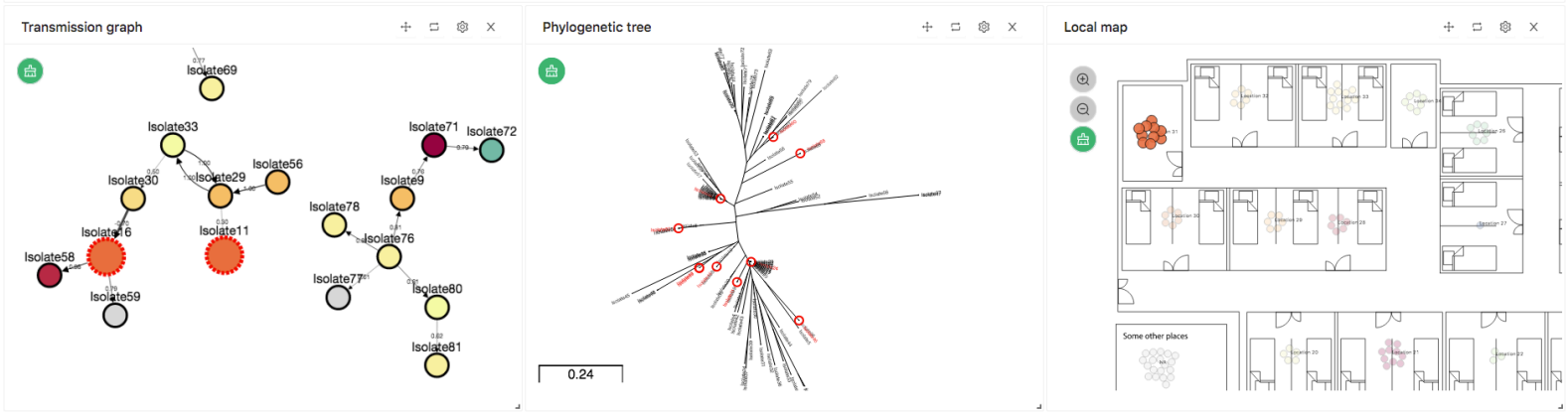
Location table
Display the name and the x and y positions of the location.

5 quick steps

1. Add a location
2. Move the location marker
3. Click or drag the marker
4. Enter the name and click update name
5. Download final XML map

Interaction And Integration





Isolates table

Number of selected isolates: **10** Reset

Name	Collection date	Source type	Source name	Species	Collection location	Profile 1	Profile 2	Profile 3
Isolate11	2018-11-19	Environment	Env5	Species1	Location 31	Sp1 NF	ResGeneB	NA
Isolate16	2019-01-08	Patient	P5	Species1	Location 31	Sp1 ST 17	ResGeneB	NA
Isolate24	2019-12-13	Environment	Env12	Species1	Location 31	Sp1 ST 78	ResGeneE	NA
Isolate46	2019-09-17	Environment	Env25	Species1	Location 31	Sp1 NF	ResGeneC	NA
Isolate49	2019-09-20	Environment	Env27	Species1	Location 31	Sp1 NF	ResGeneE	NA

< 1 2 >

- HAIviz is showing nine integrated and interactive visualisation windows created from an example dataset.
- To demonstrate integration functionality, isolates collected from Location 31 was all selected on location treemap window. This action will highlight all selected isolates on the other windows.
- Selection can also be performed in other windows, including using an interactive brush on temporal distribution window to create animation.
- Isolates table window provides filtering feature to enable users select the isolates based on the table columns. The table is also available to be downloaded as a CSV file.
- All images produced by HAIviz is ready to be saved to an SVG format, enabling quick and flexible editing for report and publication.

THANK YOU

for reading this guide

HAIviz
Healthcare-Associated
Infections Visualization Tool

Thanks to all awesome web frameworks and libraries run on the background, HAIviz is now up and running and available worldwide. The following are some of the core libraries used by HAIviz:

react
react-grid-layout
d3
antd
phylocanvas
phylocanvas-plugin-export-svg
phylocanvas-plugin-scalebar
cytoscape
cytoscape-svg
redux
react-color
@nivo
lodash
moment
moment-range
newickparser
dotparser
export-to-csv
uuid
xml-js
...