

Timely – A Domain Specific Language Extension of HTML to Visualize and Query Time Series Data using W3C Web Components

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Key Features:

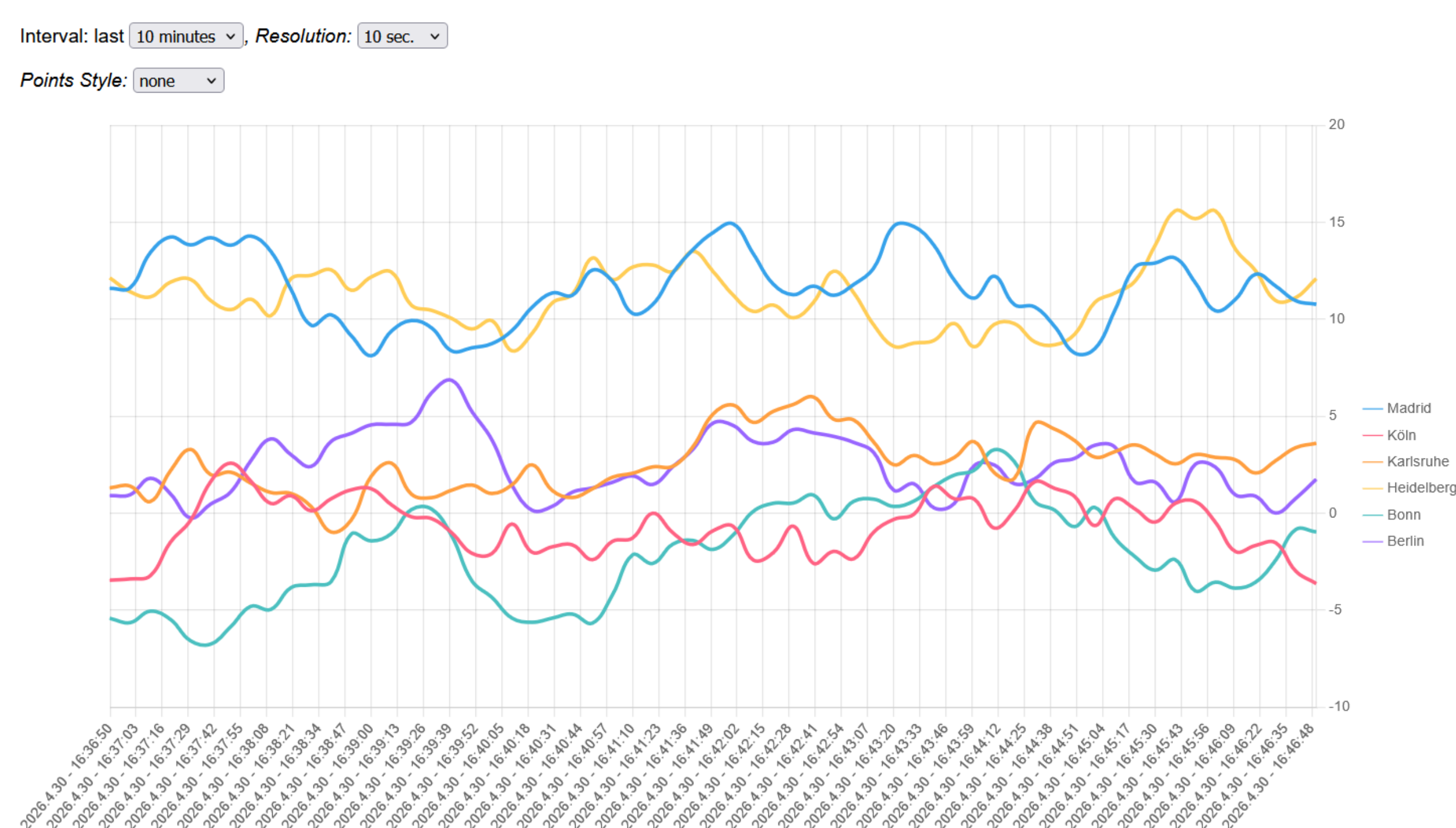
- Extension of HTML to access and visualize time-series data and metadata from an Influx database
- Based on W3C Web-Components standard [1]
- No framework required, can be included in any webpage
- Close integration/coupling with other HTML elements on the page (see example)
- Flexibly customizable using jq [2] transformations
- Supports cyclic requests
- Allows domain experts to set up their own pages based on their preferences and requirements

Implemented Web-Components:

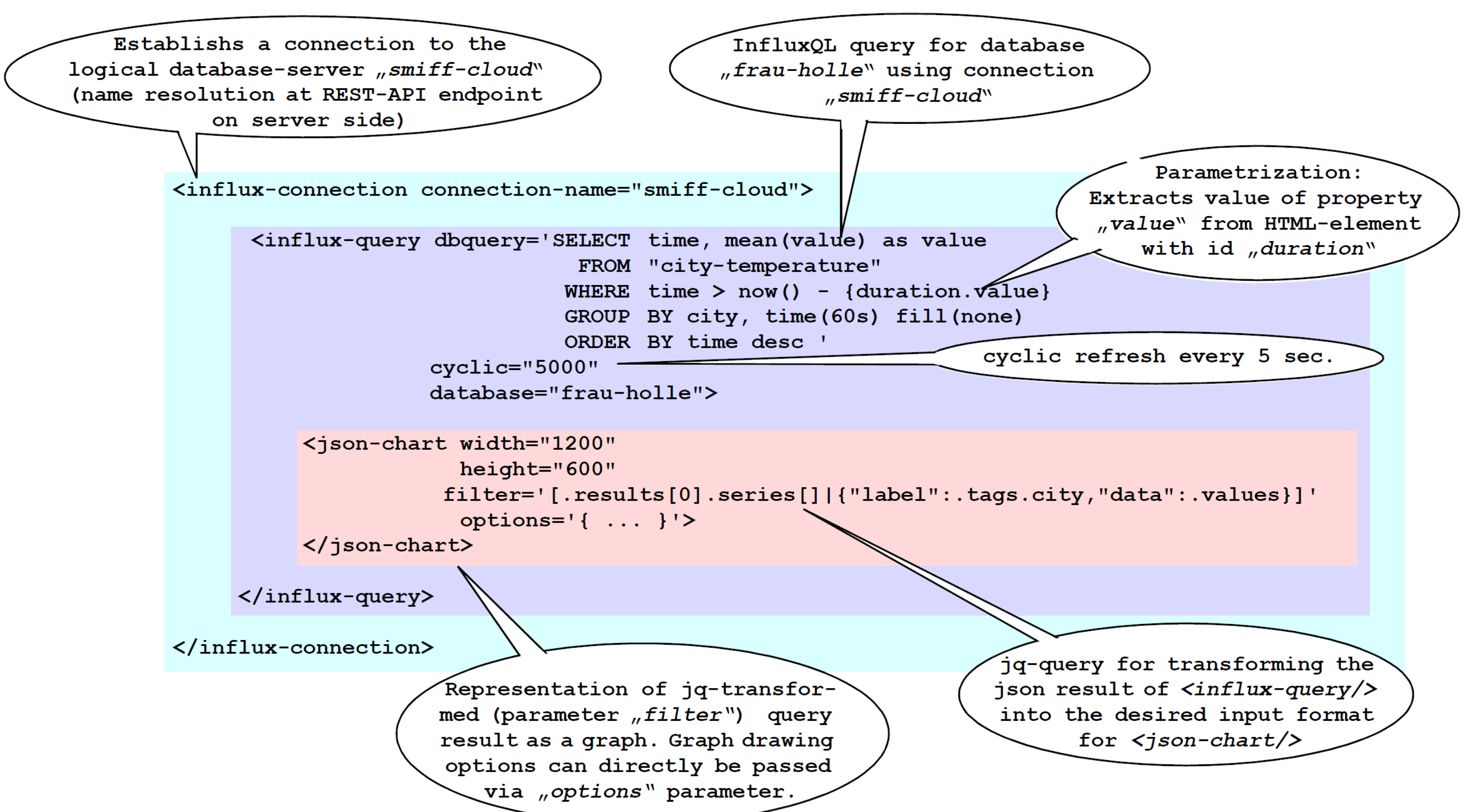
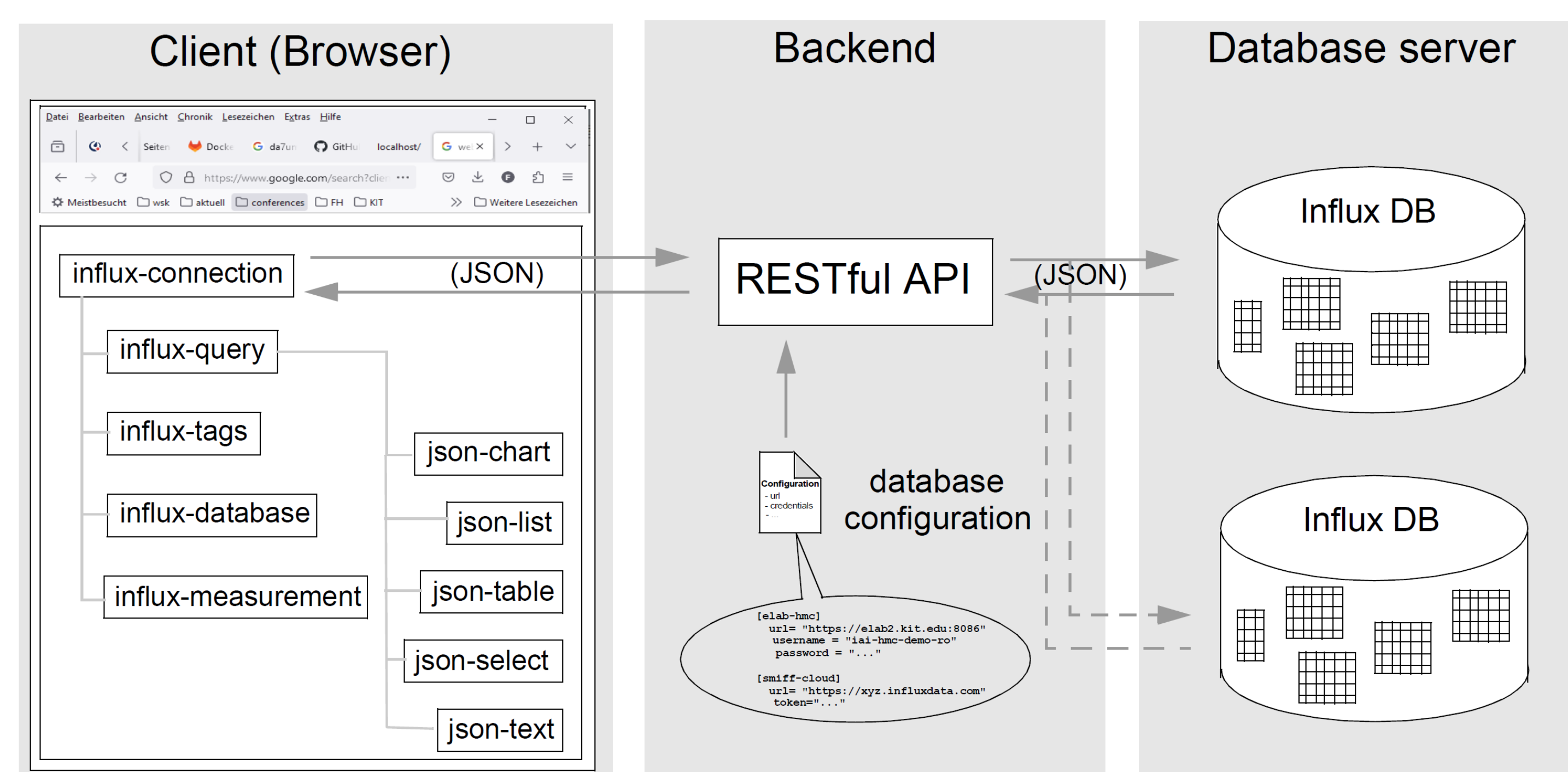
- Connection component (authentication, communication)
- Query component (InfluxQL)
- Metadata retrieval components (list connections, databases, measurements, tags/fields)
- Presenting the result as ...
 - table
 - graph (based on [3])
 - select-box/checkboxes
 - list-items
 - plain text

Example:

Influx Web components: `<influx-select>` query & `<json-chart>` visualisation



Architecture:



Future Work:

- Extend support for Influx DB V2, V3
- Add more CSS support
- Additional Web-Components that act as controllers in a MVC framework (storing data)
- Use of web sockets instead of cyclic reads
- Develop a wizard to support page creation

Acknowledgement

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References

- [1] Introduction to Web Components. W3C Working Group Note, 24 July 2014, <https://www.w3.org/TR/components-intro/>, last accessed: 20.4.2026
- [2] jq 1.8 Manual. <https://jqlang.org/manual/>, last accessed: 20.4.2026
- [3] chart.js, <https://www.chartjs.org/docs/latest/>, last accessed: 30.4.2026