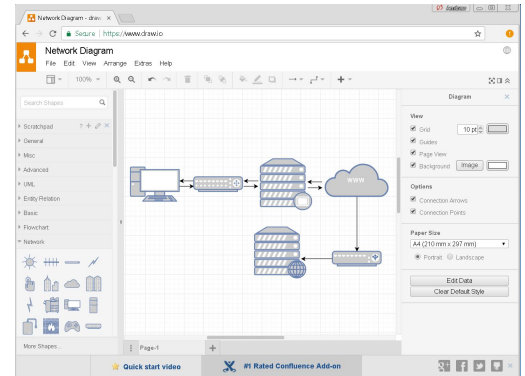


# Project 3 - Web based modeling editor

## Intro:

The SMV group is currently developing *CREST*, a graphical modeling language for the design of home automation, automatic plant growing and similar systems. While the first version of the language is being implemented in Python, a graphical editor is necessary for user friendly interaction.



## Goal:

The goal is to create a versatile and extensible prototype web editor for the representation of *CREST* diagrams. The development should be based on existing plotting and layout libraries (*D3.js*, *Cytoscape.js*, *ELK.js*). The features to develop include creation, modification and layouting of component-and-connector views, collapsing/uncollapsing of nested nodes and redrawing of information. Depending on the student's interests, it is possible to pursue three different specialisations of this project:

- layouting and visualisation of *CREST* diagrams: research into the optimal position of diagram elements to facilitate reading and information flow
- GUI design: evaluate different interaction opportunities within browser based graphical editors and facilitate object manipulation
- Backend communication: communication, synchronization and consistency between the web front-end with the *Python*-based backend

## Skills:

A sound knowledge of web technologies is essential for this project. Students are expected to be versatile with the fundamentals of HTML, CSS and JavaScript. Existing knowledge of modern web technologies such as React, Angular, Bootstrap, SASS, etc. are of advantage.

A basic knowledge of Python will be useful for the backend communication specialisation.

*This project can be chosen by several students researching into different specialisations individually.*

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