Some concepts to development in Webjive

Webjive Workshop

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SQUARE KILOMETRE ARRAY

Exploring the Universe with the world's largest radio telescope

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TypeScript



- TypeScript is a typed superset of JavaScript
- Allows to use strict types
- Support modern features (arrow functions, let, const)
- Extra features (generics, interfaces, tuple etc)



React.js



- JavaScript library created by Facebook
- Also used by Netflix & Instagram
- Used to create JS-driven dynamic web apps
- Can be compared to Angular.js & Vue.js



React Component



- Small, reusable piece of code that returns a React Element to be rendered to the page
- Similar to a JavaScript function
- Accepts arbitrary inputs, called "props", and return React element describing what should appear on the screen
- Have also a private data, called "state"
- A web page is a collection of independent components

Component properties



- React props are like function arguments in JavaScript and attributes in HTML
- The component receives the argument as a props object
- props are read-only
- props are used to pass data from one component to another as parameter

Component State



- state are Javascript Object
- Describe the current state of the component (data, UI-state)
- The state of a component can be updated over time
 - a modal could close
 - the data outputted could change
- When state object changes, the component re-renders



Component and props example





Component and state example

```
class Car extends React.Component {
 1.
       constructor(props) {
 3.
         super(props);
 4.
         this.state = {
 5.
          brand: "Ford",
          model: "Mustang",
         color: "red",
          year: 1964
10.
11.
12.
13.
14.
             <h1>My {this.state.brand}</h1>
15.
16.
               It is a {this.state.color}
17.
               {this.state.model}
18.
               from {this.state.year}.
19.
21.
22.
23.
24.
     ReactDOM.render(<Car />, document.getElementById('hello-example'));
25.
```

redux



- A layer on top on React.js
- Help with state management of the app
 - data in the app
 - UI state of the app
- Central data for all app data
- Any component can access data from it
- Makes state management easy



Redux





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Virtual DOM





Pipeline and tests

- Linting
 - eslint
 - ✓ @typescript-eslint/parser
 - ✓ @typescript-eslint/eslint-plugin
- Testing
 - 🖌 jest, ts-jest, enzyme
- Formatting
 - Prettier
- code coverage
 - 🖌 Jest
- dependency management

 npm
- CI/CD
 - ✔ GitLab pipeline













SKA - MaxIV Collaboration



- ✓ Products we are collaborating
- Planning Process
- Making Changes
- Testing (legacy code and new code)

Coding Standards and Programming La
 Documentation

All information regarding the collaboration are available in the SKA Developer Portal





Documentation

Webjive Official Documentation <u>https://webjive.readthedocs.io/en/latest/</u>

We are collaborating in writing doci

Official Webjive Documentation All new features are documented a

readthedocs portal

SKA related documentation All features related to SKA and We SKA Developer Portal

Webjive Documentation @SKA DEVELOPER PORTAL https://developer.skatelescope.org/projects/ska-engi neering-ui-compose-utils/en/latest/overview.html



SOLARE KILOMETR

Webjive Widge

Steps to get Webjive run How to quick start guide

Weblive Session

Basic steps to link Webjive to a real tango device

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Usage Joint Process fo Max IV and SK

TanzoGQL

Docs > WebJive

Docs . Weblive User Information

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Webjive User Information

The purpose of this guide is to provide new users of Webjive with information on the following

Overview of Webjive
 How to run Webjive locally

How to use Webjive and connect with the Tango devices

Overview

Weblye is a web-based program that allows a user to create a visual interface using widgets, which may include charts, numerical indicators or datis that interface to Tango device back end database. Details of how this is programmatically achieved is presented in a developer biased document which can be found at: https://developer.statelescope.org/projects/ka-engineering-ui-composeutikitern/atsst/device.html

Weighter was conceived and originally created by the MAX N synchrotron facility in Lund, Sveetin, During the early Uber Interface lateritefication and downseter presence conducted by the SAX.032-UI Buttons team, Weighter was highlighted as possible conditate to be taken forward as the platform upon which the SAX Displayment (burger lateration and the same sector) and the same sector of the same balance and the SAX Displayment (burger) thereface could be built. In early 2013 discussions balance in SAX V and GSG-UI Buttons taim coverses the SAX Weight was agreed that a collaborate relationizing could be taken forward to develop and maintain Weighter.

Logging into Webjive presents the user with a screen showing the available Tango devices that can be interfaced with and some general statistics regarding the connected Tango database. An example of this is shown in Figure 1.



Figure 1. Screenshot to show the Webjive screen when user goes to 'localhost:22484/testdb' in web browser.

Webjive Widgets

The right hand side of the web interface, as highlighted in figure 2, presents the Webjive widgets which can be utilised in the creation of the Engineering User Interface by the user .

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Write the documentation



- **Read** *the* **Docs** is the tool used to write documentation
- Think of it as Continuous Documentation
- All the documentation is contained into the /docs folder
- Autobuild Documentation every Merge Request accepted into the develop branch
- Latest documentation is published in the Official docs repository: <u>https://webjive.readthedocs.io/en/latest/</u>

Do you want to collaborate?





WE WANT YOU!



SICCK Join the #webjive channel on tango-controls.slack.com



Attend our periodic meeting (usually every two weeks)

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DEMO by Jonas Rosenqvist (Max-IV)

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www.skatelescope.org