Programming for the web

An introduction to front-end development with React

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Web development in bioinformatics

Uniprot

Alphafold-DB

JBrowse

NCBI BLAST

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Goal of this session

▶ Introduction to building *interactive* websites

Activities

▶ Familiarize yourself with main building blocks of a website

▶ Learn about modern toolchains and frameworks for the web

▶ Build your own interactive bioinformatics data visualization

Material

```
git clone https://github.com/holmrenser/introduction_to_react
```

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Assignment I

Explore two versions of a simple static website:

```
example/simple_site
example/simple_site_single_file
```

- ▶ Open the workshop folder in an IDE (e.g. VSCode)
- ▶ Open `index.html` in a web browser
- ▶ Click the button
- ▶ Explore the code
- ▶ *Discuss*

Some technical background

Javascript quirks I

Modern JS

- ▶ frameworks
- ▶ transpiling
- ▶ component re-use
- ▶ state management
- ▶ AJAX

Assigment II

Build a React app for visualizing MSAs