building a component framework

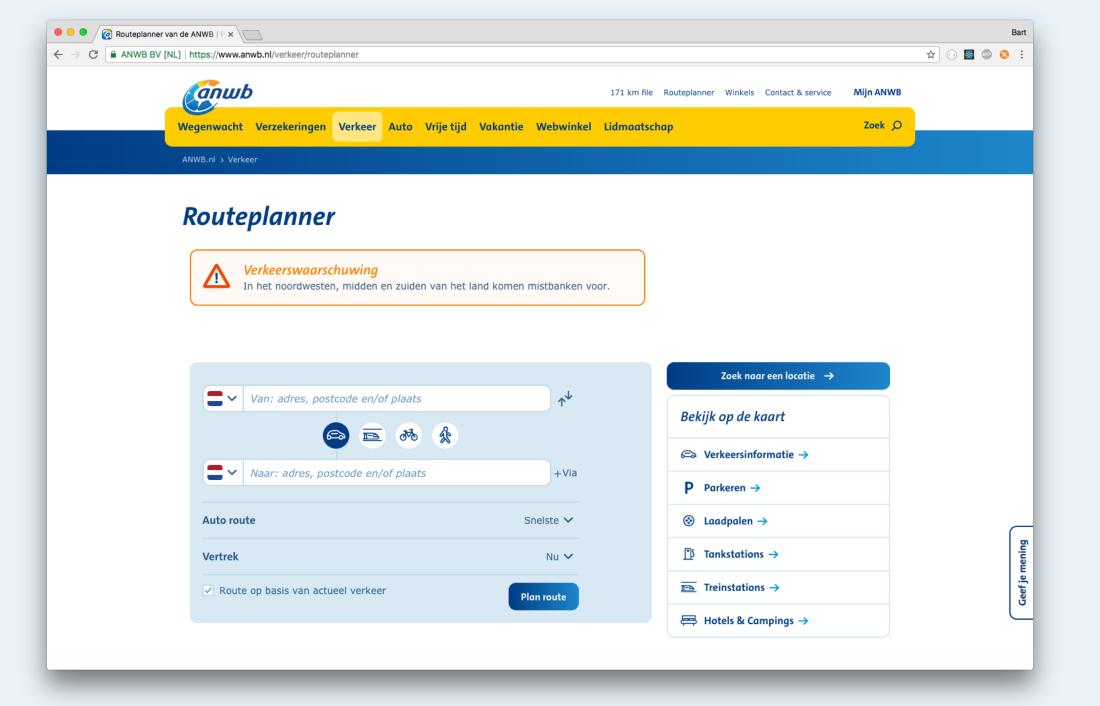


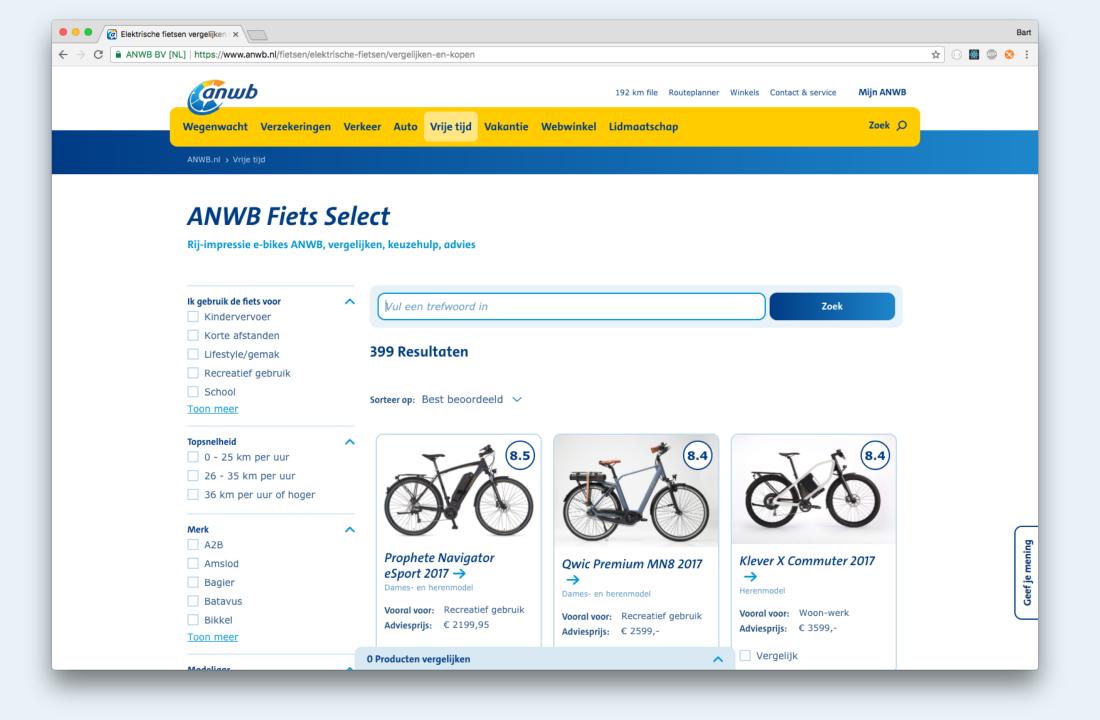


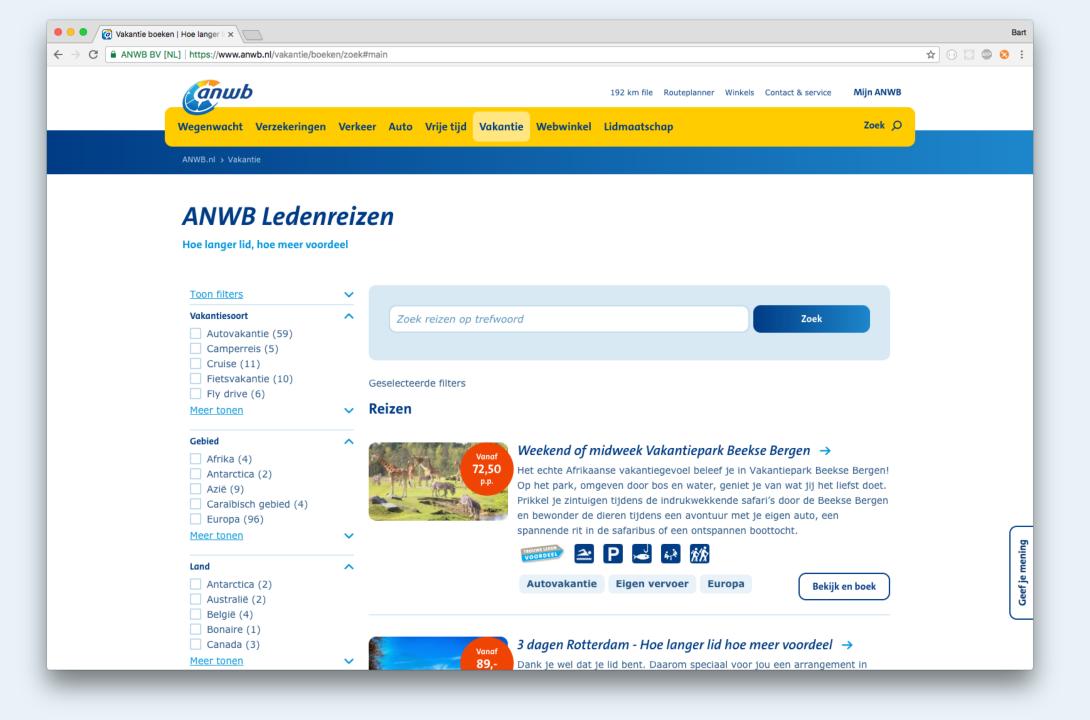
@bartwaardenburg

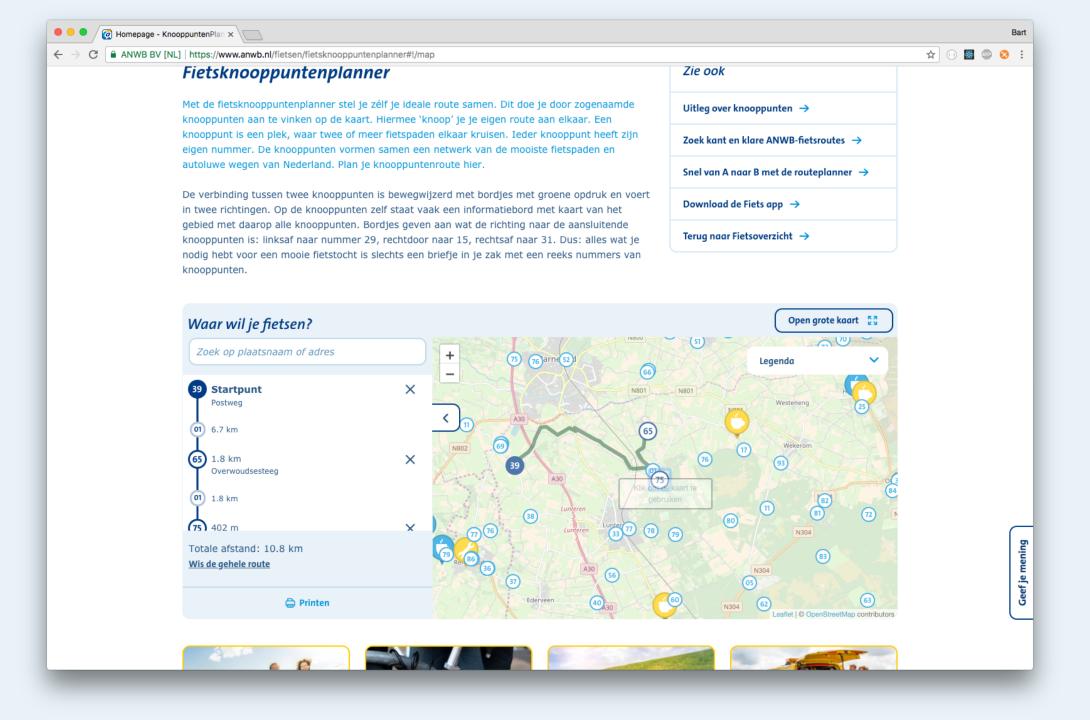


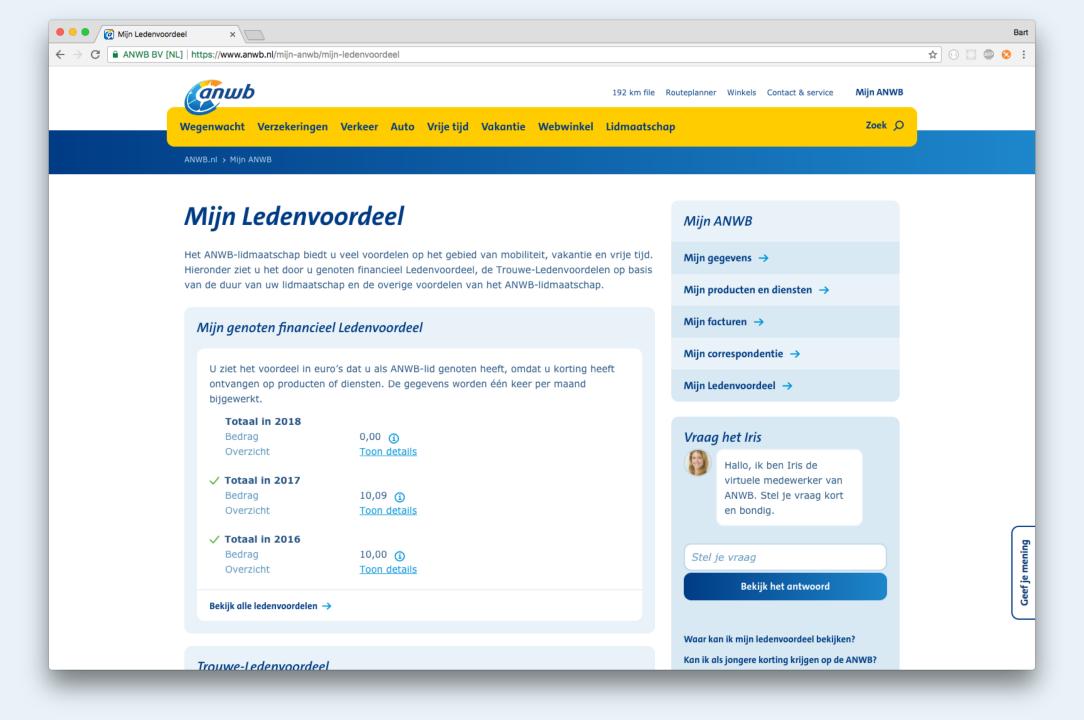
the casus

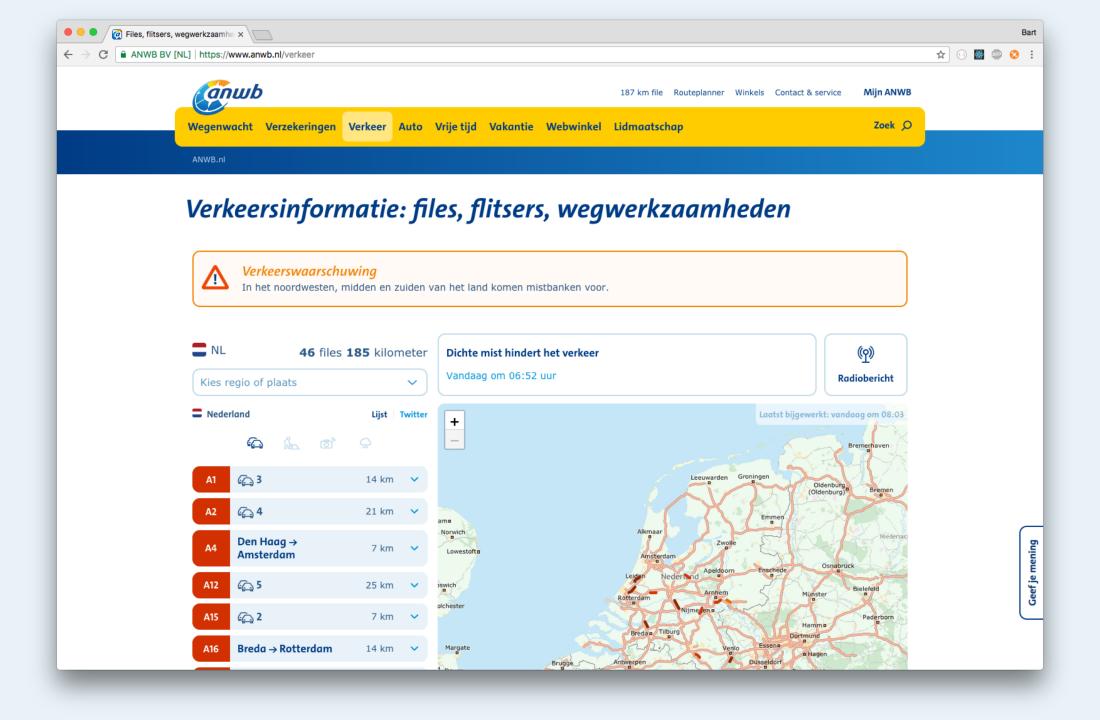


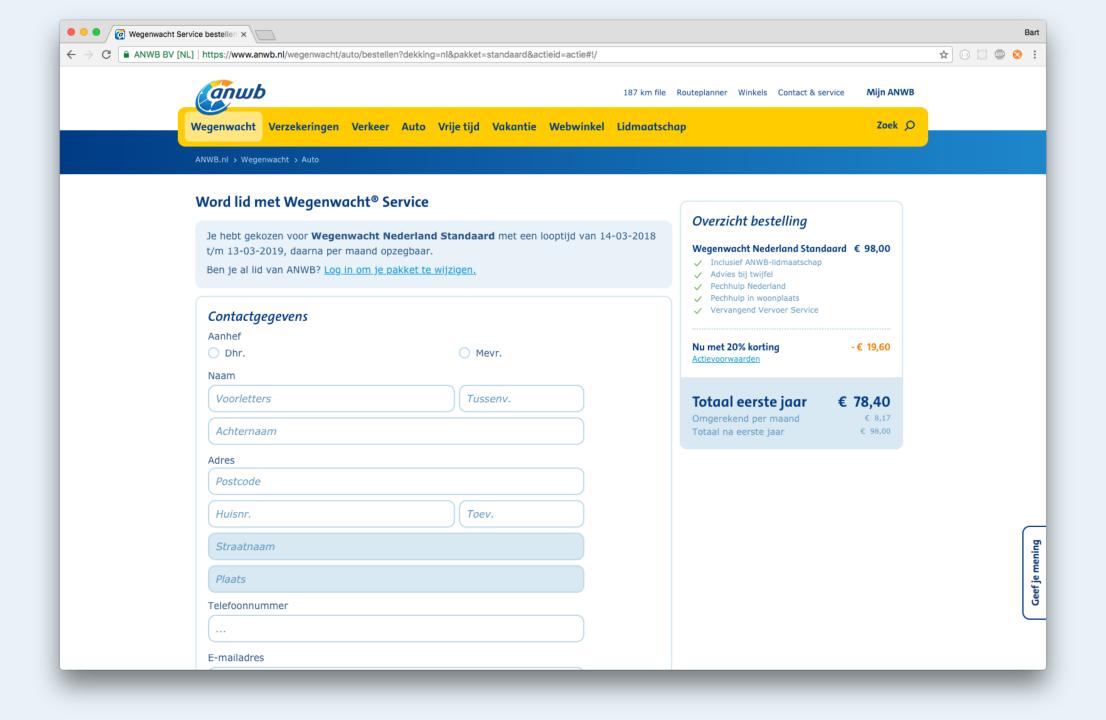












"How can we work together on ~200 front-end applications with ~30 developers spread out over ~15 scrum teams?"

"We want developers to have as much autonomy as possible while maintaining a certain amount of alignment."

the situation

"Every team builds their own applications based on their own front-end tech stack"

ui-related libraries in use

angular@1.6.x

react@15.x.x

angular@4.x.x

react@16.x.x

preact@x.x.x

home-grown@x.x.x

jQuery@x.x.x

angular@1.5.x

moustache@x.x.x

the vision

"No two developers should have to build the same user interface component twice."

ecosystem wishes

single framework
well documented style guide
developer friendly
designer friendly
automated unit testing
automated regression testing
individually versioned components

"We need consolidation in frameworks to effectively work together"

framework wishes

focused on components high performance small size pleasant learning curve available in-house knowledge large community stable server side rendering possible

in practice

preact

just user interface components

only ~3kb in size

if you know react you know preact

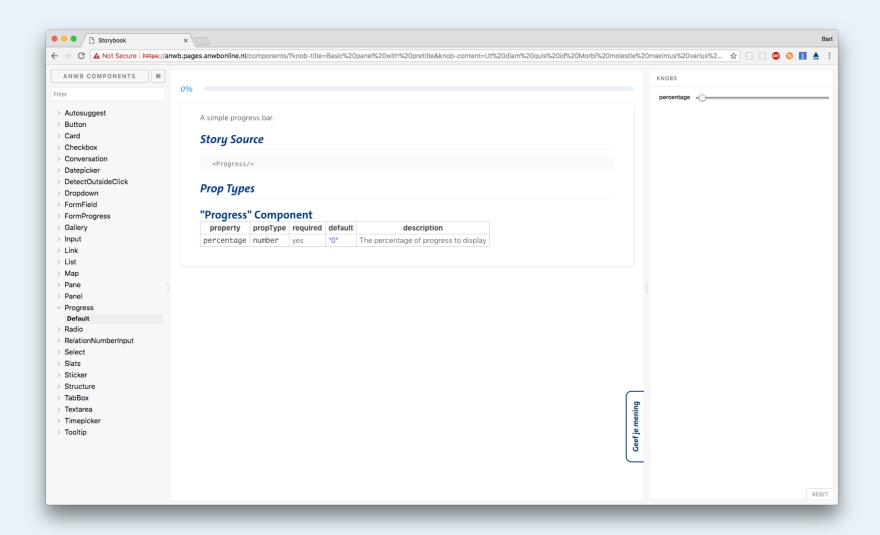
great templating with JSX

possibility to use react components

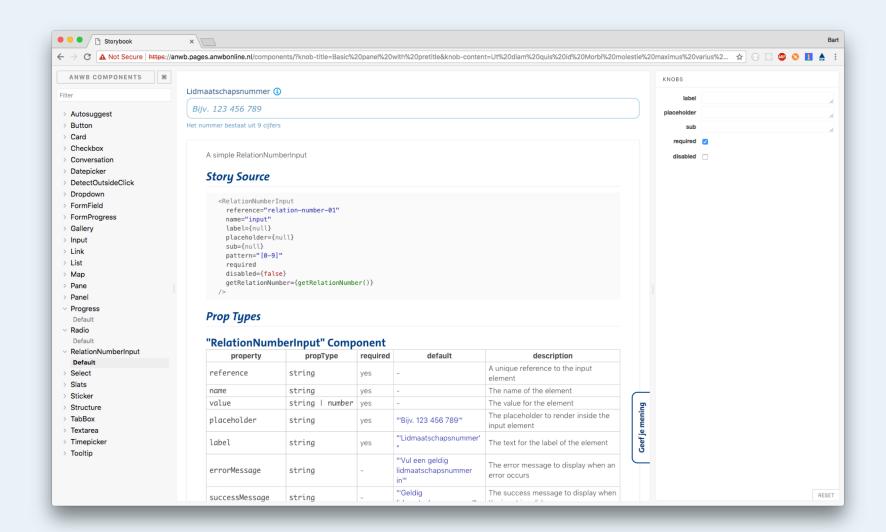
high performance in benchmarks

server side rendering possible

well documented style guide



developer friendly



developer friendly

```
JS FormProgress.js 🗙
                                                                                                                                                                                   EXPLORER

■ OPEN EDITORS

                                          Bart Waardenburg, 23 days ago | 1 author (Bart Waardenburg)
                                     1 /* @flow @jsx h */
   JS FormProgress.js components/form-p
                                         import { h } from 'preact'; 8.6K (gzipped: 3.5K)

▲ COMPONENTS

 ▶ _helpers_
                                          type Props = {
 .storybook

■ .vscode

                                             * The steps prop contain all steps which should be displayed for the form progress.
  {} settings.json
                                             * Optionally additional interaction handlers can be passed to add to the anchor tag.
 components
  autosuggest
                                            steps: Array<{</pre>
  ▶ button
                                     10
                                              text: string,
  ▶ card
                                     11
                                              href?: string,
  ▶ checkbox
                                     12
                                              onClick?: Function.
  ▶ conversation
                                     13
                                              onKeyPress?: Function,
  datepicker
                                     14
  detect-oustide-click
                                     15
                                            /** A number indicating the currently active form step*/
  ▶ dropdown
                                     16
                                            active?: number,
  ▶ form-field
                                     17

▲ form-progress

                                     18
    ▶ dist
                                     19 /**
                                     20
                                           * The progress component can be used to display form progress
                                     21
     _snapshots_
                                          const FormProgress = ({ steps, active }: Props) ⇒ (
                                     22
     JS FormProgress.js
                                            <nav class="form-progress">
                                     23
     JS FormProgress.stories.js
                                              {steps.map(({ text, href, ...props }, index) \Rightarrow (
     Js index.js
                                     24
                                     25
   CHANGELOG.md
                                     26
                                                  key={index}
   {} package.json
                                     27
                                                  href={href}
  ▶ gallery
                                     28
                                                  class={active 	≡ index + 1 ? 'active' : ''}
  ▶ input
                                     29
                                                  title={`Stap ${index} van ${steps.length}`}
  ▶ link
                                     30
                                                  { ... props}
  ▶ list
                                     31
  ▶ map
                                     32
                                                 {` ${text}`}
  pane
                                     33
                                                </a>
  ▶ panel
                                     34
                                              ))}
  progress
                                     35
                                            </nav>
  radio
                                     36
  ▶ relation-number-input
                                     37
  select
                                     38
                                          export default FormProgress;
  ▶ slats
                                     39
  ▶ sticker
  structure
▶ DOCKER
▶ CODE OUTLINE
◆ Bart Waardenburg, 5 months ago Ln 39, Col 1 Tab Size: 2 UTF-8 LF JavaScript Prettier: ✔ 🙂 🔔
```

developer friendly

```
EXPLORER
                                    JS FormProgress.stories.js X

▲ OPEN EDITORS

                                           Bart Waardenburg, 23 days ago | 1 author (Bart Waardenburg)
                                      1 /* @flow @jsx h */
                                      2 import { h } from 'preact'; 8.6K (gzipped: 3.5K)

▲ COMPONENTS

                                           import { storiesOf } from '@storybook/react';
 _helpers_
                                          import { withInfo } from '@storybook/addon-info';
 ▶ .storybook
                                          import { withKnobs, text, number } from '@storybook/addon-knobs';

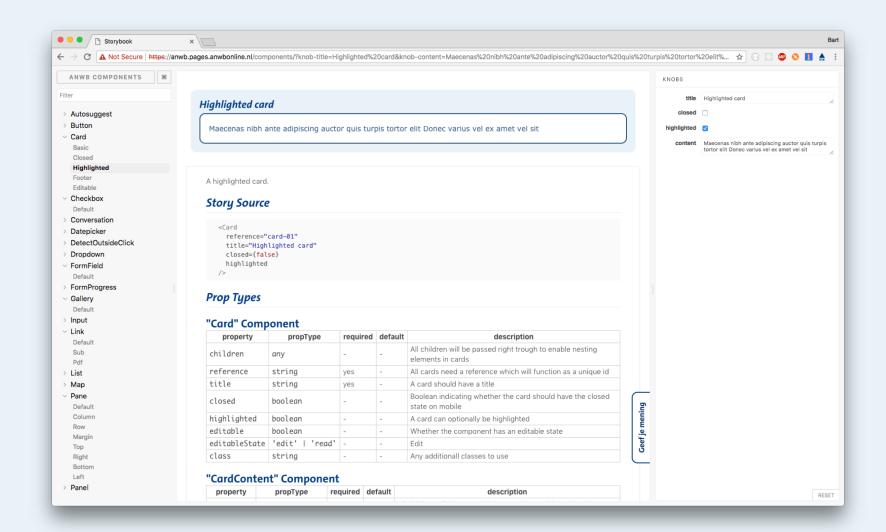
■ .vscode

  {} settings.json
                                           import FormProgress from './FormProgress';
 components
  autosuggest
                                           const stories = storiesOf('FormProgress', module);
  ▶ button
                                     10
  ▶ card
                                     11
                                          stories.addDecorator(withKnobs);
  ▶ checkbox
                                     12
   ▶ conversation
                                     13
                                          stories.add(
   datepicker
                                     14
                                             'Default',
   ▶ detect-oustide-click
                                     15
                                             withInfo('A simple form progress component')(() ⇒ (
   ▶ dropdown
                                     16
                                               <FormProgress
   form-field
                                     17
                                                 steps={[

▲ form-progress

                                     18
    ▶ dist
                                     19
                                                    text: text('text step 1', 'Uw gegevens'),
                                                    href: text('href step 1', '#'),
    20
                                     21
     _snapshots_
                                     22
     JS FormProgress.js
                                     23
                                                     text: text('text step 2', 'Uw account'),
    JS FormProgress.stories.js
                                     24
                                                     href: text('href step 2', '#'),
     Js index.js
                                     25
    (P) CHANGELOG.md
                                     26
   {} package.json
                                     27
                                                    text: text('text step 3', 'Controleer'),
   ▶ gallery
                                     28
                                                    href: text('href step 3', undefined),
   ▶ input
                                     29
   ▶ link
                                     30
   ▶ list
                                     31
                                                     text: text('text step 4', 'Bevestig'),
   ▶ map
                                     32
                                                     href: text('href step 4', undefined),
   ▶ pane
                                     33
   ▶ panel
                                     34
   ▶ progress
                                     35
                                                 active={number('active', 3)}
  ▶ radio
                                     36
  ▶ relation-number-input
                                     37
                                            ))
   ▶ select
                                     38
  ▶ slats
                                     39
   ▶ sticker
  ▶ structure
▶ DOCKER
▶ CODE OUTLINE
◆ Bart Waardenburg, 5 months ago    Ln 31, Col 49    Tab Size: 2    UTF-8    LF    JavaScript    Prettier: ✓ 🙂 🔔
```

designer friendly



automated unit testing

```
PASS .storybook/storyshots.spec.js (6.244s)
 Storyshots Integrity

✓ Abandoned Storyshots (2217ms)

 Storyshots
  Autosuggest

✓ Single (49ms)

✓ Grouped (14ms)

✓ Grouped With Maximum (15ms)

    ✓ Default Query (14ms)
  Button/Default
    ✓ Default (7ms)
    ✓ Document (2ms)
  Button/Reversed
    ✓ Condensed (3ms)
    ✓ Internal (4ms)

✓ External (2ms)

    ✓ Document (3ms)
  Button/Primary
    ✓ Default (3ms)
    ✓ Internal (2ms)
  Button/Decide
    ✓ Internal (3ms)
    ✓ External (3ms)
  Button/Link

✓ Condensed (3ms)

    ✓ Internal (3ms)

✓ External (3ms)

    ✓ Document (3ms)
  Button/Next
  Button/Previous
  Button/Link Previous
   ✓ Default (3ms)
   Button/Anchor
    ✓ Default (2ms)

✓ Condensed (3ms)

    ✓ Internal (3ms)
    ✓ Document (3ms)
   Card

✓ Basic (7ms)

✓ Closed (4ms)
```

automated unit testing

```
~/Sites/ANWB/components — ..WB/components
                                                                                                                                                        ~/Sites/ANWB/components — yarn node · node /usr/local/Cellar/yarn/1.5.1_1/libexec/bin/yarn.js run develop ... +
PASS components/autosuggest/src/tests/Autosuggest.spec.js
 FAIL .storybook/storyshots.spec.js (6.539s)
 • Storyshots > Link > Sub
   Received value does not match stored snapshot 1.
   - Snapshot
   aa -7,11 +7,11 aa
            Link text
            Link text Noooo this shouldn't have changed
             class="ANWB-link_sub"
     45 | // $FlowFixMe
     at .storybook/storyshots-utils.js:46:15
     at Object.<anonymous> (node_modules/@storybook/addon-storyshots/dist/index.js:128:20)
 • Storyshots > Link > Pdf
   Received value does not match stored snapshot 1.
   - Snapshot
   aa -7,11 +7,11 aa
             class="ANWB-link_label"
             Link text Noooo this shouldn't have changed
             class="ANWB-link__sub"
```

automated regression testing

```
~/Sites/ANWB/components — ..WB/components
                                                                                                                                                ~/Sites/ANWB/components — yarn
  Structure

√ Stacked (2841ms)

✓ Balanced (2606ms)

  TabBox
   ✓ Default (2685ms)
   ✓ Accordion (2702ms)
   ✓ Attention (2481ms)
   ✓ Pills (2655ms)

√ Side (2693ms)

√ Slats (2582ms)

   ✓ Multiple (2544ms)
 Textarea
   ✓ Default (2477ms)
 Timepicker
   ✓ Default (2800ms)
   ✓ Custom Interval (2650ms)
   ✓ Custom Start Time (2637ms)
   ✓ Custom End Time (2605ms)
   ✓ Custom Times (2540ms)
• Image Storyshots > Map > Size
 Expected image to match or be a close match to snapshot but was 0.1710416666666668% different from snapshot (821 differing pixels).
 See diff for details: /Users/p279825/Sites/ANWB/components/.storybook/_image_snapshots_/_diff_output_/storyshots-image-stest-js-image-storyshots-map-size-1-diff.png
   at node modules/@storybook/addon-storyshots/dist/test-body-image-snapshot.js:61:23
• Image Storyshots > Map > TileLayer
 Expected image to match or be a close match to snapshot but was 0.8387500000000001% different from snapshot (4026 differing pixels).
 See diff for details: /Users/p279825/Sites/ANWB/components/.storybook/__image_snapshots__/__diff_output__/storyshots-image-storyshots-map-tile-layer-1-diff.png
   at node_modules/@storybook/addon-storyshots/dist/test-body-image-snapshot.js:61:23
• Image Storyshots > Map > Dynamic Markers
 Expected image to match or be a close match to snapshot but was 0.171041666666668% different from snapshot (821 differing pixels).
 See diff for details: /Users/p279825/Sites/ANWB/components/.storybook/__image_snapshots__/_diff_output__/storyshots-image-test-js-image-storyshots-map-dynamic-markers-1-diff.png
   at node_modules/@storybook/addon-storyshots/dist/test-body-image-snapshot.js:61:23
```

automated regression testing

```
~/Sites/ANWB/components — ..WB/components
                                                                                                                                                ~/Sites/ANWB/components — yarn
  Structure

√ Stacked (2841ms)

✓ Balanced (2606ms)

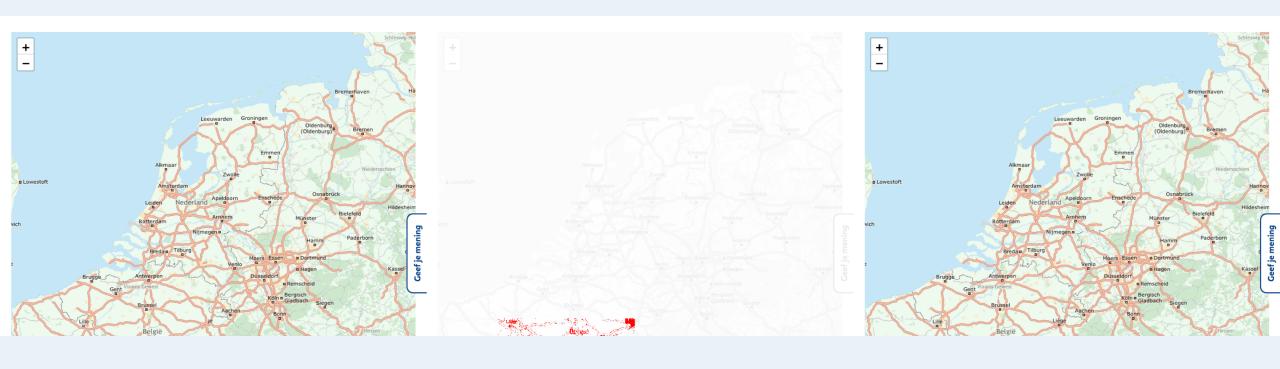
  TabBox
   ✓ Default (2685ms)
   ✓ Accordion (2702ms)
   ✓ Attention (2481ms)
   ✓ Pills (2655ms)

√ Side (2693ms)

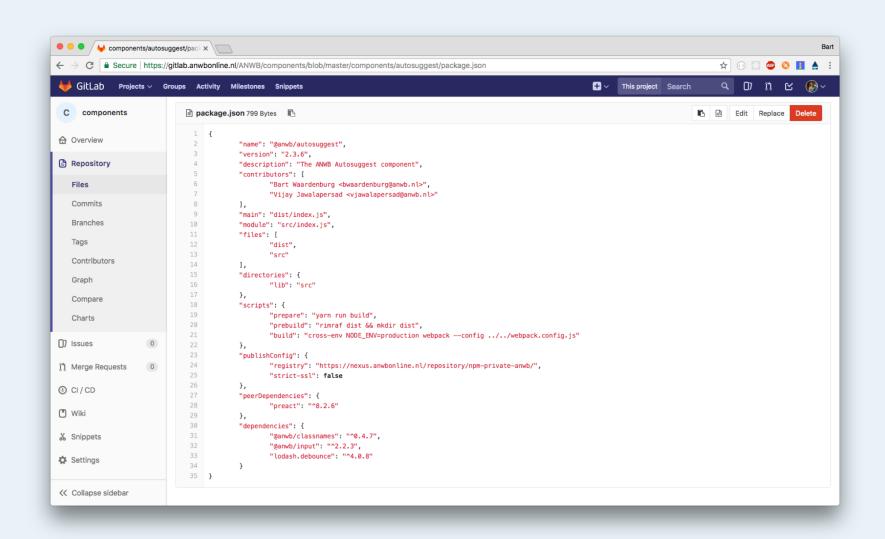
√ Slats (2582ms)

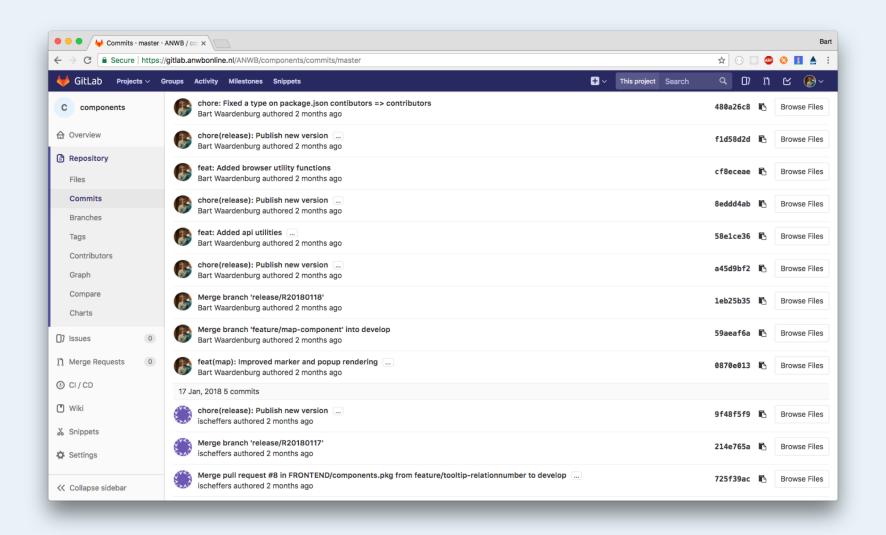
   ✓ Multiple (2544ms)
 Textarea
   ✓ Default (2477ms)
 Timepicker
   ✓ Default (2800ms)
   ✓ Custom Interval (2650ms)
   ✓ Custom Start Time (2637ms)
   ✓ Custom End Time (2605ms)
   ✓ Custom Times (2540ms)
• Image Storyshots > Map > Size
 Expected image to match or be a close match to snapshot but was 0.1710416666666668% different from snapshot (821 differing pixels).
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   at node_modules/@storybook/addon-storyshots/dist/test-body-image-snapshot.js:61:23
• Image Storyshots > Map > Dynamic Markers
 Expected image to match or be a close match to snapshot but was 0.171041666666668% different from snapshot (821 differing pixels).
 See diff for details: /Users/p279825/Sites/ANWB/components/.storybook/__image_snapshots__/_diff_output__/storyshots-image-test-js-image-storyshots-map-dynamic-markers-1-diff.png
   at node_modules/@storybook/addon-storyshots/dist/test-body-image-snapshot.js:61:23
```

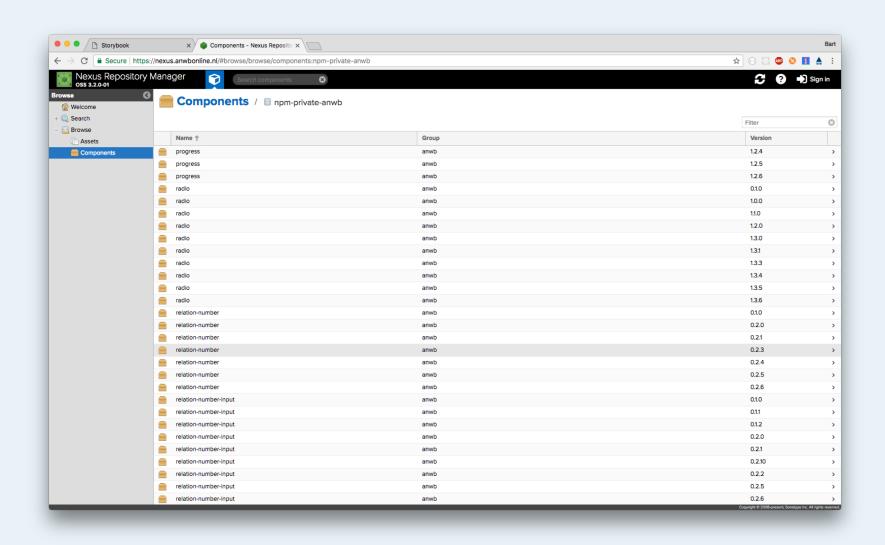
automated regression testing

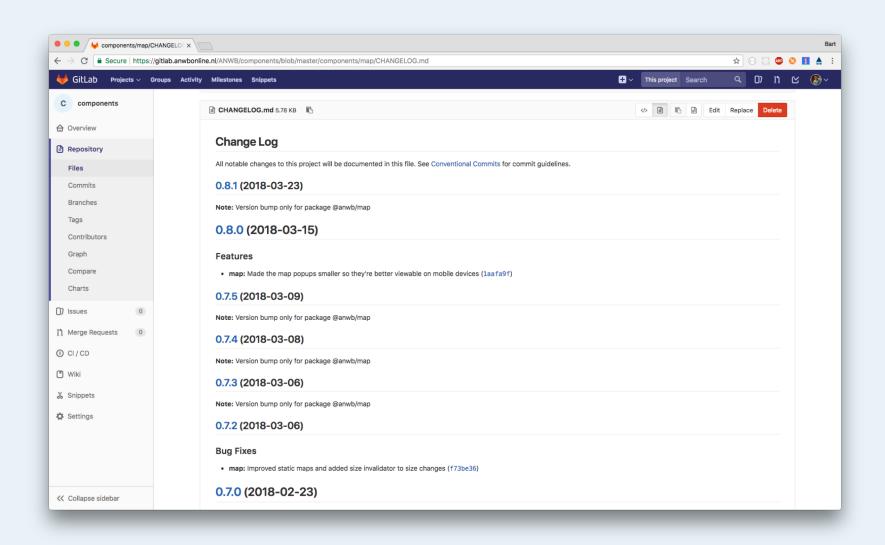


each component has its own package.json and version lerna & yarn workspaces handle all node modules we use conventional commits for our commit messages we use commitizen and commit-lint to help with commit messages new semver component versions are derived from commit messages changelogs are generated based on commit messages components are privately hosted on our nexus repository









the future

future wishes

specific versioned styling for components (css-in-js) cross browser regression testing

• • •

thanks





@bartwaardenburg

