```
                              JS

        Browsers                          NodeJS
   JS Runtime


                       EcmaScript
                         (specs)

     JavaScript          ActonScript          JScript


   JS                 Compiler
  (ES7)             (ES7 -> ES5)              Browser
                                                JS Runtime
                       Babel                      (ES5)


  TypeScript          TS Compiler          JS              Browser
                                          (ES5)
                                                              JS Runtime
                                                                (ES5)

                                      global
                                      function
   Scopes
                                      block(let, const)
                                      module
```

Server

Browser

JSP/ASPX/PHP

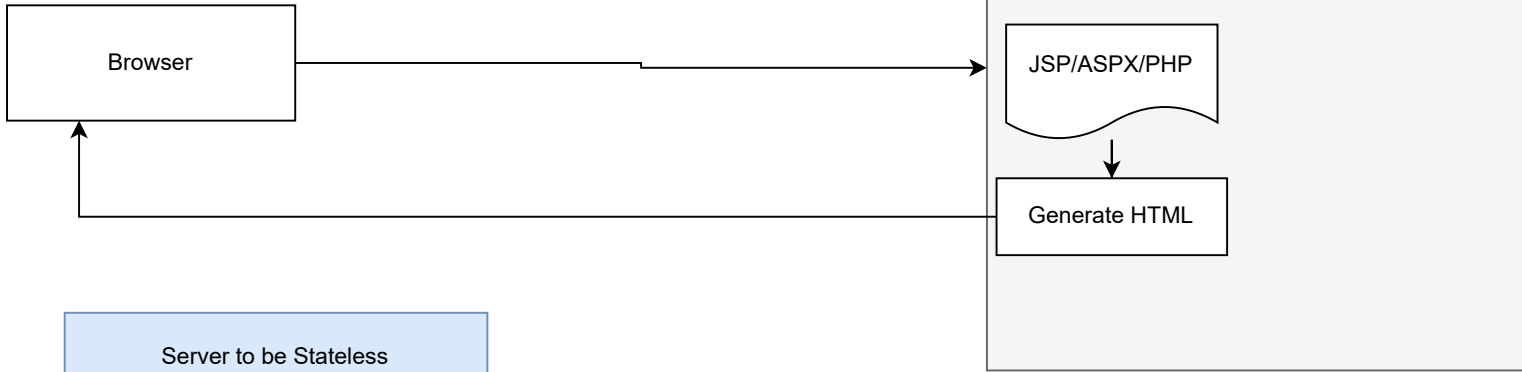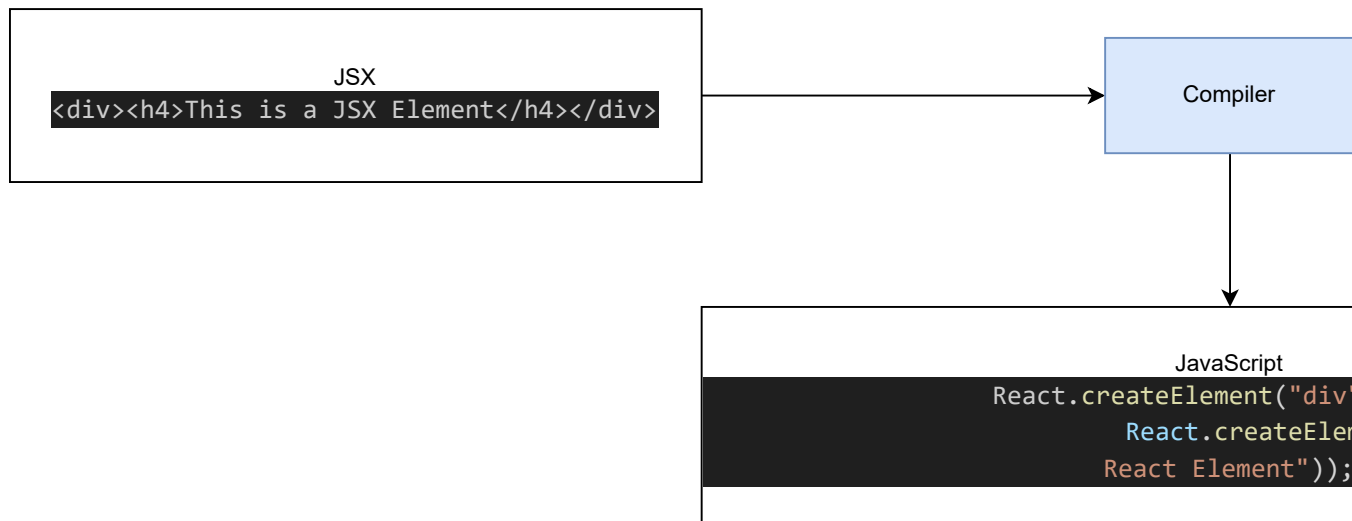Generate HTML

Server to be Stateless
Client holds the state

Dynamic HTML to be geerated on the
browser

CSR: Client-Side Rendering

Server

Browser

Statci Content
HTML, CSS, JS

Execute the scripts
Generate the HTML
Updated on the browser

JSX
```
<div><h4>This is a JSX Element</h4></div>
```

Compiler

JavaScript
```
React.createElement("div",
      React.createEleme
      React Element"));
```
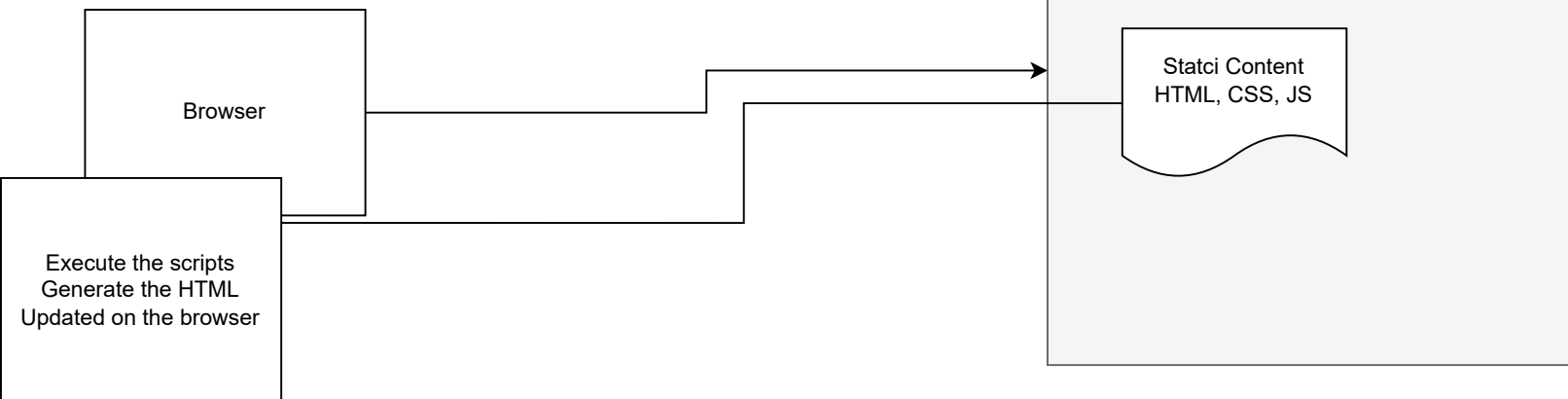
NPM
Package Manager

```
                                   null,
                        nt("h4", null, "This is a
```

Package Manager
(package.json)

Babel

Compiler

.babelrc

Webpack

Bundler
Optimization(Minify, Obfuscations)

webpack.config.js

Unit Testing/ E2E Test

Linting

NodeJS

ToolChain

Create React App

Single Page Application
CSR

NextJS

SPA/ MPA
SSR / CSR

Remix

Similar to NextJS

SSR

Performance(Loading)
SEO

Parent

props

Child

props
read-
only

Browser

request

REST
Endpoints

response

JSON

AJAX

HTT call to the server
Browser object: XMLHttpRequest

HTML5: fetch api's

Product
--name

abc

input

xyz

Component

Reusebale: props

<Alert message="hello" severity="info" onClose={} />

P1

P2

P1 C 1

Prop

P2 C1

C1

useDisptach

Login

Store

```
useSelector

ProtectedRoute
```

```
┌─────────────┐                              ┌──────────────┐
│  useConxtext│                              │  useC...     │
└─────────────┘                              └──────────────┘
┌─────────────┐                ┌──────────────┐
│    Login    │───────────────▶│   Context    │◀─────────
└─────────────┘                └──────────────┘

                                    ┌──────────────┐
        ┌───────────────────────────│   Observer   │
        │                           └──────────────┘
        ▼
┌─────────────┐   ┌─────────┐   ┌──────────────┐       ▲
│   Subject   │──▶│ publish │──▶│  Operators   │───────┘
│             │   └─────────┘   └──────────────┘       │
│    Data     │                                        ▼
└─────────────┘                           ┌──────────────┐
        ▲                                 │   Observer   │
        └─────────────────────────────────└──────────────┘

                        ┌──────────────┐
                        │   Observer   │
                        └──────────────┘

                              ┌──────────────┐
                         ┌───▶│ development  │
                         │    └──────────────┘
                         │
┌─────────────┐          │    ┌──────────────┐
│ environment │──────────┤    │  production  │
└─────────────┘          │    └──────────────┘
                         │
                         │    ┌──────────────┐
                         └───▶│     uat      │
                              └──────────────┘

┌─────────────┐                         ┌──────────────┐
│    react    │                         │   server     │
└─────────────┘                         │   config.js  │
                                        └──────────────┘
                            ┌────────────────────────┐
┌───────────┐  ┌─────────┐  │        axios           │   ┌──────────┐
│ component │─▶│  axios  │─▶│      interceptor       │──▶│  server  │
└───────────┘  └─────────┘  │  the request/ response │   └──────────┘
                            └────────────────────────┘
```

Conxtext

ProtectedRoute

HTML
Generated
from the components

Kept in memory
Virtual DOM

DOM the browser

HTML
Generated
from the components

Kept in memory
Virtual DOM

Micro-FE

webpack
Module Federation

Components

Library

http://localhot:3000
(App1)

Components

Library

http://localhot:3001
(App2)

Components

Library

http://localhot:3002
(App3)

npm application

package.json

enrty

build

minified

npm publish

npm repo