1. Introduction & History
   1. What is JavaScript and what is it used for?
      1. Originally, used inside of browsers to manipulate DOM
      2. Web clients, application servers as well as simple scripting
   2. What is it used for at PTV?
      1. xServer internet 2 Deployment + Monitoring
      2. xServer dashboard
      3. MGI
      4. MaaS
      5. …
   3. What is the current state of JavaScript?
      1. Fast growth of the WWW pushes JavaScript, hyped ES6, new language specification every year from ES6 on, frameworks and libraries like Angular and React make it easy to build large applications fast, paradigms like FRP or immutability
   4. From proposal to standard
      1. TC39 committee ( <https://tc39.github.io/process-document> )
      2. Spec ( <https://tc39.github.io/ecma262> )
   5. JavaScript
      1. Is complicated
      2. Is slow
      3. Is not a programming language
      4. Does not work
   6. Why do we struggle so hard?
      1. Equal but different
      2. Published in 1996, ES5 in 2009
      3. JavaScript made the web dynamic
      4. Was designed and implemented in a very short period ( <https://auth0.com/blog/a-brief-history-of-javascript> )
      5. Targeted at people making the web pretty
      6. Major programming concepts are supported (OOP, functional programming)
      7. Familiar syntax, less familiar program flow
      8. Little limitations concerning how things can be implemented (dynamic language), no static typing, no compiler checking and optimizations, unexpected runtime errors, often concerning incompatible types
      9. All of this leads to developers writing code they don’t really understand but it seems to work, until it does not work
      10. How can such a “bad” language be used for the most complex construct human mankind has ever invented?
2. Types and data structures