WEBTECHNOLOGIES

INTRODUCTION TO NODE.JS

Medientechnik

WHAT IS JAVASCRIPT?

- Dynamically typed programming language

- First version in 1995
  - Netscape Browser

- Supports
  - Object-orienteded Programming
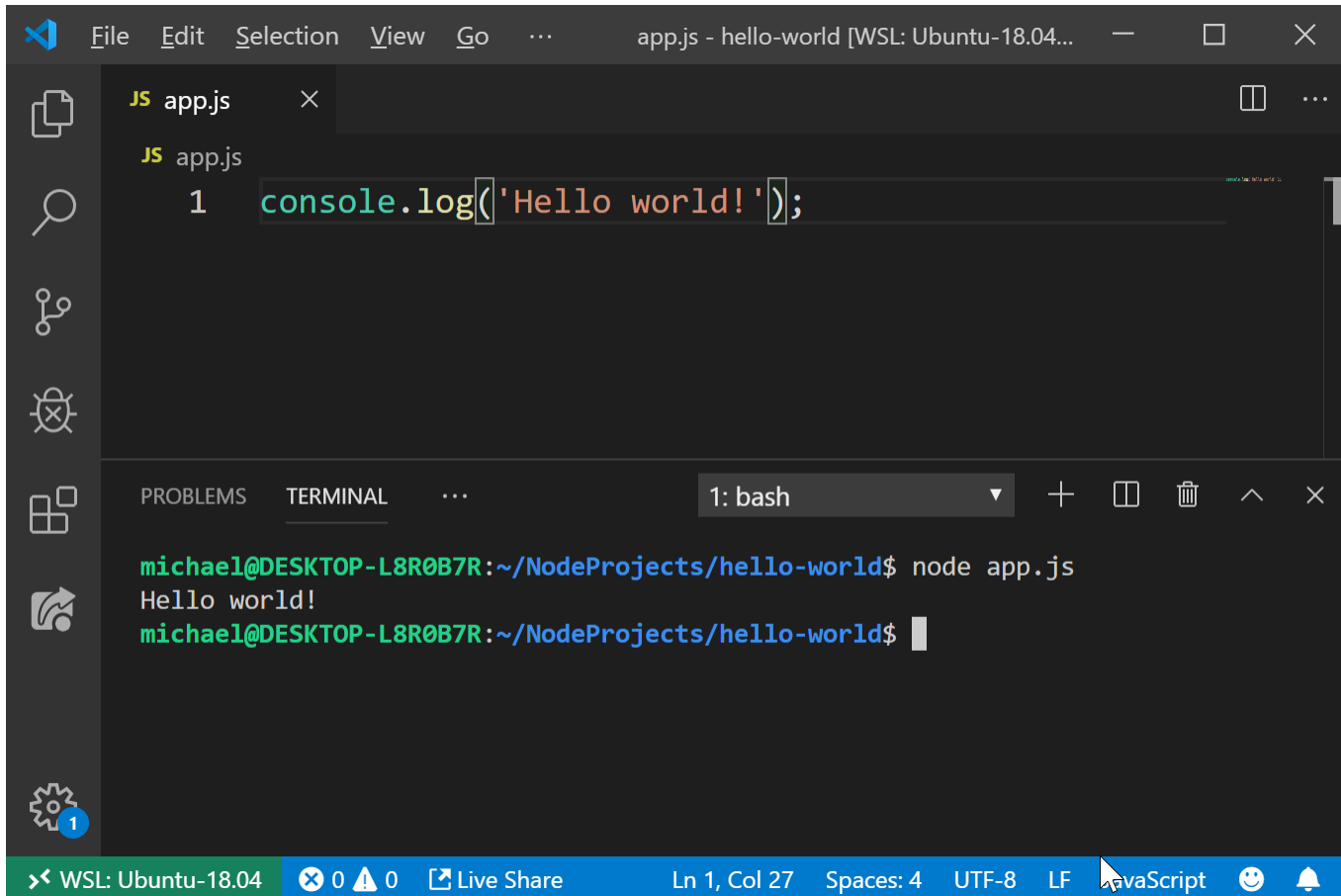 - Functional Programming

JAVASCRIPT ENGINES

- Execute JavaScript code
  - Spider-Monkey (Firefox)
  - V8 (Chrome, Edge)

- Translation to machine code
  - Former: Interpreter
  - Nowadays: JIT-Compiler

WHAT IS NODE.JS?

- JavaScript runtime
  - Execute JavaScript outside of a browser

- Main components
  - V8 JavaScript-Engine
  - API
    - HTTP requests, file access, …

HELLO WORLD!

NODE.JS APPLICATIONS

- Console applications
  - e.g. [Angular CLI](#)

- Web applications
  - e.g. Netflix

- Desktop applications
  - with Electron framework (Node.js + Chromium)
  - e.g. [Visual Studio Code](#)

NODE.JS FEATURES

- Single-Threaded
  - Whole JavaScript-Application runs in one thread

- Non-Blocking I/O
  - Thread isn't blocked e.g. during file access

- Therefore Node.js is …
  - well suited for I/O-intensive applications
  - not well suited for CPU-intensive applications

NODE.JS FEATURES

- Fast
  - Written in C / C++
  - Uses Chrome V8

- Full support of ES 2015 (ES 6)

WHAT IS ES?

- ECMAScript
  - Basis of JavaScript
  - Standardized by [ECMA International](#)

- ES is constantly ajusted
  - New language features added
  - Yearly updates since 2015

NODE.JS INSTALLATION

- On nodejs.org you find two versions

- Long-term support (LTS)
  - Stable version for production applications

- Current
  - Version with latest Features