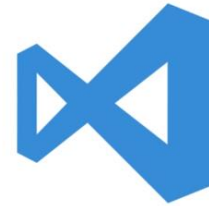


Infrastruktur für Angular

- node.js
- Angular CLI
- VsCode
- JSON-server



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JSON-Server

node.js installieren


- <https://nodejs.org/en/download/>
- Z.B. mit Prebuilt-Installer

Download Node.js®

Download Node.js the way you want.

Package Manager **Prebuilt Installer** Prebuilt Binaries Source Code

I want the version of Node.js for running

 **Download Node.js v20.17.0**

Node.js includes npm (10.8.2) [↗](#).
Read the changelog for this version [↗](#).
Read the blog post for this version [↗](#).
Learn how to verify signed SHASUMS [↗](#).
Check out all available Node.js download options [↗](#).
Learn about Node.js Releases [↗](#).

```
PS C:\> node --version  
v20.13.1
```

AngularCli installieren

- Eventuell alte Version deinstallieren (Powershell als Admin)

```
npm uninstall -g @angular/cli
```

- Neue Version installieren

```
npm install -g @angular/cli
```

```
C:\>ng --version

Angular CLI
Angular CLI: 12.1.4
Node: 14.17.4
Package Manager: npm 6.14.14
OS: win32 x64

Angular:
...

Package      Version
-----
@angular-devkit/architect 0.1201.4 (cli-only)
@angular-devkit/core      12.1.4 (cli-only)
@angular-devkit/schematics 12.1.4 (cli-only)
@schematics/angular       12.1.4 (cli-only)

C:\>
```

<https://angular.dev/installation>

HelloWorld in Angular

- Console
- Mit AngularCli erstellen → `ng new <name>`
 - Auswahl: Stylesheet format: CSS
 - Server-Side Rendering / Static Site Generation: NO

```
PS C:\temp> ng new hello-world
? Which stylesheet format would you like to use? CSS [ https://developer.mozilla.org/docs/Web/CSS ]
? Do you want to enable Server-Side Rendering (SSR) and Static Site Generation (SSG/Prerendering)? no
CREATE hello-world/angular.json (2706 bytes)
CREATE hello-world/package.json (1080 bytes)
CREATE hello-world/README.md (1098 bytes)
CREATE hello-world/tsconfig.json (1015 bytes)
CREATE hello-world/.editorconfig (290 bytes)
CREATE hello-world/.gitignore (629 bytes)
CREATE hello-world/tsconfig.app.json (439 bytes)
CREATE hello-world/tsconfig.spec.json (449 bytes)
CREATE hello-world/.vscode/extensions.json (134 bytes)
CREATE hello-world/.vscode/launch.json (490 bytes)
CREATE hello-world/.vscode/tasks.json (980 bytes)
CREATE hello-world/src/main.ts (256 bytes)
CREATE hello-world/src/index.html (309 bytes)
CREATE hello-world/src/styles.css (81 bytes)
CREATE hello-world/src/app/app.component.html (20239 bytes)
CREATE hello-world/src/app/app.component.spec.ts (960 bytes)
CREATE hello-world/src/app/app.component.ts (320 bytes)
CREATE hello-world/src/app/app.component.css (0 bytes)
CREATE hello-world/src/app/app.config.ts (318 bytes)
CREATE hello-world/src/app/app.routes.ts (80 bytes)
CREATE hello-world/public/favicon.ico (15086 bytes)
- Installing packages (npm)...
```

CodeEditor VsCode

- CrossPlatform
- Erweiterbar
- In JavaScript geschrieben
 - Basiert auf Electron
 - Verwendet WebBrowser Chromium und node.js
- Mit Menüeintrag in FileExplorer installieren

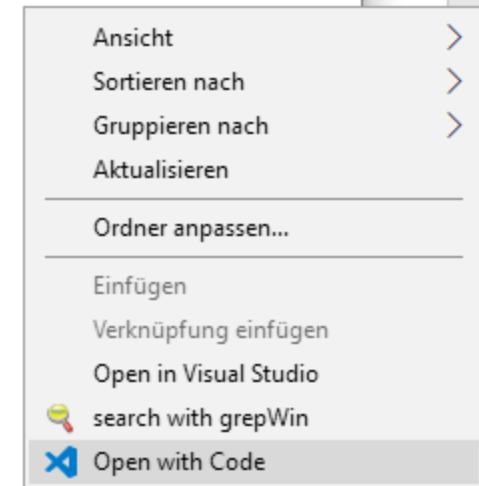


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VsCode in Verzeichnis starten

- Darauf achten, dass ins Projektverzeichnis gewechselt wird: z.B. `cd hello-world`
- Öffnen in PowerShell mit: „code .“
- Oder über File-Explorer:

e2e	20.12.2017 14:01	Dateiordner	
node_modules	20.12.2017 14:03	Dateiordner	
src	20.12.2017 14:01	Dateiordner	
.angular-cli.json	20.12.2017 14:01	JSON File	2 KB
.editorconfig	20.12.2017 14:01	Editor Config-Que...	1 KB
.gitignore	20.12.2017 14:01	Textdokument	1 KB
karma.conf.js	20.12.2017 14:01	JavaScriptdatei	1 KB
package.json	20.12.2017 14:01	JSON File	2 KB
package-lock.json	20.12.2017 14:03	JSON File	308 KB
protractor.conf.js	20.12.2017 14:01	JavaScriptdatei	1 KB
README.md	20.12.2017 14:01	MD-Datei	2 KB
tsconfig.json	20.12.2017 14:01	JSON File	1 KB
tslint.json	20.12.2017 14:01	JSON File	3 KB



Anwendung starten mit CLI: ng serve

- Mit Ctrl-Ö Terminal in VS-Code öffnen
- **npm start**

```
C:\temp\hello-world>npm start

> hello-world@0.0.0 start
> ng serve

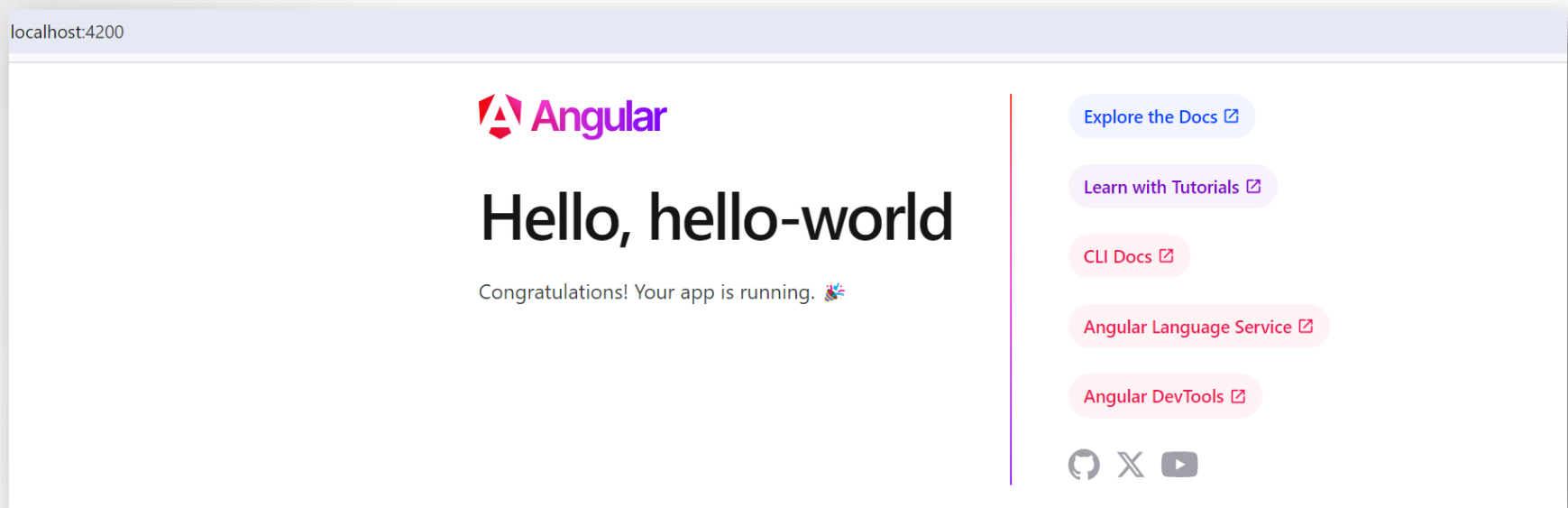
Initial chunk files | Names      | Raw size
polyfills.js       | polyfills  | 90.23 kB |
main.js            | main       | 22.70 kB |
styles.css         | styles     | 95 bytes |
                   | Initial total | 113.02 kB

Application bundle generation complete. [3.410 seconds]

Watch mode enabled. Watching for file changes...
NOTE: Raw file sizes do not reflect development server per-request transformations.
→ Local:   http://localhost:4200/
→ press h + enter to show help
```

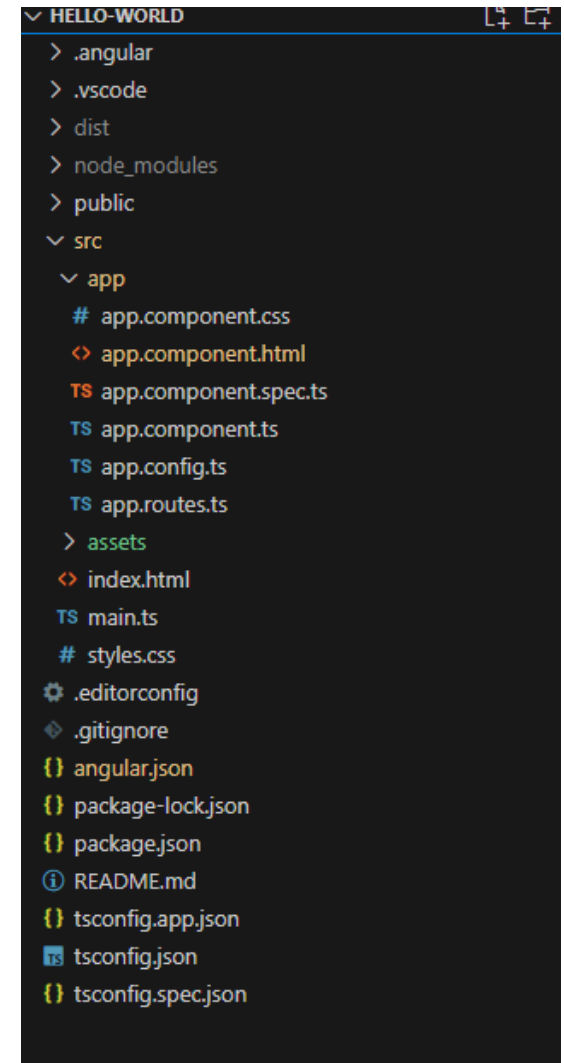
Infrastruktur funktioniert

- `http://localhost:4200`



Erster Überblick über Projektstruktur

- `node_modules` → Libraries
- `src` → unsere Programmdateien
 - nicht automatisch im neuen CLI-Template-Projekt
- `index.html` → SPA-Startseite (SPA=Single Page App)
- `main.ts` → Startklasse
- `angular.json` → Konfigurationsdateien
- `packages.json` → Verwaltung der Dependencies



Troubleshooting

- Falls neue Version von angular-cli Probleme macht:

```
npm uninstall -g angular-cli
```

```
(admin power shell): npm cache clean or npm cache verify (if npm > 5)
```

```
npm install -g @angular/cli@latest
```

- NPM Update

```
Set-ExecutionPolicy Unrestricted -Scope CurrentUser -Force
```

```
npm install -g npm-windows-upgrade
```

```
npm-windows-upgrade
```