# Tools needed for a frontend app with AJS, Grunt, Sass and TS (as an alternative for Grunt we can use Gulp)

1. Node.js

<https://nodejs.org/en/download/>

* To check the version run in cmd: ***node -v***

1. Npm – only after Node.js is installed (***npm install npm –g***)

* To check the version run in cmd: ***npm -v***

1. Git

<https://git-scm.com/download/win>

1. SourceTree (sau Tortoise Git)

<https://www.sourcetreeapp.com/>

<https://tortoisegit.org/>

1. VS Code

<https://code.visualstudio.com/download>

1. JSON server – easy way to create a REST service

<https://github.com/typicode/json-server>

* This is installed with the command: ***npm install -g json-server***
* The “persistence” is inside a file like db.json
* Starting the server: ***json-server --watch db.json***
* Calling the server: <http://localhost:3000/posts> (e.g.)
* Other useful REST endpoints: <http://jsonplaceholder.typicode.com/>

1. Grunt

<https://gruntjs.com/getting-started> (*npm install -g grunt*, *npm install -g grunt-cli*)

* Plugins: grunt-serve, grunt-contrib-jshint, grunt-contrib-watch, grunt-contrib-sass, grunt-ts, grunt-contrib-uglify, grunt-tslint

1. SASS (for *grunt-contrib-sass*); also needs Ruby installed (<https://rubyinstaller.org/>). Sass can be installed using Gems from Ruby – run ***gem install sass*** once Ruby is installed.

SASS website: <http://sass-lang.com/>

1. Typescript (for *grunt-ts*) – *npm install typescript -g*

<https://www.typescriptlang.org/>

1. TSLint 🡪needed for grunt-tslint (***npm install tslint typescript --save-dev***)
2. Gulp (alternative for Grunt)

<https://github.com/gulpjs/gulp>

* Plugins: gulp-concat, gulp-uglify, gulp-typescript, gulp-sass

There is a starter app on GitHub with the basic setup for AngularJS:

<https://github.com/lightforsin/angular-starter-with-grunt>

To make it working we need the following commands:

1. **Npm install**
2. **Grunt ts** 🡪 compiles the \*.ts files to \*.js
3. **Grunt sass** 🡪 compiles the \*.scss files to \*.css (inside the build folder)
4. **Grunt** -> minifies the JS files inside build/app.min.js
5. **Grunt serve** 🡪 this starts a server on port 9000
6. Open <http://localhost:9000/src/index.html> to access the entry page.

If we want to use Gulp

1. Install gulp it globally (***npm install gulp -g***) first.
2. **gulp** –> it compiles TS, SCSS and images, starts the server, starts a watch and whenever a file is changed, the app is reloaded in the browser (<http://localhost:8080/src/>)
3. **gulp scripts** 🡪 compiles TS files
4. **gulp styles** 🡪 compiles SCSS files
5. **gulp images** 🡪 minifies images
6. **gulp watch** 🡪 starts watching TS, SCSS and images
7. **gulp clean 🡪** deletes the ‘build’ folder
8. **gulp connect 🡪** starts the server (<http://localhost:8080/src/>)