

EXPRESS

A framework to help write web servers in NodeJS

One of many, but is a commonly used one

STARTING

1. Make a directory: `express-test`
2. Inside `express-test/`, run `npm init -y`
 - Tells npm your work is a new package
 - Includes the ability to install local packages/modules
 - Examine `package.json`
3. install express: `npm install express`
 - LOCAL, not global
 - NOT with `sudo`
4. Examine `package.json` and `node_modules/`

PACKAGE.JSON

A JSON file that every npm-using package has

- It contains information about the package
 - including dependencies
- Use even if you aren't intending to share your package

PACKAGE.JSON PARTS INCLUDE

<https://docs.npmjs.com/files/package.json>

- package name
- version (in semver)
- dependencies list
 - lists version or minimum version
 - devDependencies (for those working on the package itself)
- Author/repo info
- License
- Scripts

SEMVER - SEMANTIC VERSIONING

<https://semver.org/>

MAJOR.MINOR.PATCH

- Not just JS or web-related
- X.Y.Z - three numbers
- NOT like decimal
 - ".x" is "any", so 2.x means 2.(whatever)
 - $1.9.x < 1.10.0 < 2.0.0$
- MAJOR version is an API-breaking change
- MINOR version is a new feature
- PATCH version is a bugfix requiring no changes
- 0.x.x means nothing is stable

PACKAGE.JSON DEPENDENCIES

When you run `npm install` where a package.json is present, npm will install all of the dependencies (recursively) into `node_modules/`

`node_modules/` should not be put into version control

When you `require()` a file without a path, npm will look in `node_modules/`

- `x.y.z` = exact version
- `^x.y.z` = latest of this major version
- `~x.y.z` = latest of this minor version

PACKAGE.JSON SCRIPTS

Lists any shell (command-line) commands that will run with `npm run`
`SCRIPTNAME`

- e.g. script key of `"greet": "echo Hello"` will echo "Hello" when you run `npm run greet`

A few pre-defined script names don't require "run"

- e.g. `npm test` is the same as `npm run test`

Scripts are very handy for collecting commands for users or building your package

With some effort scripts can run on many operating systems

CREATE YOUR STATIC ASSETS

Inside `express-test`, create a `public` directory.

- This will hold **static** files and assets
- This will be the webserver root for static assets

Create an `index.html` inside `public/` that says "Hello World"

BASIC EXPRESS WEBSERVER

```
const express = require('express');  
const app = express();  
  
app.use(express.static('./public'));  
  
app.listen(3000, () => {  
  console.log('listening on http://localhost:3000');  
});
```

CONFIRM THE STATIC ASSETS

- run `node server.js`
- view `http://localhost:3000` in browser
 - Note: **3000**, not 5000 like we used with `serve`
 - Why 3000? Just to distinguish from serve. No extra meaning.

ADDING A DYNAMIC ASSET

server.js before `app.listen`:

```
app.get('/dynamic.html', (request, response) => {  
  response.send('This is not an actual file');  
});
```

public/index.html:

```
<a href="dynamic.html">See a Dynamic page</a>
```

Restart `node server.js`

Confirm you can follow the link to the dynamic page

WHY RESTART?

Changes to the static assets **don't** require the server to restart

Changes to the dynamic assets **do** require the server to restart

Why?