11.2 Node.js NPM and Nodemon

The Node Package Manager

- NPM is a package manager for Node.js packages, or modules if you like.
- www.npmjs.com hosts thousands of free packages to download and use.
- The NPM program is installed on your computer when you install Node.js

Node Packages

- A package in Node.js contains all the files you need for a module.
- Modules are JavaScript libraries you can include in your project.

Download a Package

- Downloading a package is very easy.
- Open the command line interface and tell NPM to download the package you want.
    - I want to download a package called "upper-case".
    - Download "upper-case":

    C:\Users*Your Name*>npm install upper-case

- Now you have downloaded and installed your first package!
- NPM creates a folder named "node_modules", where the package will be placed.
- All packages you install in the future will be placed in this folder.
- My project now has a folder structure like this:

    C:\Users\My Name\node_modules\upper-case

Using a Package

- Once the package is installed, it is ready to use.
- Include the "upper-case" package the same way you include any other module.

```
var uc = require('upper-case');
```

- Create a Node.js file that will convert the output "Hello World!" into upper-case letters:

```
var http = require('http');
var uc = require('upper-case');
http.createServer(function (req, res) {
    res.writeHead(200, {'Content-Type': 'text/html'});
    res.write(uc.upperCase("Hello World!"));
    res.end();
}).listen(8080);
```

- Save the code above in a file called "demo_uppercase.js", and initiate the file:

  C:\Users\Your Name>node demo_uppercase.js

- If you have followed the same steps on your computer, you will see the same result as the example: **http://localhost:8080** ▣ **(http://localhost:8080/)**

nodemon

- nodemon is a tool that helps develop Node.js based applications by automatically restarting the node application when file changes in the directory are detected.
- nodemon does not require any additional changes to your code or method of development.
- nodemon is a replacement wrapper for node.
- To use nodemon, replace the word node on the command line when executing your script.

Installation

- Either through cloning with git or by using npm (the recommended way):

```
npm install -g nodemon # or using yarn: yarn global add nodemon
```

Usage

- nodemon wraps your application, so you can pass all the arguments you would normally pass to your app:

  `nodemon [your node app]`

- For CLI options, use the -h (or --help) argument:

  `nodemon -h`

Additional Material

- **Learn more**
  - node
  - W3Schools