simplilearn

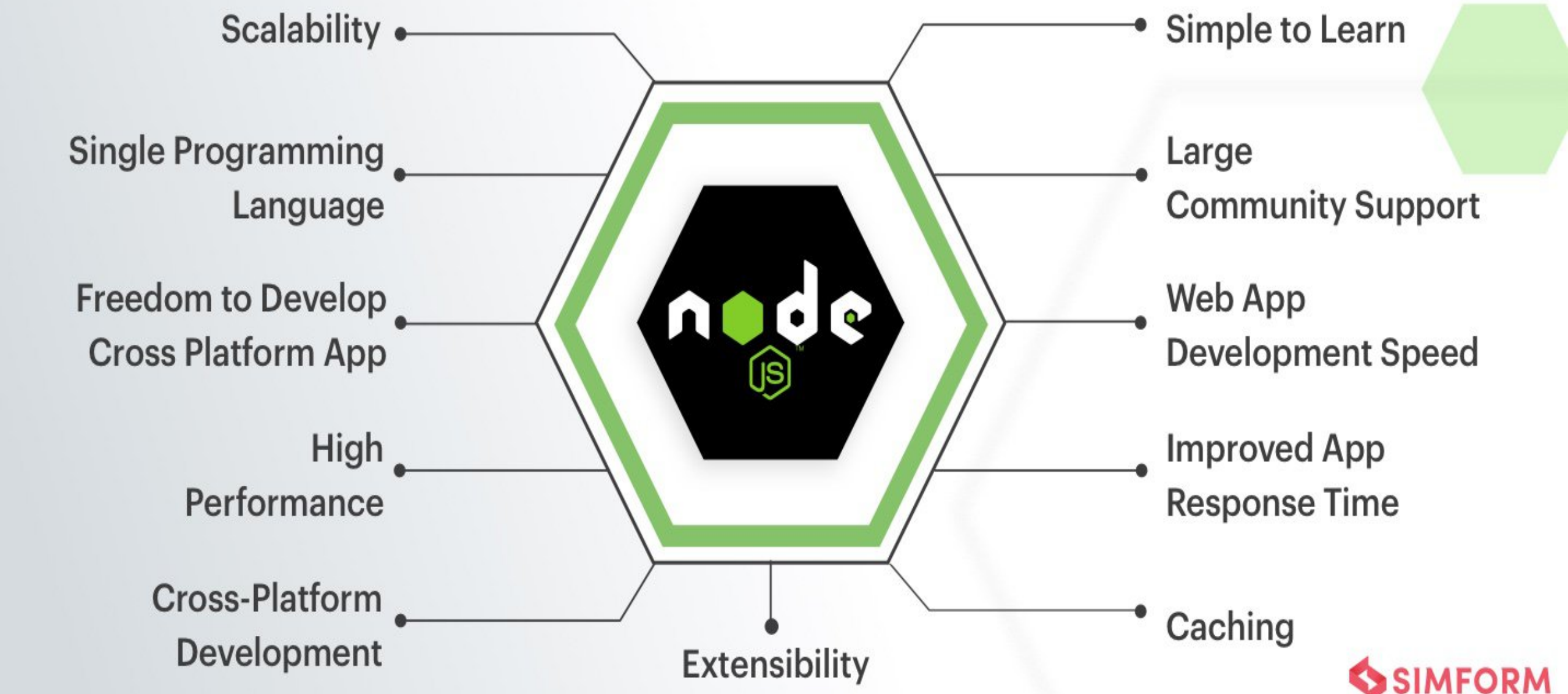
NODE.JS TUTORIAL

Node Js

what is node js?

Node.js is an open-source, cross-platform JavaScript runtime environment that allows developers to execute JavaScript code outside of a web browser. Built on Chrome's V8 JavaScript engine, it enables server-side development with JavaScript, unifying front-end and back-end development under a single language.

Node.js Advantages



SIMFORM

Node Js installation

Or get a prebuilt Node.js® for Windows running a x64 architecture.

Windows Installer (.msi) Standalone Binary (.zip)

Read the changelog ↗ or blog post for this version.

Learn more about Node.js releases, including the release schedule and LTS status.

Learn how to verify ↗ signed SHASUMS.

Looking for Node.js source? Download a signed Node.js source ↗ tarball.

Check out our nightly ↗ binaries or all previous releases or the unofficial ↗ binaries for other platforms.

Node Js – npm init

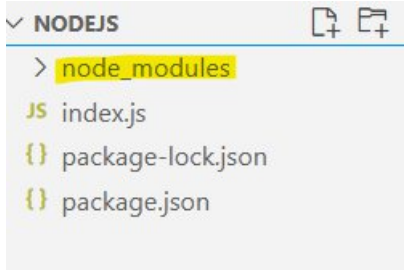
```
PS E:\MERN INTERN\nodejs> npm init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See `npm help init` for definitive documentation on these fields
and exactly what they do.

Use `npm install <pkg>` afterwards to install a package and
save it as a dependency in the package.json file.

Press ^C at any time to quit.
package name: (nodejs) nodejs-basic
version: (1.0.0)
description: learning node
entry point: (index.js)
test command:
git repository:
keywords: NodeJs
author: sk
license: (ISC)
About to write to E:\MERN INTERN\nodejs\package.json:

{
  "name": "nodejs-basic",
  "version": "1.0.0",
  "description": "learning node",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [
    "NodeJs"
  ],
  "author": "sk",
  "license": "ISC"
}


Is this OK? (yes)
```


```
{
  "name": "nodejs-basic",
  "version": "1.0.0",
  "description": "learning node",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [
    "NodeJs"
  ],
  "author": "sk",
  "license": "ISC"
}
```

Node Js – nodemon

npm i nodemon -D

```
"license": "ISC",
"devDependencies": {
  "nodemon": "^3.1.10"
}
```




```
"scripts": {
   "server": "nodemon index.js"
 },
```

Node Js – modules

```
//understanding modules in nodejs
const { add, subtract, multiply, divide } = require('./math');


const num1 = 10;
const num2 = 5;
console.log(`Addition: ${add(num1, num2)}`);
console.log(`Subtraction: ${subtract(num1, num2)}`);
console.log(`Multiplication: ${multiply(num1, num2)}`);
console.log(`Division: ${divide(num1, num2)}`);
```

```
function add(a, b) {
    return a + b;
}
function subtract(a, b) {
    return a - b;
}
function multiply(a, b) {
    return a * b;
}
function divide(a, b) {
    if (b === 0) {
        throw new Error("Cannot divide by zero");
    }
    return a / b;
}
module.exports = { add, subtract, multiply, divide };
```

```
//global variables in nodejs
console.log(__dirname); // Directory name of the current module
console.log(__filename); // File name of the current module
```

Node Js – modules

```
//File System Module
const fs = require('fs');

// Create a new file and write data to it
fs.writeFile('./example.txt', 'Hello, this is a sample text file.', (err) => {
    if (err) throw err;
    console.log('File created and data written successfully.');
});


// Read the data from the file
fs.readFile('example.txt', 'utf8', (err, data) => {
     if (err) throw err;
        console.log('File content:', data);
});


//rename the file
fs.rename('example.txt', 'sample.txt', (err) => {
    if (err) throw err;
    console.log('File renamed successfully.');
});

//delete the file
fs.unlink('sample.txt', (err) => {
    if (err) throw err;
    console.log('File deleted successfully.');
}
);
```

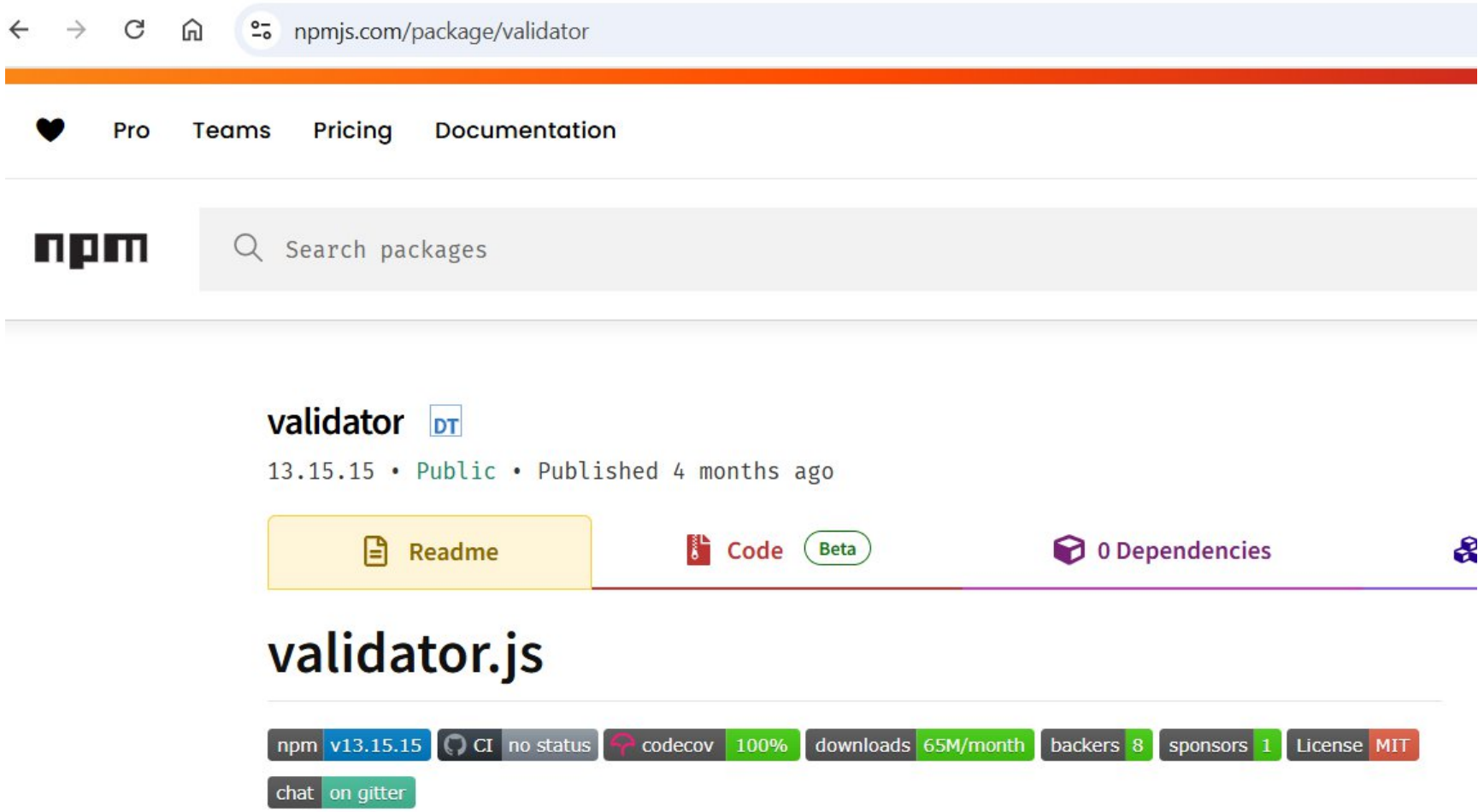
Node Js – modules

```
//http module
const http = require('http');
const server = http.createServer((req, res) => {
    res.statusCode = 200;
    res.setHeader('Content-Type', 'text/plain');
    res.end('Hello, World! This is a response from the server.\n');
}
);
const PORT = 3000;
server.listen(PORT, () => {
    console.log(`Server is running at http://localhost:${PORT}/`);
}
);
```

```
//url module
const http = require('http');
const server = http.createServer((req, res) => {
    const url = require('url');
    const myURL = new URL(req.url,'http://localhost:3000/');
    console.log(myURL)
    res.statusCode = 200;
    res.setHeader('Content-Type', 'text/plain');
    res.end('Hello, World! This is a response from the server.\n');
}
);
const PORT = 3000;
server.listen(PORT, () => {
    console.log(`Server is running at http://localhost:${PORT}/`);
}
);
```

```
URL {
  href: 'http://localhost:3000/favicon.ico',
  origin: 'http://localhost:3000',
  protocol: 'http:',
  username: '',
  password: '',
  host: 'localhost:3000',
  hostname: 'localhost',
  port: '3000',
  pathname: '/favicon.ico',
  search: '',
  searchParams: URLSearchParams {},
  hash: ''
```

Node Js – npm modules




```
//npm modules
var validator = require('validator');
console.log(validator.isEmail('foo@bar.com')); //=> true
```

Thank you!!