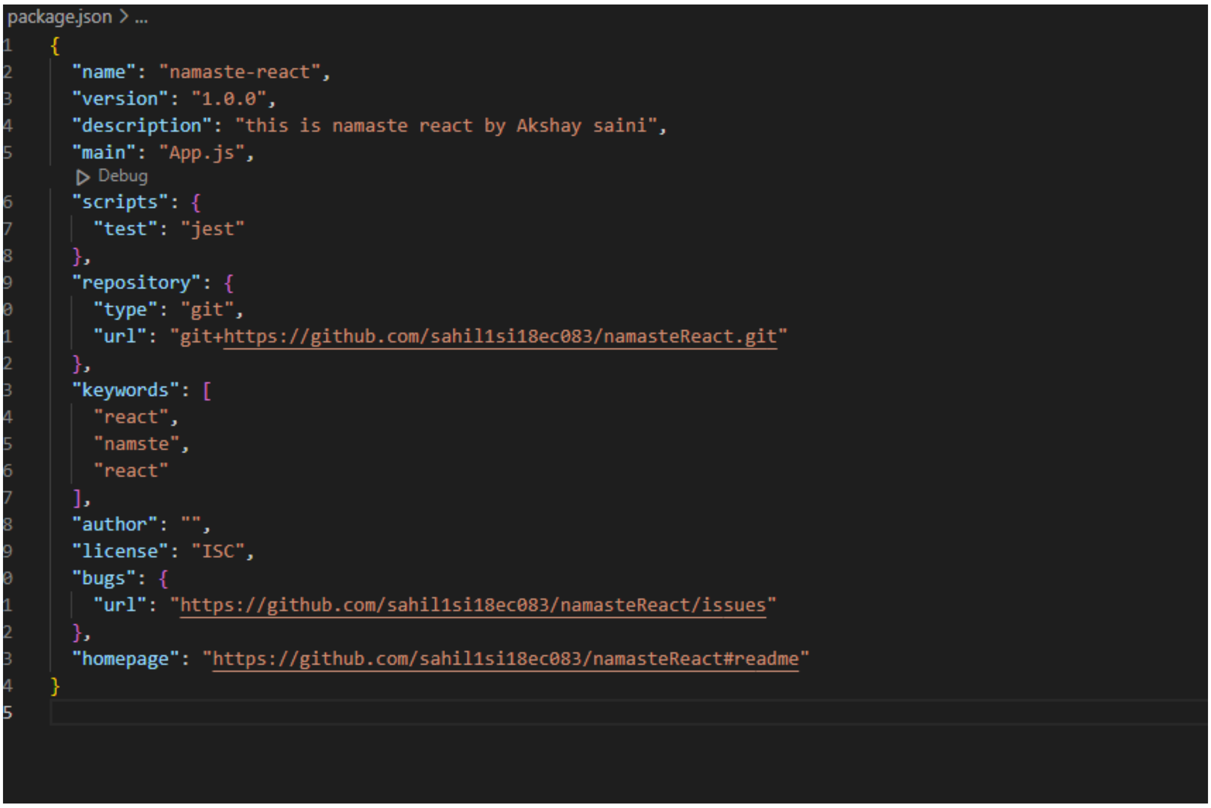
Igniting the App

Npm is Everything but not a node package manager. It manages packages.
It is a repository where all the packages are hoisted.

Do npm init and it will create a package.json file



```json
{
  "name": "namaste-react",
  "version": "1.0.0",
  "description": "this is namaste react by Akshay saini",
  "main": "App.js",
  "scripts": {
    "test": "jest"
  },
  "repository": {
    "type": "git",
    "url": "git+https://github.com/sahil1si18ec083/namasteReact.git"
  },
  "keywords": [
    "react",
    "namste",
    "react"
  ],
  "author": "",
  "license": "ISC",
  "bugs": {
    "url": "https://github.com/sahil1si18ec083/namasteReact/issues"
  },
  "homepage": "https://github.com/sahil1si18ec083/namasteReact#readme"
}
```

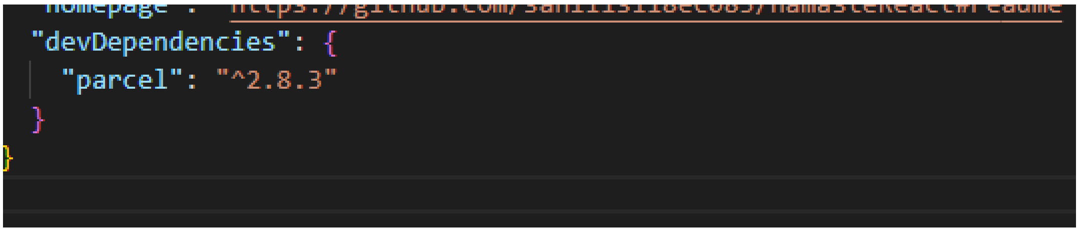
Now we are going to install some dependencies.

Webpack , parcel, vite these three are bundlers. These bundles are used to package and shipped our application to be pushed to production.
Even npx create react app uses web pack behind the scenes.
We will be using parcel. Parcel will ignite our application.

npm install -D parcel
There are two types of dependencies.

1. Normal dependency
2. Dev dependency

Dev dependency are used in dev phase, it is shown by -D
Npm contains all the packages. When we do npm install -D parcel
Our application will install parcel package from npm repository where parcel is hoisted.



```
  "homepage": "https://github.com/sanii1311bec085/namasteReact#readme"
  "devDependencies": {
    "parcel": "^2.8.3"
  }
}
```

Package.json will keep a track of all the package used in the application.

What is this ^ sign?
This is called a carrot.

Carrot vs tilde in package.json?
Right now the version of parcel available is 2.8.3
Suppose a new version 2.8.4 comes. IF we put a carrot parcel will automatically update it to 2.8.4
If there is a minor update and you put a carrot, it will update it to 2.8.4
For major updates like 3.0.1, we need to a tilde ~
It is safe to put a carrot because it is ok to update to minor versions and it is dangerous to update to major updates.

When we install parcel, we have got another package lock.json file

PACKAGE.JSON vs   PACKAGE LOCK.JSON

PACKAGE.JSON keeps track of all the dependencies/ packages needed by the application.

PACKAGE LOCK JSON keeps track of the exact version that is being installed. It locks the version and keeps a record of the exact version.
PACKAGE.JSON can have a carrot or tilde but there is no tilde or caret in PACKAGE LOCK.JSON because it keeps note of the exact version.
So you should push both package.json and package lock.json to git. Package.json will tell whatever the dependencies needed to be installed and package lock.json will keep the exact version of dependencies and even if there is a carrot in package.json , it will install node modules as per version present in package lock.json

Why are so many packages downloaded when we only download parcel?

When we install parcel, it will have a dependency on some other package , and that other package may have a dependency on other package. So even if you are installing parcel, other packages will also be installed. This is called transitive dependency.
Thats why node modules are so huge. Because a package is dependent on other package and that is dependent on other and this chain continues.

Why we need .gitignore file?

Make a gitignore file and put all those things which you want to get tracked by git. Put them inside the gitignore file
Like this `/node_modules`

Donot put package and package lock file in gitignore because you want to get to know of which packages u want to get installed using package.json and if you want to install package you need packagelock.json.
Package.json and package lock.json will help us to download node modules

Injecting Parcel in our application

When we do npx parcel index.html, parcel will hoist our application on localhost:1234
npx parcel index.html means we are executing parcel inside our application

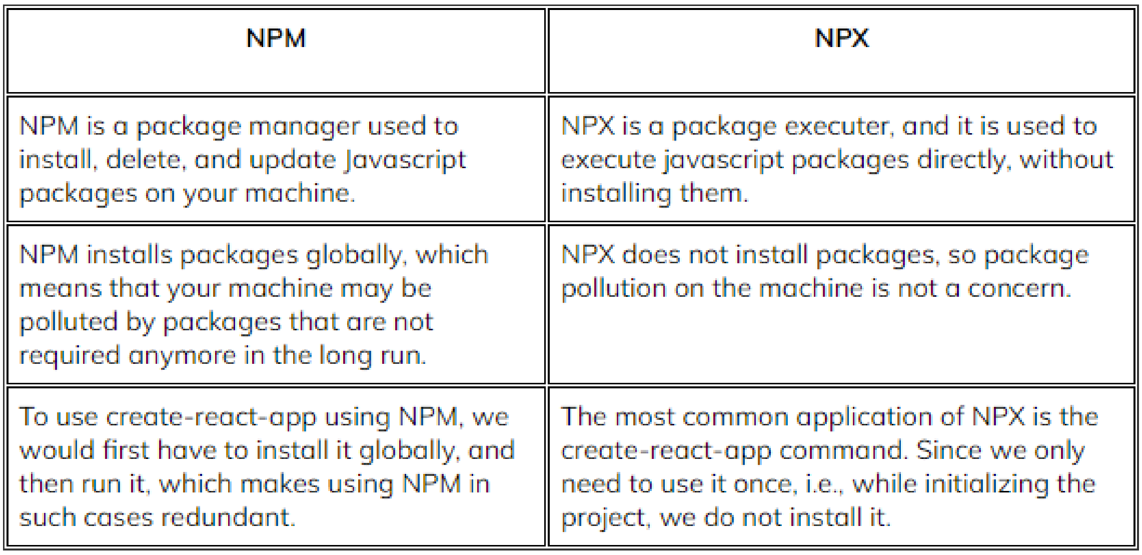
What is NPM?

It is a tool used for package management and the default package manager for Node projects. NPM is installed when NodeJS is installed on a machine. It comes with a command-line interface (CLI) used to interact with the online database of NPM. This database is called the NPM Registry, and it hosts public and private 'packages.' To add or update packages, we use the NPM CLI to interact with this database.
Yarn is alternative of npm

What is the NPX?

NPX stands for Node Package eXecute. It is simply an NPM package runner. It allows developers to execute any Javascript Package available on the NPM registry without even installing it.

Npm vs Npx
NPM means to install packages from node package manager
Npx means to execute package without installing it



NPM	NPX
NPM is a package manager used to install, delete, and update Javascript packages on your machine.	NPX is a package executer, and it is used to execute javascript packages directly, without installing them.
NPM installs packages globally, which means that your machine may be polluted by packages that are not required anymore in the long run.	NPX does not install packages, so package pollution on the machine is not a concern.
To use create-react-app using NPM, we would first have to install it globally, and then run it, which makes using NPM in such cases redundant.	The most common application of NPX is the create-react-app command. Since we only need to use it once, i.e., while initializing the project, we do not install it.

Why cdn is not a good way to fetch react in our application?

Fetching react and react dom from cdn is not a good way because i have to do service calls to `https://unpkg.com/react@18/umd/react.development.js`
So if React would be in node module , it would be easy to use.
Now we will install React to our package
Download react as a normal dependency
npm install react
Npm install react-dom
For importing React and Reactdom , we need to import react and react-dom in our application. And for that we need to add `type="module" for writing script tag`

```
    <script type="module" src="./App.js"></script>
```

So that App.js will be considered as a module and can import any React or ReactDom package

What is a bundler?

A bundler is a development tool that combines many JavaScript code files into a single one that is production-ready loadable in the browser

What is `Parcel/Webpack`? Why do we need it?

`Parcel/Webpack` is a type of a web application bundler used for development and production purposes or power our application with different type functionalities and features. It offers blazing fast performance utilising multicore processing, and requires zero configuration. Parcel can take any type of file as an entry point, but an

HTML or JavaScript file is a good place to start. Parcel/Webpack are type of bundlers that we use to power our application with different type functionalities and features.

Adding this `.parcel-cache and disc folder`
To .gitignore file

Parcel Features:

- HMR (Hot Module Replacement) - parcel keeps track of file changes via file watcher algorithm and renders the changes in the files
- File watcher algorithm - made with C++
- Minification
- Cleaning our code
- DEV and production Build
- Super fast building algorithm
- Image optimization
- Caching while development
- Compresses
- Compatible with older version of browser
- HTTPS in dev
- Port Number
- Consistent hashing algorithm
- Zero Configuration
- Automatic code splitting

installation commands:

- Install:

```
npm install -D parcel
```

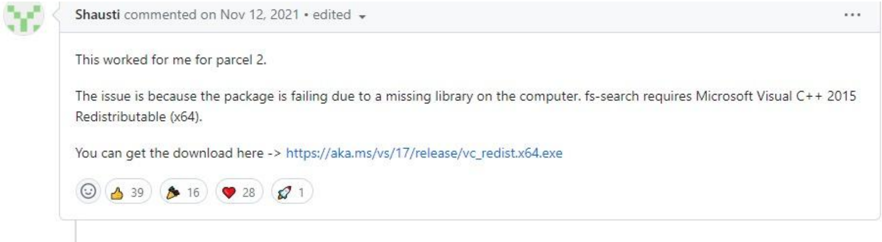
-D is used for development and as a development dependency.

- Parcel Commands :
  - For development build:

```
npx parcel <entry_point>
```

-
  - For production build :
- npx parcel build <entry_point>

If you get this error Error: The specified module could not be found.
while using npx parcel index.html



Shausti commented on Nov 12, 2021 • edited

This worked for me for parcel 2.

The issue is because the package is failing due to a missing library on the computer. fs-search requires Microsoft Visual C++ 2015 Redistributable (x64).

You can get the download here -> https://aka.ms/vs/17/release/vc_redist.x64.exe

☺ 👍 39 🎉 16 ❤ 28 🚀 1

You can get the download here -> https://aka.ms/vs/17/release/vc_redist.x64.exe

What is `.parcel-cache`?

cache folder (or . parcel-cache in parcel v2) stores information about your project when parcel builds it, so that when it rebuilds, it doesn't have to re-parse and re-analyze everything from scratch. It's a key reason why parcel can be so fast in development mode.

Q: What is difference between dependencies vs devDependencies?

Dependencies should contain library and framework in which your app is built on, needs to function effectively. such as Vue, React, Angular, Express, JQuery and etc. DevDependencies should contain modules/packages a developer needs during development. such as, parcel, webpack, vite, mocha. These packages are necessary only while you are developing your project, not necessary on production. To save a dependency as a devDependency on installation we need to do,

Q: What is the `dist` folder?

A: The `/dist` folder contains the minimized version of the source code. The code present in the `/dist` folder is actually the code which is used on production web applications. Along with the minified code, the /dist folder also comprises of all the compiled modules that may or may not be used with other systems.

Q: What is `browserslist`?

A: Browserslist is a tool that allows specifying which browsers should be supported in your frontend app by specifying "queries" in a config file. It's used by frameworks/libraries such as React, Angular and Vue, but it's not limited to them.