# Chapter 02 - Assignment - Igniting our App

Please Note: *Write the answers and code on your own while finishing your assignments. Try to put down your thoughts into words by yourself in your own words. (This will help you develop muscle memory and you will remember all the concepts properly)* ✌

**# Theory Assignment:**
- - What is `NPM`?

   npm is the world largest software registry. Open source developers from every continent share ,borrow packages and many private organizations use npm to manage their private development also.


   - What is `Parcel/Webpack`? Why do we need it?
   Parcel/Webpack are bundlers which helps to bundle our app to make ready to ship it to production

   We need bundler for following reason
   1. Bundle app to make it ready for productions
   2. To minified the whole project size
   3. Bundlers do provide a lost of functionality which make our app fasters for eg HMR , Image optimizations , Tree Shaking and many more

- - What is `.parcel-cache`
   When you run the parcel build the first time it will take some milliseconds and run after you make some changes and run it again this time it will be faster .

- - What is `npx` ?
   npx is a cli command which install and executes a package from npm registry .

- - What is difference between `dependencies` vs `devDependencies`
   The key difference between dependency and devDependency is that packages listed in the devDependency or packages used as devDependency won't  be installed in the production as they were only needed on the development phase and this will reduce the size and optimize app in the productions

- - What is Tree Shaking?
   Tree Shaking is an algorithm which eliminates all the dead code or unused code from the project .
- - What is Hot Module Replacement?
    HMR means to reload the update module on runtime in the browser without reloading the whole page . this can be done for small changes such as css styles

- - List down your favorite 5 superpowers of Parcel and describe any 3 of them in your own words.
  1. Hot Reloading
  2. Tree Shaking
  3. Caching
  4. dev server
  5. Miniications


1. Hot Reloading.

As you change your code, parcel automatically rebuilds the changed files and updates the browser  and reloads the app in the browser . Sometimes it may also perform HMR to improve efficiency and performance of the web browser .

HMR improves the developer experience by  updating the modules at runtime in the browser without refreshing the whole app. This means for small changes the  state of the app can be retained.

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It does this by ,it keeps track of all changes in realtime in the file using   File Watcher Algorithm written in c++  , which tells the parcel to reload the server


2. Tree Shaking.
  On Crating parcel build it eliminates all the dead code or unused cod

3. Dev Server
  Ans : Parcel provide a build in dev server which you start by writing cli command parcel filename.html
  It also lets you configure different port numbers using -port and also can configure which browser starts by default.

- - What is `.gitignore`? What should we add and not add into it?
  .gitIgnore is  a file in which can write the file and folder name which we don't want to add in our git repository

- - What is the difference between `package.json` and `package-lock.json`
  The key difference between package json and package-lock.json is that package json has a generic configuration of each package but in package.lock .json  has exact version of each package configuration .

- - Why should I not modify `package-lock.json`?
  Each configuration in package -lockage .json has exact working version and also its ssh keys  pushed by developer ,if you edit that it will be like it will not work in prod or dev ,as

the configuration is changed

- ● - What is `node_modules` ? Is it a good idea to push that on git?
  The node_modules directory is a folder in a Node.js project that contains all the libraries and dependencies installed from the npm (Node Package Manager) registry

  No it is good idea to push it on git

- ● - What is the `dist` folder?
  The dist folder (short for "distribution") is a directory commonly used in web development to store the compiled or bundled output of your project. This folder typically contains files that are ready to be deployed to a production environment

- ● - What is `browserlists`
  Browserslist is a configuration tool used in front-end development to specify which browsers should be supported by your project. This configuration helps tools like Autoprefixer, Babel, ESLint, and various other build tools and polyfills to target the specified browsers when processing your code

  Read about dif bundlers: vite, webpack, parcel
- ● Read about: ^ - caret and ~ - tilda

- ● Read about Script types in html (MDN Docs)

# Project Assignment:
- In your existing project
  - ● - intialize `npm` into your repo
  - ● - install `react` and `react-dom`
  - ● - remove CDN links of react
  - ● - install parcel
  - ● - ignite your app with parcel
  - ● - add scripts for "start" and "build" with parcel commands
  - ● - add `.gitignore` file
  - ● - add `browserlists`
  - ● - build a production version of your code using `parcel build`

done - https://github.com/shubham12346/NamasteReact/tree/main/ignition
# References
- ● [Creating your own create-react-app](Creating your own create-react-app)
- ● [Parcel Documentation](Parcel Documentation)
- ● [Parcel on Production](Parcel on Production)
- ● BrowsersList: [https://browserslist.dev/](https://browserslist.dev/)