Chapter-02

1. **What is npm?**

NPM is a package manager or a registry from where we can find different modules for node programs. It is used to publish, discover and install various node modules.

2. **What is parcel/webpack? Why do we need it?**

Parcel/Webpack are bundlers. This bundlers are used to bundle our whole app into single js, html, css and image files, thus making it is to build a production ready app by using various features to make the code efficient and reducing the load time in browser. Since our React app requires various other features to make it run on browser efficiently hence this bundlers are being used.

This Bundlers provides various features like,

- Live dev server
- Hot Module Replacement
- Minification
- Dev and production build
- Image optimization
- Tree shaking
- Compression
- Zero config
- File Watcher Algorithms
- Compatibility with older version of browser
- Port Number

3. **What is .parcel-cache?**

.parcel-cache file is used by parcel for detecting the changes in code by using the cached data using various caching algorithm to reload the app whenever the changes are detected in code.

4. **What is npx?**

npx is used for executing the modules. Instead of installing the packages locally using npm , npx can directly execute the package code.

5. **Difference between dependencies and devDependencies?**

dependencies are the global dependency modules which will be used by app in production build. While the devDependencies are only used during the local development, they are not required in the production build.

6. **What is Tree Shaking?**

Tree shaking is a method to remove unwanted or unused code in our app which is basically done by the bundler. It basically relies on the import and export statement used in the modules, it removes the export code which is not used to make the production build file size smaller and efficient.

7. **What is Hot Module Replacement?**

Hot Module Replacement(HMR) as the name suggests it adds, update or remove modules in an app without full-reload of webpage which significantly improves the speed and experience.

Below are the few steps on how it works :

1. Application asks the HMR runtime to check for updates.
2. HMR runtime asynchronously downloads the updates and notifies app about it.
3. The Application asks HMR to apply updates.
4. HMR applies updates synchronously.

8. **List down 5 superpowers of parcel and explain any 3 of them.**

Below are the features of Parcel :

1. Live Dev Server
2. Hot Module Replacement
3. Bundling
4. Tree Shaking
5. Compression

Bundling is the process of comprising different script and styling files into a single file which is minified. This improves the code efficiency and reduces the file size in production build.

Parcel provides the dev server so that we don't have to use the file path in order to run our application and moreover it provides the different ports for multiple apps. And bcoz of Hot Module Replacement it reloads the page automatically by updating the required changes.

For Compression, Parcel uses different techniques to remove the unused code and minifies it by changing the required variable names and removing unnecessary white space which results in a compressed and minified version of code for better efficiency.

9. **What is .gitignore? What should we add and not add into it?**

A .gitignore is a plain text file which is used to list the files and folders which we don't want to be tracked by Git. We should add files which are auto-generated in our project to .gitignore.

10. **What is difference between "package.json" and "package-lock.json"?**

"package.json" is used for defining various dependencies and project deatails required in our app. It stores the approximate version of the particular modules which can be upgraded in future. While the "package-lock.json" file is used to lock this version of dependencies which will not cause any kind of conflict due to the future version updates.

11. **Why should we not modify “package-lock.json”?**

Since this package-lock.json keeps our dependencies version locked, in order to not get the conflict with the production environment we should not modify it.

12. **What is node_modules and should we push it on git?**

node_modules contains the required modules and code for the dependencies that we have installed in our project. We should not push node_modules to git as it can be auto-generated later based on package-lock.json file data.

13. **What is ‘dist’ folder?**

The “dist” folder stores the minified code or a bundle of our app when we create a production ready build.

14. **What is ‘browsereslist’?**

“Browserlists” is used to define the browsers version which our app should support. We can limit our app to support different browsers and run on specific versions only.