1. **Webpack**

Webpack is a popular open-source JavaScript module bundler. It takes our application code and its dependencies, such as styles, images, and other assets, and bundles them together in a way that is optimized for deployment in a web browser.

**Pros of webpack**

**Module Bundling**

Webpack allow us to bundle all our project assets, including JavaScript, css, images and more, into a single or multiple optimized bundle. This help reduce the number of HTTP requests, leading to faster page loads.

**Code splitting**

Webpack supports code splitting, allowing us to split our code into smaller chunks. This is especially beneficial for large application, as it enables lazy loading of parts of the application, improving initial load time

**Loaders**

**Hot module replacement**

**Large ecosystem**

**Configuration flexibility**

**Optimization**

**Integrated development server**

**Cons of webpack**

**Configuration complexity**

The flexibility of webpack comes with a trade-off of a potentially steep learning curve and complex configuration for more advanced setup. Beginner might find the setup and configuration overwhelming

**Build tim**

As project grows in size, webpack build tim can increase. This can be a concern for larger applications, and developers might need to explore strategies to optimize build tim

**Documentation learning curve**

**Plugin compatibility**

**Opinionated choices**

1. **Babel**

Babel is a javascript compiler that transforms ECMAScript 2015+ code into backward compatible version of javascript that can run in older browsers or environments.

Babel is widely used in modern web development to enable developers to write code using the latest ECMAScript features while ensuring compatibility with a broad range of browsers.

1. **npm and yarn**

**current version**

**npm 10.2.4**

**yarn 1.22.21**

npm is default package manager for node js and JavaScript.it consists of a command line client, also called npm, and online database of public and paid for private packages called the npm registry

yarn stands for yet another resource negotiator and it is a package manager just like npm.it was developed by facebook and is now open source. The intention behind developing yarn was to fix performance and security concerns with npm.

Installation process

Lock files

Output log

The “why” command

License checker

Fetching packages

Offline mode

1. **Dom**

The dom stands for document object model, is a programming interface and representation of structured documents. It primarily applies to web document like HTML and XML, but it is most commonly associated with HTML and the structure of web pages.

The dom represents a document as a tree like structure, where each node in the tree corresponds to a part of the document.

1. **Rendering**

Rendering refers to the process of the browser display web pages, involving parsing HTML, applying styles, and rendering content

Each rendering , in the context of web development, typically refers to the lifecycle of rendering a component/ view in a web application

Server side rendering

Client side rendering

Static site generation

Hybrid rendering

Incremental static regeneration