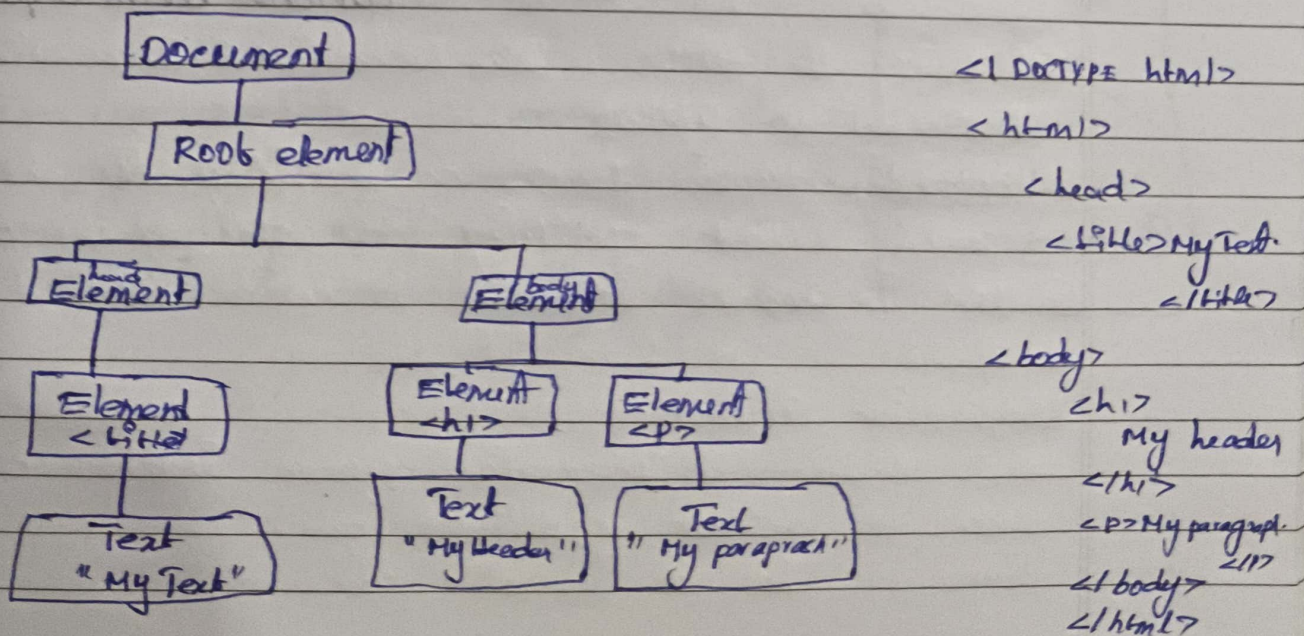React - Js Interview Questions

① What is React?

React is an open source Javascript library
React is used for building user interfaces (UI)
React simplifies the creation of Single page Applicaton
by using reusable components.

② Key feautere of React
① Virtual DOM
② Component Based Architecture
③ Reusability & composition
④ JSX (Javascript XML)
⑤ Declarative Syntax
⑥ Community & Ecosystem
⑦ React Hooks.

what is DOM? Difference b//w HTML and DOM?

```
┌──────────┐
│ Document │
└──────────┘
     │
  ┌──────────────┐
  │ Root element │
  └──────────────┘
     │
  ┌─────────┐              ┌─────────┐
  │ Element │ head         │ Element │ body
  └─────────┘              └─────────┘
     │                        │
  ┌─────────┐        ┌─────────┐   ┌─────────┐
  │ Element │        │ Element │   │ Element │
  │ <title> │        │ <h1>    │   │ <p>     │
  └─────────┘        └─────────┘   └─────────┘
     │                   │              │
  ┌─────────┐      ┌───────────┐  ┌──────────────┐
  │ Text    │      │ Text      │  │ Text         │
  │ "My Text"│     │"My Header"│  │"My paraprach"│
  └─────────┘      └───────────┘  └──────────────┘
```

```
<! DOCTYPE html>
<html>
  <head>
    <title>My Text
    </title>
  <body>
    <h1>
      My header
    </h1>
    <p>My paragraph
    </p>
  </body>
</html>
```
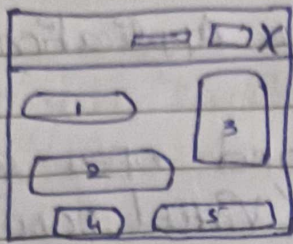
DOM (Document Object Model) represents the Webpage as a tree-like structure which allows javascript to dynamically access and manipulate the content and structure of a web page

Virtual DOM & Difference b/w DOM and Virtual DOM

React uses a virtual DOM to efficiency update the UI without render the entire page. which helps improve performance and make the application more responsive.

DOM	Virtual DOM
① DOM is actual representation of the webpage	Virtual DOM is lightweight of the DOM.
② Re-renders the entire page when updates occur.	Re-renders only the changed parts only.
③ can be slower, especially with frequent updates.	optimized for faster render
④. Suitable for static websites and simple applications	Ideal for dynamic and complex single-page applications with frequent updates

Roact Components? what are the main elements?


```
import React from "react".
function components() {
  return (
    <div>
      <h1> I am a react reusable compo
    </div>                          </h1>
  );
}
export default component;
```
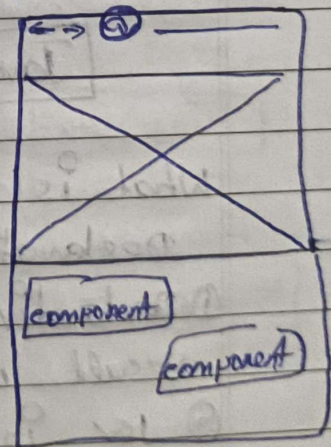
What is Single page Application?

A Single page Application (SPA) is a web applications
that have only one single web page.

whenever used to user do some action on the
website, then in responce content is dynamically
updated without refreshing or loading a new page.

If page is reloading is known
as multipage application

If we update a component in
a page if it is new page is
not loading only component will
refresh is called single page App.

What are advantages of React?

① Simple to build single page Application (by using component).
② React is cross platform and open source
③. Lightweight and very fast (Virtual DOM)
④ Large community and Ecosystem.
⑤ Testing is Easy.

What are Disadvantages?
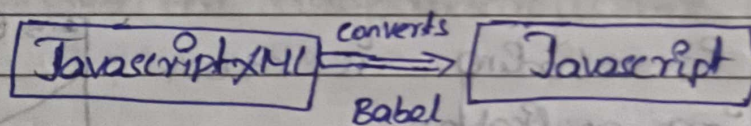
React is not for a very simple applications.

* Time killing

What is the JavascriptXML (JSX)

JSX stands for JavascriptXML
JSX is used by React to write HTML-like code
JSX is converted to Javascript via tools like Babel

```
┌──────────────┐  converts  ┌──────────────┐
│ JavascriptXML │ ========> │  Javascript  │
└──────────────┘   Babel    └──────────────┘
```

What is the difference b/w Declarative & Imperative syntax?
Declarative Syntax
① Declarative syntax focuses on describing the desired result without specifying the step-by-step procs.
② JSX in React is used to write declarative syntax.

Imperative Syntax:
            Imperative syntax involves step-by-step process to achieve a particular goal.
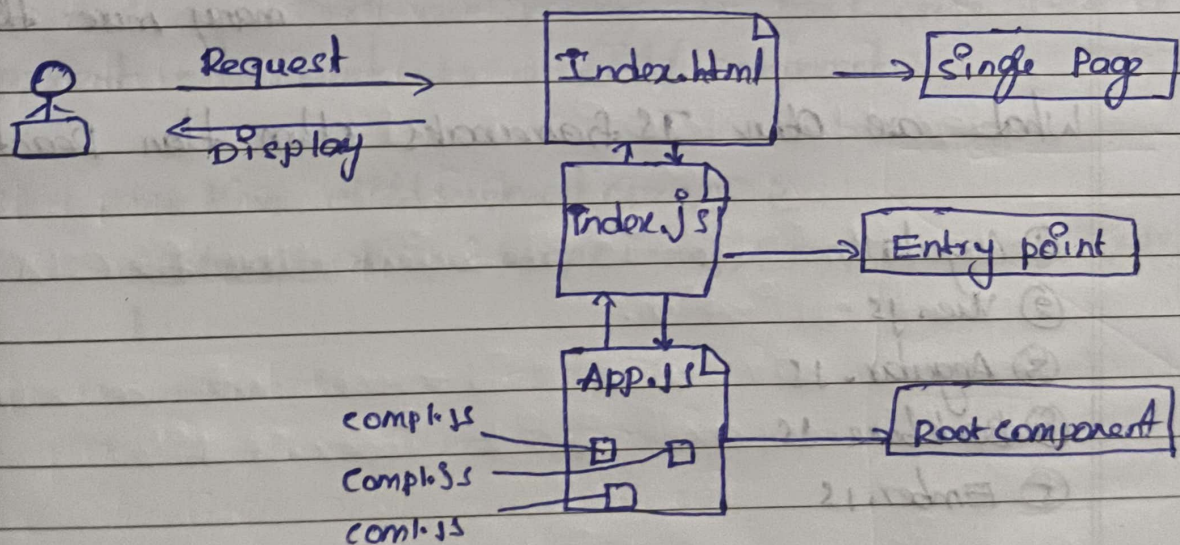Javascript has an imperative syntax.

What is Arrow Function Expression in Jsx?

```
// Regular Function                    //Arrow Function Expression
function AppFun(props){                const ArrowFunc = ( props) => {
  return (                              return (
  <div>                                 <div>
    <h1>{ prop.name}</h1>                 <h1>{ props.name }</h1>
  );                                    </div>
}                                       );
  export default AppFunc;               }
                                        export default ArrowFunc;
```

The arrow function expression syntax is a concise way
of defining functions.

How React App load and display the components in browser?

What is difference b/lw React and Angular?

React	Angular
1. Single Page Application	Single Page Application
2. React is Javascript Library	Angular is a complete framework
* 3. uses virtual DOM which makes faster	Angular uses Real DOM.
* 4. React is smaller in size and lightweight therefore faster	Angular is bigger because it is complete framework.
5. React depends on external libraries for many complex features, so developer has to write many lines of code for complex functionalities	Since Angular is a complete framework, therefore it provide built-in support for features like routing, forms validation
* 6. ~~Angular~~ React is simple to learn and more popular then Angular.	Angular is slightly difficult to learn this Typescript, oops concept and many more thing.

What are other JS frameworks other than React?

① Angular
② Vue. js
③ Angular. Js
④ Backbone. Js
⑤ Ember. Js

→ React is a Javascript Library.

→ In future it may be can chase framework.

How React provide Reusability and composition.

→ using components to child component is known as Reusability

→ composition is creating new and big components by combining existing small components.

→ It advantage is change to one small component will not impact other components.

What are state, stateless, stateful and state management terms?

State refers to the current data of the component

Stateful or state management means, when user performs some actions on the UI, then the react application should be able to update and re-render that data or state on the UI

What are props on Jsx?

Props (properties) are a way to pass data from a parent component to a child component.

Ex:

```
function childComponent (props) {
    return <div> { props.name }, { props.purpose } </div>;
}
```

React Project - Files & Folders

① What is NPM? what is the role of node_modules folder?

NPM (Node Package Manager):
It is used to manage the dependencies for your React project, including the React library itself.

Public folder in React?

Public folder contains static assets that are served directly to the user's browser, such as images, fonts, and the index.html file.

Source folder in React?

Src folder is used to store all source code of the application which is then responsible for the dynamic changes in your web application.

index.html Page in React?

index.html file is the main HTML file (SPA) in React application.
Here the div with "id = root" will be replaced by the component inside index.js file.

what is the role of index.js file React DOM in React?

ReactDOM is a JavaScript library that renders components to the DOM or browser.
The index.js file is the jav