# Chapter 04 - Talk is cheap, show me the code

## Building Food villa (similar to swiggy.com)

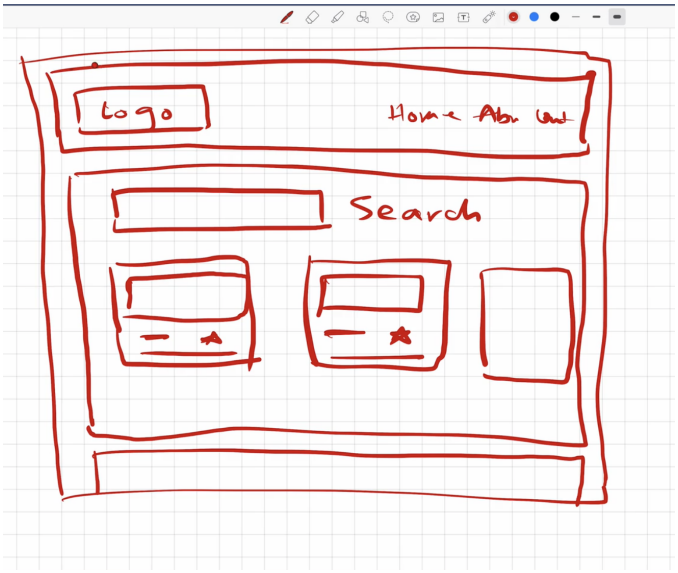
### Akshay's Code:

Bitbucket

https://bitbucket.org/namastedev/namaste-react-live/src/21cb5ff0115f544b19edef37f813f8a5e4f3714b/

### ▼ Steps

- First step - Planning (using good notes app)




- Prepare AppLayout

```
JS App.js > AppLayout
19  };
20
21  const AppLayout = () =>{
22    return (
23      {/**
24       Header
25          - Logo
26          - Nav Items(Right Side)
27          - Cart
28       Body
29          - Search bar
30          - RestrauntList
31            - RestaurantCard
32                - Image
33                - Name
34                - Rating
35                - Cusines
36       Footer
37        - links
38
39      */
40      }
41    )
```

- Code for each component

## ▼ React Fragments:

- Any piece of JSX component we write - there can be only one parent. But add extra div is ugly So we can use React.Fragment
- React.Fragment is a component exported by React

```
const jsx = (
  <React.Fragment>
    <h1>JSX</h1>
    <h1>Second JSX</h1>
  </div>
);
```

- This will not add additional node in DOM. Its like an empty tag. We can try this way (empty tag) too

```jsx
// React.Fragment
// jSX - one parent
const jsx = (
  <>
    <h1>JSX</h1>
    <h1>Second JSX</h1>
  </>
);
```

## ▼ Styling in React

- Inline styling

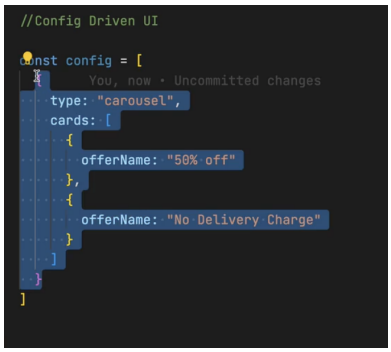
```jsx
const styleObj = {
  backgroundColor: "red",
};

// Inline stylig in React
const jsx = (
  <div style={styleObj}>
    <h1>JSX</h1>
    <h1>Second JSX</h1>
  </div>
);
```

- Other way is to use className and write style in index.css
- Anothert way: Other way using external library: Tailwind, Bootstrap, materialUI etc

## ▼ Config Driven Ui

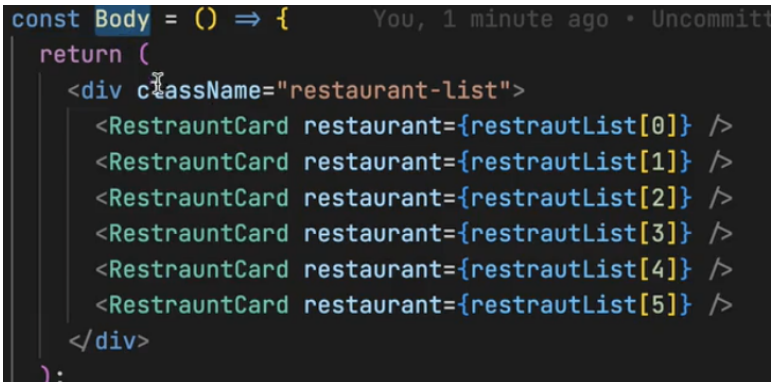
- UI is driven by config returned by backed api
  Eg: How website look in different cities

  Eg: swiggy shows carousel with offers specific to cities

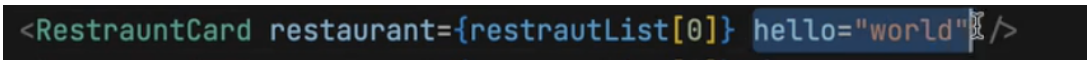



## ▼ Props

- Props means properties - Passing data into component

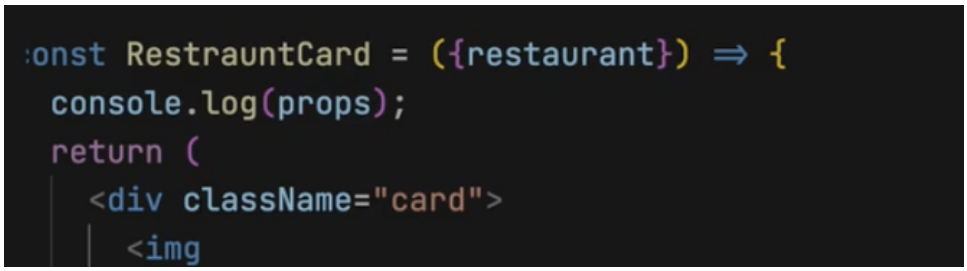



- How do pass props to Functional component?
  - Funtional component is just a Javascript function, nothing special. So we pass props as params and arguments.
  - Props is just a nomenclature in React, at the end its just a function parameter
  - **Difference is that React wraps up all the properties into one object called props.**




- We need not call it as props, can be different name too


- We can also restructure the prop and use only needed field




- We can also use spread operator

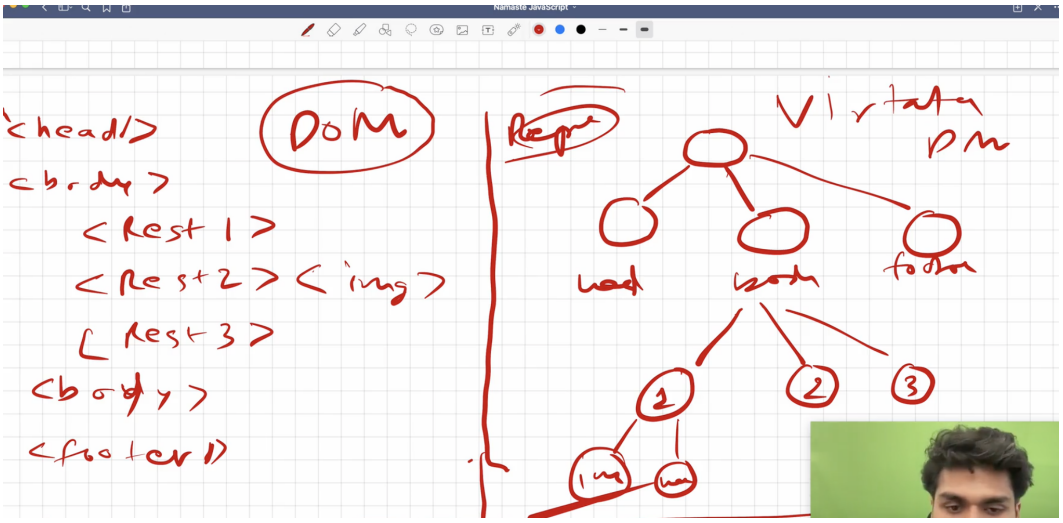
```
//props - properties
const Body = () => {
  return (
    <div className="restaurant-list">
      <RestrauntCard {...restrautList[0].data} />
      <RestrauntCard {...restrautList[1].data} />
      <RestrauntCard {...restrautList[2].data} />
      <RestrauntCard {...restrautList[3].data} />
      <RestrauntCard {...restrautList[4].data} />
      <RestrauntCard {...restrautList[5].data} />
    </div>
  );
};
```

- We can use map to render components many times in loop, passing props using map

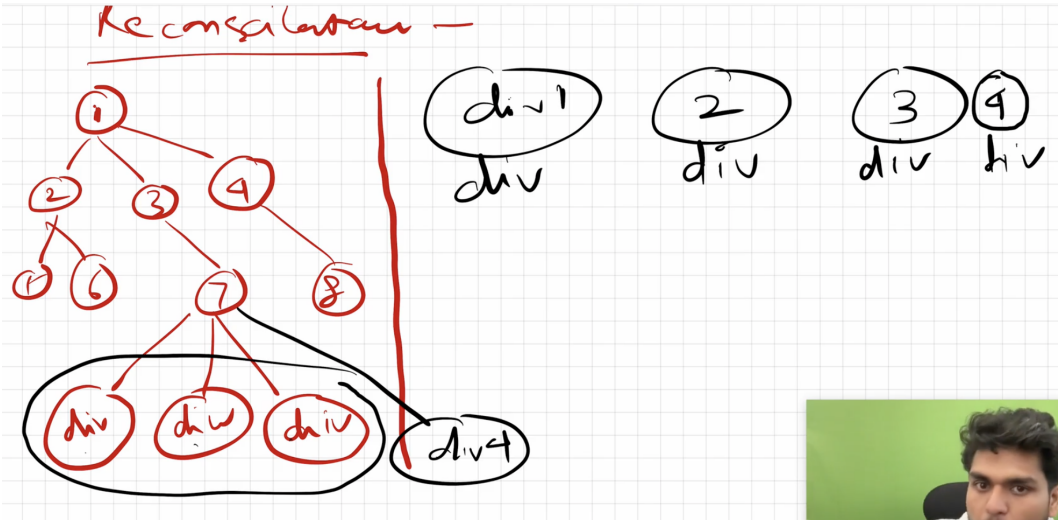
```
//props - properties
const Body = () => {
  return (
    <div className="restaurant-list">
      {restrautList.map((restaurant) => {
        return <RestrauntCard {...restaurant.data} />;
      })}
    </div>
  );
};
```

## ▼ Vitual DOM, Reconciliation, Keys, React Fibre

- Virtual DOM is a software engineering concept - We keep a representation of DOM with us in our code - Virtual DOM. Read Doc https://legacy.reactjs.org/docs/faq-internals.html




- Why do we need VDOM?
  - For Reconciliation in React
- What is Reconciliation?
  - Read DOC: https://legacy.reactjs.org/docs/reconciliation.html
  - Algorithm that React uses to diff one tree from other, and it determines what needs to be changes in UI & what does not need to be changed



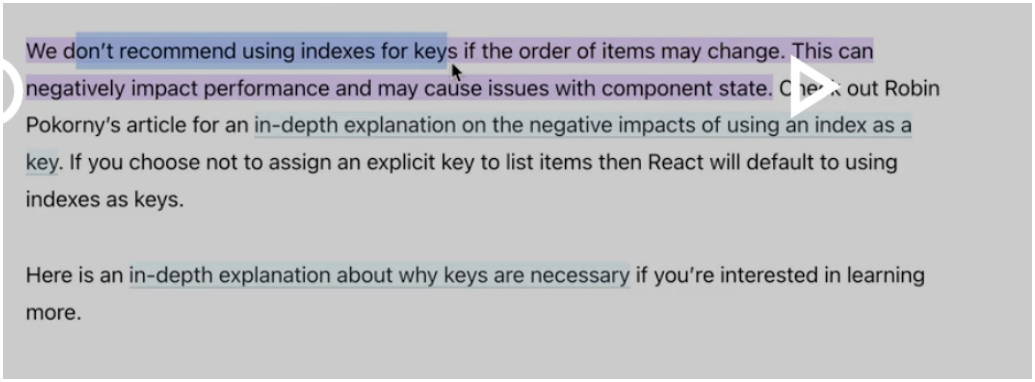

    - If 7 is changed, not everything needs to be rerendered. Only 7 and its children

- What happens if new div is added to 7 - React will know which div got changed, so it will rerender all. But If we add key - React will render only new div
- So give Key

```
const Body = () => {
  return (
    <div className="restaurant-list">
      {restrautList.map((restaurant) => {
        return <RestrauntCard {...restaurant.data} key={restaurant.data.id} />;
      })}
```

- Why we should not use index as our key: Read Doc: https://robinpokorny.com/blog/index-as-a-key-is-an-anti-pattern/

```
{restrautList.map((restaurant, index) => {
  return <RestrauntCard {...restaurant.data} key={index} />;
})}
```




If you no key - use index key

```
// no key (not acceptable)<<<<<<<<<<< index key(last option) <<<<< unquie key (best practice)
```

- Why React is fast?
  - React uses VDOM. Uses Reconcilloation, which has diff algorithm and rerenders only the portions that changed in trees.
- What is React Fiber

- New reconcialliation engine added in React 16. Its responsible for Diff
- https://github.com/acdlite/react-fiber-architecture

## ▼ Test data in code

- Its from swiggy website network tab
- Just fyi - These food images are from cloudfront - and we can just get Id from api & append

```
src={
  "https://res.cloudinary.com/swiggy/image/upload/fl_lossy,f_auto,q_auto,w_508,h_320,c_fill/" +
  restrautList[1].data?.cloudinaryImageId
}
```

- We can use firebase api too

## Code Output: