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SLIDE



Modern front-end core concepts & interview questions



SLIDE



Components

What are components in react?

- Building blocks of the user interface
- Each component exists in the same space but works independently
- All of the components are being merged in a parent component (the final UI)
- Splits UI into independent and reusable pieces
- Accepts input called props (optional) and returns react element
- Re-usable having their own structure and methods



Splitting a calculator app into react components



Types of component

Similar in look,
different in data

Container
component



No common pattern,
but breakdown for
working purpose

Stand-alone
component

Advantages of components

- Code re-usability
- Fast development
- Design consistency
- Maintainability (update just one component & get result in all spaces related to this component)





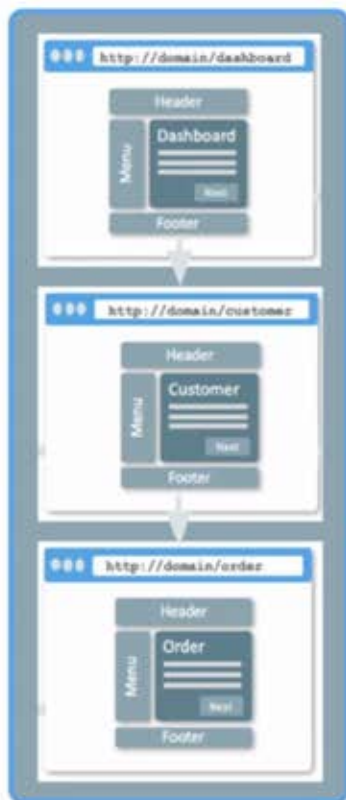
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Single Page Application (SPA)

What are single page applications?

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1. Only one web page, and each time something happens, only part of the page is reloaded while the rest of the HTML remains unchanged
2. All user interaction with this service is carried out, using one screen (page)
3. Load all the necessary HTML, CSS, and JavaScript in the initial page load, and then dynamically update their DOM and retrieve extra data based on user interactions
4. Give the users the illusion that they are accessing different pages or paths
5. Enables to combine a complex functionality of an MPA with a convenient navigation (a hybrid approach)

SPA vs MPA

Single Page Application

You request just the pieces you need.



Multi page Application

Every request for new information gives you a new version of the whole page.



SPA



MPA



SPA vs MPA

	SPA	MPA
Structure	One page	Many pages
Shareable links	One link for the whole website	Many links
Loading	Longer initial loading, but after that each piece of content is instantly refreshed	A bit quicker initial loading, but then the app reloads the whole page on each user's action which is time-consuming
Security	Needs more data protection on client side	Each page is protected on the server
UI and UX	Looks and feels like a native app	Must be adapted for mobile
Offline mode	Works with poor or non-existent internet	Does not work without the internet
SEO friendliness	Not SEO friendly, but optimization can be improved	Works with all search engines
Scalability	Difficult	Almost unlimited

Advantages of single page applications



Linear navigation



Instant loading



Offline mode



Native UX



Feature-rich UI



Cross-platform
adaptability



Flexibility



Quicker & cheaper
development

Disadvantages of single page applications



SEO issues



Longer initial
load time



No work under
high-loads



Security issues



Low scalability



Single sharable link



JS settings
dependency



Poor navigation



No history of
visits



Poor GA tracking

Pros and cons of Multi page applications

+



Limitless
extensibility



Better SEO

-



Needs a Page
reload



Harder to maintain
and update

Cases where SPA is more suitable

- Telling a story about your product by guiding a user from the top to the bottom of the screen (Documentation)
- Building a small app that costs less to create a big app from it in the perspective
- Creating an SPA as a temporary app while a highly time-consuming app is being developed
- You use such promotion channels as targeted ads and direct links from social networks and don't rely heavily on SEO. SPA is perfect for SaaS solutions, private communities, social networks.

Live examples of SPA

- Facebook news feed
- Twitter
- Trello
- Pinterest
- Gmail
- Google Maps
- Airbnb

Cases where MPA is more suitable

- You want to create a large online platform, offering a wide variety of products
- You need a lot of user interaction and technical features in your app
- SEO is more important for your project

Live examples of MPA

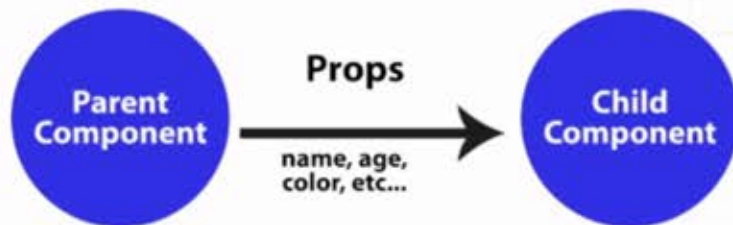
- Amazon
- eBay
- Aliexpress
- Forbes
- Thumbtack
- Angi

Props analogy with network

Communication Between Phones



Communication Between Components



Props are outside in a component, States are inside in a component

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state is used for internal
communication inside a Component

Also we have discussed in this module

- Dynamically creating html elements based on data
- What is routing, routing in react
- Explore destructuring and sending data using props
- What is state, purpose of state
 - logged in/ not
 - 5 likes in a post/ no like
 - 3 items in a cart/ no item

Interview questions

- What are the components in react?
- What do you mean by SPA?
- Examples of SPA, MPA
- What is the best between SPA and MPA?



Thank you!