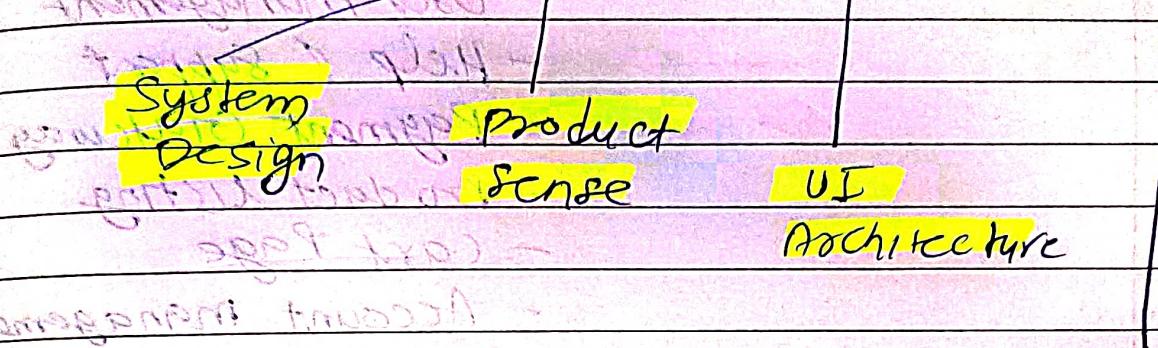


Cracking FrontEnd System Design

Type of frontend system design Interview



Things to consider in Frontend system design Interview

- Requirement
- Scoping (Prioritization)
- Tech Choices
- Component Architecture
- Data API & protocols & Implementation

Requirements

functional

- Demand / supply (B2B / B2C)
- Module level thinking
 - User management
 - Help & Support
 - Payment Gateway
 - Product listing
 - Cart Page
 - Account management.
- feature level thinking

Non-functional

- mobile / desktop
- responsive / adaptive
- Internet / Location / Devices.
- accessibility
- Asset Optimization.
(CSS, JS, Images)

Performance

- (FCP, LCP, TT, Web Vitals)
- CSR / SSR

Authentication / Authorization

- security
- caching
- offline support
- login & monitor
- A/B testing
- Testing
- Internationalization Localization
- version
- PWA
- CI/CD

Scoping (Prioritization)

Function

- Demand
- Module
 - Product Listing
 - Cart Page
- Features
 - Search
 - Listing
 - Product Details
 - Review
 - Add item to cart/wishlist
 - Cart List
 - Price Backup
 - Add/remove Products

Non-functional

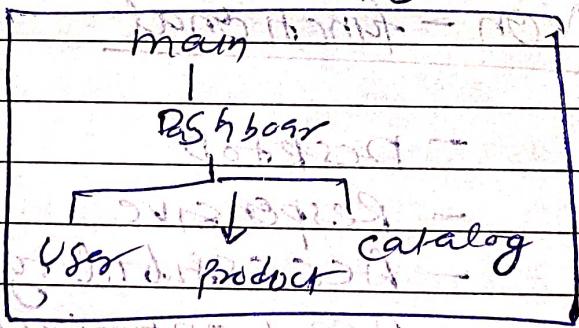
- Desktop
- Responsive
- Accessibility
- Asset Optimization
- Performance
- CSR/SSR
- Caching

Tech Choice

- Library / Framework
- State management
- folder structure
- packages
- Dependency (canvas, SVG, WebRTC)
- Design system
- Build tools (webpack, Rollup, parcel)

Component Architecture

- Component Hierarchy



- Routing
- Data Sharing

Data API & protocols & Implementation

Protocols

- Rest / GraphQL / SSE / APF
- JSON / Protocol Buffers

Implementation Detail

- Pagination / Infinite scrolls
- Debouncing / Throttling

API's

- `getProductList()`
- `getProductDetails()`
- `AddProductToCart()`
- `RemoveProductFromCart()`

Data Modeling

- URL
- Method (GET/POST/PUT)
- Request (query, body)
- Response (Data, Error)
- Status Code

Component

- State / Props
- Event Handling
- Customization (Theming / color)
- Reusability
- Data Source

HLD vs LLD

HLD

Requirement

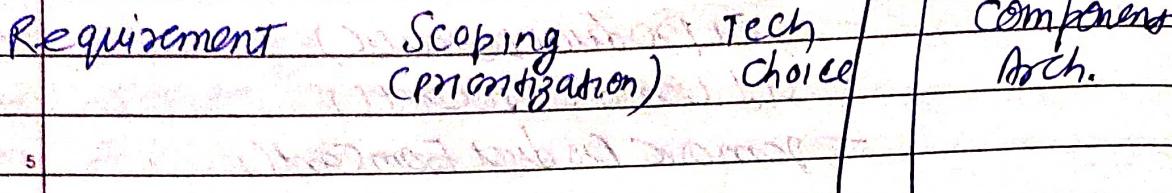
Scoping
(Prioritization)

Tech
choice

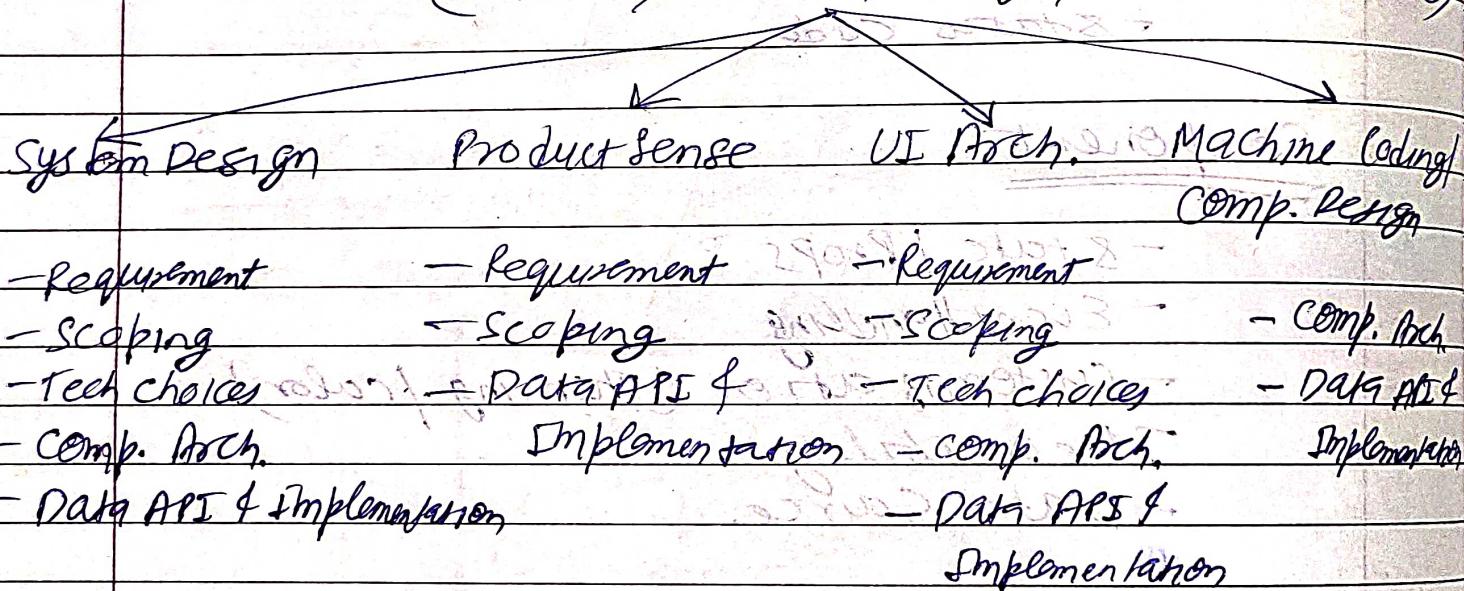
Component
Arch.

Data API
& Protocols
& Implementation

LLD



Types of Frontend System Design Interview (Business, Product, Design, Frontend, Backend)



Tools

- Draw.io
- Gravitty.com
- Lucidchart.com
- Micro.com
- One Note (Microsoft)
- Jamboard (Google)

Mistakes of Cacking System Design

- Don't be like Pushpa
- keep on checking requirement / expectation
- keep talking
- don't jump into implementation
- pick one problem at a time.
- get familiar with the tools.
- practice 2-3 system design using different tools.
- Discuss \Rightarrow think \Rightarrow take an approach - Repeat