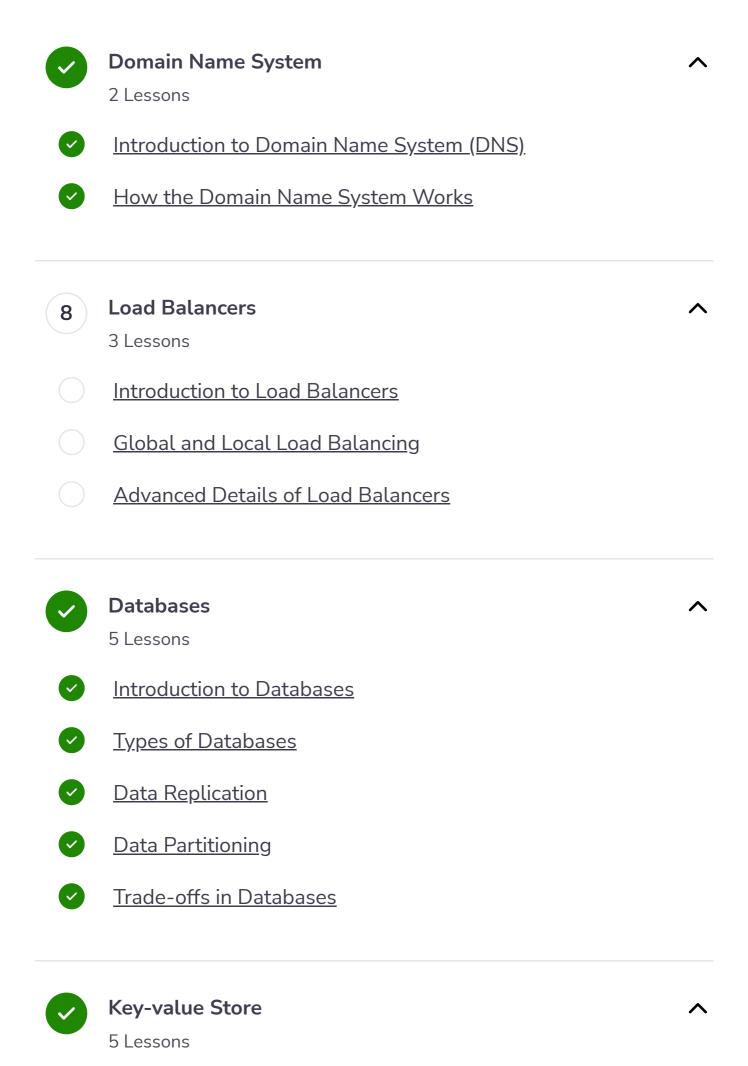
Course Overview

System Design interviews are now part of every Engineering and Product Management Interview. Interviewers want candidates to exhibit their technical knowledge of core building blocks and the rationale of their design approach. This course presents carefully selected... Show
More

Course Contents Collapse All Introduction 2 Lessons Introduction to Modern System Design Course Structure for Modern System Design **System Design Interviews** 3 Lessons What Is a System Design Interview? **How to Prepare for Success How to Perform** Well **Abstractions** 4 Lessons

Why Are Abstractions Important?

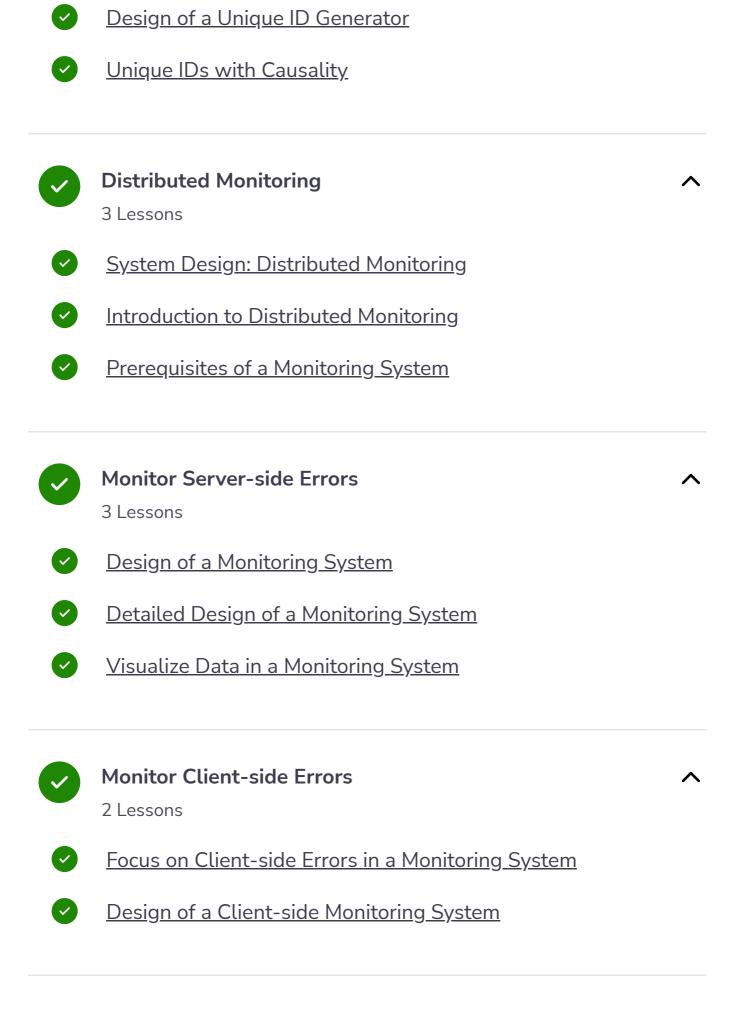
	Network Abstractions: Remote Procedure Calls
✓	Spectrum of Consistency Models
•	The Spectrum of Failure Models
	Non functional System Characteristics
	Non-functional System Characteristics 5 Lessons
•	<u>Availability</u>
⊘	<u>Reliability</u>
✓	<u>Scalability</u>
⊘	<u>Maintainability</u>
⊘	<u>Fault Tolerance</u>
▼	Back-of-the-envelope Calculations 2 Lessons
⊘	Put Back-of-the-envelope Numbers in Perspective
•	Examples of Resource Estimation
	Building Blocks
	1 Lesson
•	Introduction to Building Blocks for Modern System Design



System Design: The Key-value Store Design of a Key-value Store **Ensure Scalability and Replication** $\overline{\mathbf{Y}}$ Versioning Data and Achieving Configurability **Enable Fault Tolerance and Failure Detection Content Delivery Network (CDN)** 7 Lessons System Design: The Content Delivery Network (CDN) Introduction to a CDN **V** Design of a CDN In-depth Investigation of CDN: Part 1 **V** In-depth Investigation of CDN: Part 2 **Evaluation of CDN's Design** Quiz on CDN's Design **Hide lessons** Sequencer

3 Lessons

System Design: Sequencer





Memcached versus Redis

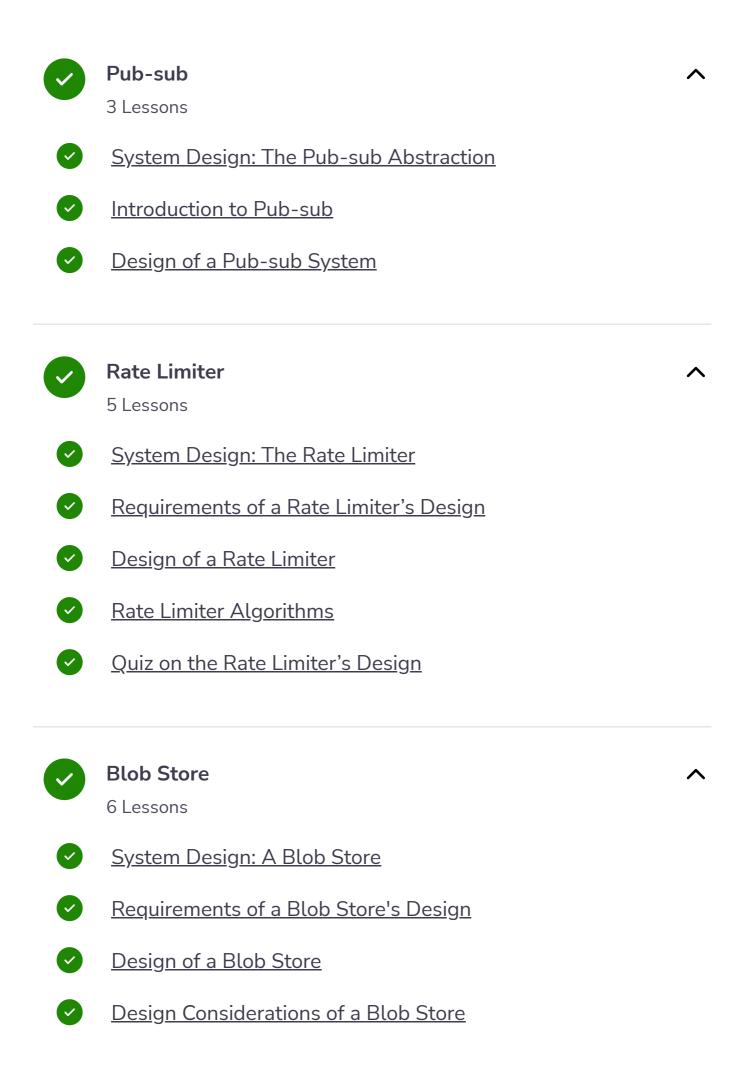
~

Hide lessons

Distributed Messaging Queue 7 Lessons System Design: The Distributed Messaging Queue

- Requirements of a Distributed Messaging Queue's Design
- Considerations of a Distributed Messaging Queue's Design
- Design of a Distributed Messaging Queue: Part 1
- Design of a Distributed Messaging Queue: Part 2
- Evaluation of a Distributed Messaging Queue's Design
- Quiz on the Distributed Messaging Queue's Design

Hide lessons



- **Evaluation of a Blob Store's Design**
- Quiz on the Blob Store's Design

Hide lessons



^

6 Lessons

- System Design: The Distributed Search
- Requirements of a Distributed Search System's Design
- Indexing in a Distributed Search
- Design of a Distributed Search
- Scaling Search and Indexing
- Evaluation of a Distributed Search's Design

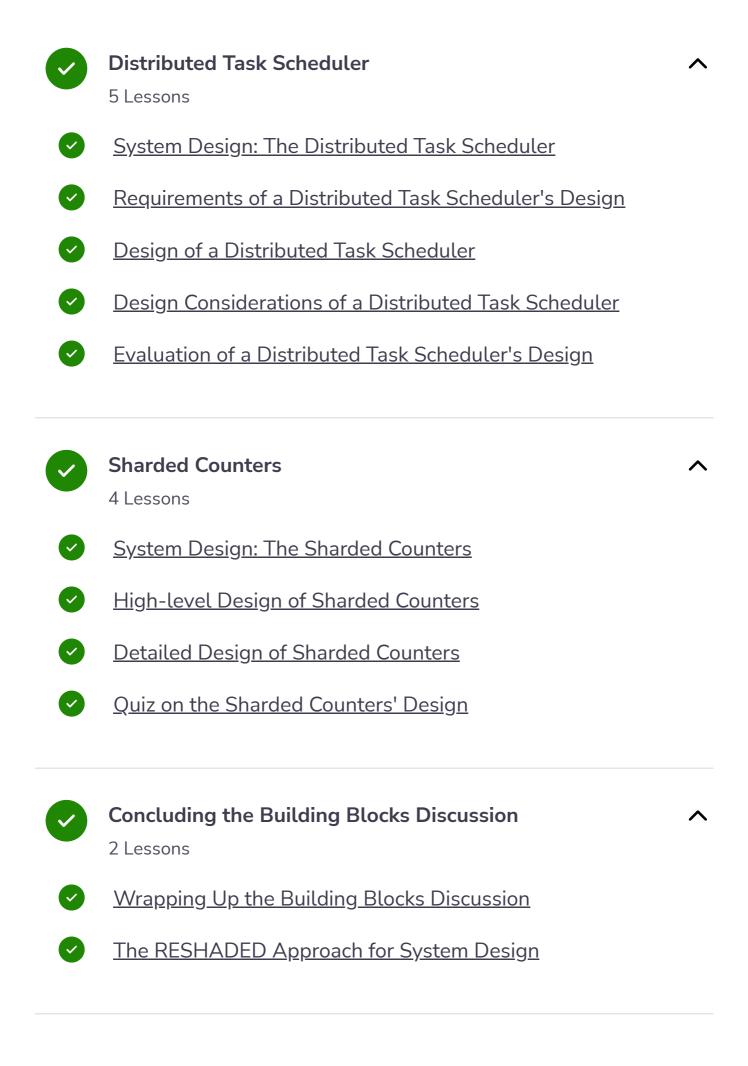
Hide lessons

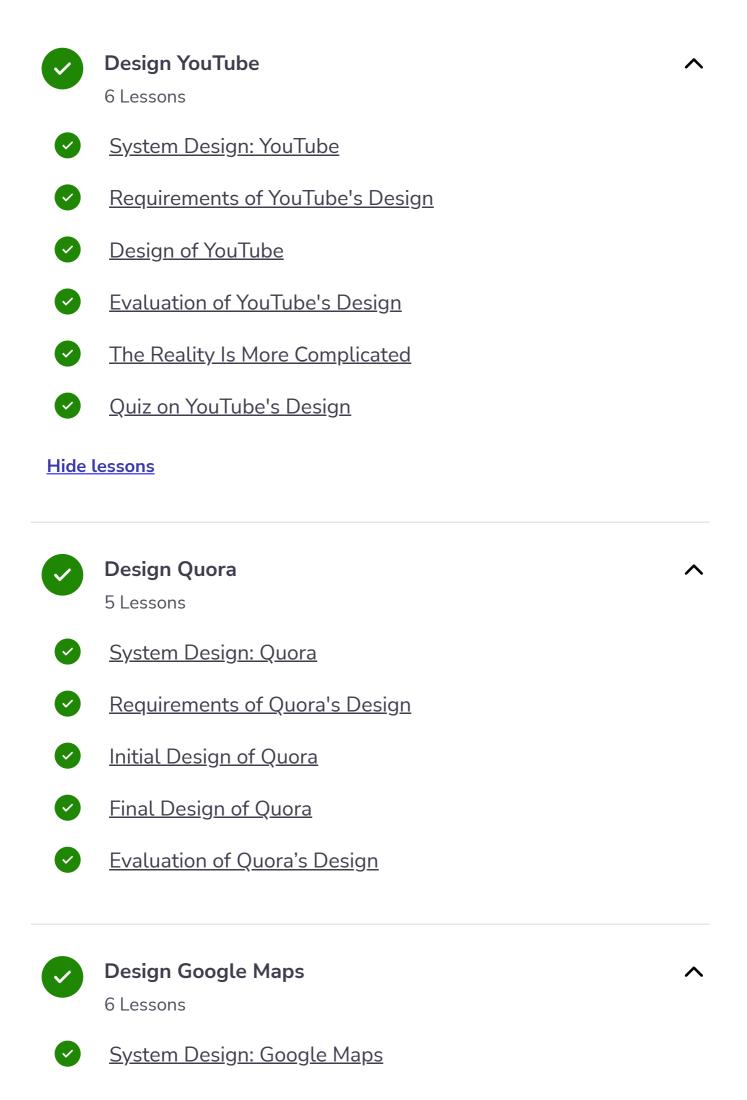
Distributed Logging

^

3 Lessons

- System Design: Distributed Logging
- Introduction to Distributed Logging
- Design of a Distributed Logging Service





Requirements of Google Maps' Design $\overline{\mathbf{A}}$ **Design of Google Maps** Challenges of Google Maps' Design **Detailed Design of Google Maps** Evaluation of Google Maps' Design **Hide lessons** Design a Proximity Service / Yelp 5 Lessons System Design: Yelp Requirements of Yelp's Design Design of Yelp Design Considerations of Yelp Quiz on Yelp's Design **Design Uber** 30 7 Lessons System Design: Uber Requirements of Uber's Design High-level Design of Uber

	<u>Detailed Design of Uber</u>			
⊘	Payment Service and Fraud Detection in Uber Design			
	Evaluation of Uber's Design			
	<u>Quiz on Uber's Design</u>			
Hide lessons				
31	Design Twitter 6 Lessons			
	System Design: Twitter			
	Requirements of Twitter's Design			
	<u>High-level Design of Twitter</u>			
	Detailed Design of Twitter			
	Client-side Load Balancer for Twitter			
	Quiz on Twitter's Design			
Hide lessons				
32	Design Newsfeed System 4 Lessons			
	System Design: Newsfeed System			
	Requirements of a Newsfeed System's Design			

	<u>Design of a Newsfeed System</u>
	Evaluation of a Newsfeed System's Design
33	Design Instagram 5 Lessons
	System Design: Instagram
	Requirements of Instagram's Design
	<u>Design of Instagram</u>
	Detailed Design of Instagram
	Quiz on Instagram's Design
34	Design a URL Shortening Service / TinyURL 6 Lessons
34	·
34	6 Lessons
34	6 Lessons System Design: TinyURL
34	6 Lessons System Design: TinyURL Requirements of TinyURL's Design
34	System Design: TinyURL Requirements of TinyURL's Design Design and Deployment of TinyURL

35	Design a Web Crawler 5 Lessons	^
	System Design: Web Crawler	
	Requirements of a Web Crawler's Design	
	<u>Design of a Web Crawler</u>	
	Design Improvements of a Web Crawler	
	Evaluation of Web Crawler's Design	
36	Design WhatsApp 6 Lessons	^
	<u>System Design: WhatsApp</u>	
	Requirements of WhatsApp's Design	
	<u>High-level Design of WhatsApp</u>	
	<u>Detailed Design of WhatsApp</u>	
	Evaluation of WhatsApp's Design	
	Quiz on WhatsApp's Design	
<u>Hide l</u>	<u>lessons</u>	
37	Design Typeahead Suggestion	^

7 Lessons

	System Design: The Typeahead Suggestion System
	Requirements of the Typeahead Suggestion System's Design
	High-level Design of the Typeahead Suggestion System
	Data Structure for Storing Prefixes
	Detailed Design of the Typeahead Suggestion System
	Evaluation of the Typeahead Suggestion System's Design
	Quiz on the Typeahead Suggestion System's Design
Hide I	<u>lessons</u>
38	Design a Collaborative Document Editing Service / Google ^
	Docs
	Docs 5 Lessons
	5 Lessons
	5 Lessons <u>System Design: Google Docs</u>
	5 Lessons System Design: Google Docs Requirements of Google Docs' Design
	5 Lessons System Design: Google Docs Requirements of Google Docs' Design Design of Google Docs
	System Design: Google Docs Requirements of Google Docs' Design Design of Google Docs Concurrency in Collaborative Editing
39	System Design: Google Docs Requirements of Google Docs' Design Design of Google Docs Concurrency in Collaborative Editing

Facebook, WhatsApp, Instagram, Oculus Outage	
AWS Kinesis Outage Affecting Many Organizations	
AWS Wide Spread Outage	
Concluding Remarks 1 Lesson	^
Conclusions	
	AWS Kinesis Outage Affecting Many Organizations AWS Wide Spread Outage Concluding Remarks 1 Lesson