

Syllabus

Complete 0-1 Syllabus

Foundation

- 1 Foundation Javascript, async nature of JS
- 2 Node.js and its runtime=
- 3 Databases (NoSQL/SQL)
- 4 Mongo and Postgres deep dive
- 5 Typescript beginner to advance
- 6 Backend
- 7 Backend communication protocols
- 8 Express basic to advance
- 9 ORMs
- 10 Middlewares, routes, status codes, global catches
- 11 Zod
- 12 MonoRepo, turborepo
- 13 Serverless Backends
- 14 OpenAPI Spec
- 15 Autogenerated clients
- 16 Authentication using external libraries
- 17 Scaling Node.js, performance benchmarks
- 18 Deploying npm packages

Frontend

- 1 Reconcilers and Frontend frameworks
- 2 React beginner to advance
- 3 Internals of state, Context API
- 4 State management using recoil
- 5 CSS you need to know of, Flexbox, basic styling
- 6 Frontend UI frameworks, Deep dive into Tailwind
- 7 Containerization, Docker
- 8 Next.js
- 9 Custom hooks
- 10 In house auth using next auth

Basic Devops

- 1 Docker end to end
- 2 Deploying to AWS servers
- 3 Newer clouds like fly/Remix
- 4 Nginx and reverse proxies

Projects

- 1 GSoC Project setting up and issue solving

2 Building Paytm/Wallet End to End

Complete 1-100 Syllabus

Advanced Backend, System Design

- 1 Advanced backend communication
- 2 Message queues and PubSubs
- 3 Proxies, Load balancers
- 4 Redis Deep dive
- 5 Kafka Deep dive
- 6 Common Design Patterns in JS
- 7 Advanced DB concepts (Indexing, normalization)
- 8 Rate limiting
- 9 Captchas and DDoS protection
- 10 Sharding, Replication, Resiliency
- 11 Horizontal and vertical scaling
- 12 Polling and websockets
- 13 Grpc
- 14 Capacity Estimation
- 15 Load Balancers
- 16 CAP Theorem
- 17 Testing Node.js Apps in 2023
- 18 Real time communication, basics of WebRTC

Advanced Devops

- 1 Container Orchestration, Docker Swarm
- 2 Kubernetes
- 3 CI/CD
- 4 Monitoring systems basics to advance
- 5 Prometheus, Grafana
- 6 Newrelic as a paid service
- 7 Serverless Deep dive
- 8 AWS Constructs (EC2, S3, CDNs, LB, EKS)

Projects

- 1 Zerodha end to end
- 2 Zapier end to end
- 3 Real world open source projects