

0 to 1 Cohort (December to March)

Foundation

Foundation Javascript, async nature of JS
Node.js and its runtime
Databases (NoSQL/SQL)
Mongo and Postgres deep dive
Typescript beginner to advance

Backend

Backend communication protocols
Express basic to advance
ORMs
Middlewares, routes, status codes, global catches
Zod
MonoRepos, turborepo
Serverless Backends
OpenAPI Spec
Autogenerated clients
Authentication using external libraries
Scaling Node.js, performance benchmarks
Deploying npm packages

Frontend

Reconcilers and Frontend frameworks
React beginner to advance
Internals of state, Context API
State management using recoil
CSS you need to know of, Flexbox, basic styling
Frontend UI frameworks, Deep dive into Tailwind
Containerization, Docker
Next.js
Custom hooks
In house auth using next auth

Basic Devops

Docker end to end
Deploying to AWS servers
Newer clouds like fly/Remix
Nginx and reverse proxies

Projects

GSoC Project setting up and issue solving
Building Paytm/Wallet End to End

1 to 100 Cohort (March to May)

Advanced Backend, System Design

Advanced backend communication
Message queues and PubSubs
Proxies, Load balancers
Redis Deep dive
Kafka Deep dive
Common Design Patterns in JS
Advanced DB concepts (Indexing, normalization)
Rate limiting
Captchas and DDoS protection
Sharding, Replication, Resiliency
Horizontal and vertical scaling
Polling and websockets
Grpc
Capacity Estimation
Load Balancers
CAP Theorem
Testing Node.js Apps in 2023
Real time communication, basics of WebRTC

Advanced Devops

Docker Deep dive
Container orchestration, Docker Swarm
Kubernetes
CI/CD
Monitoring systems basics to advance
Prometheus, Grafana
Newrelic as a paid service
Serverless Deep dive
AWS Constructs (EC2, S3, CDNs, LB, EKS)

Projects

Zerodha end to end
Zapier end to end
Real world open source projects