CS & TECH CAREER PLAYBOOK

Computer Science Roadmaps & Business Strategy

Bridging technical mastery with strategic business value to build high-impact engineering careers.

</> Core CS Tracks | Business Development

Software Engineering & Development

Phase 1

Foundations

Python, C++, Java mastery.

DSA & Object-Oriented Programming.



Phase 2

Tooling

Version control with Git & GitHub.

Linux Command Line Interface (CLI).



Phase 3

Core Systems

SQL & NoSQL databases.

Operating Systems fundamentals.



Phase 4

Delivery

Software testing & CI/CD pipelines.

Docker containerization basics.

Recommended Resources:

YouTube: freeCodeCamp, NeetCode, Fireship | **Docs & Sites:** roadmap.sh, GeeksforGeeks, LeetCode

Software Architecture Roadmap

1 **Design Principles**
SOLID principles, design patterns, and Object-Oriented Design rules.

2 **Architecture Patterns**
Monolith vs. Microservices, Event-Driven, and Serverless computing.

3 **Scalability**
Redis caching strategies, Load Balancers, and Kafka message queues.

4 **Trade-offs & Constraints**
CAP Theorem analysis, Rate Limiting, and High Availability designs.

YouTube: ByteByteGo, Gaurav Sen, Hussein Nasser | **Docs & Sites:** System Design Primer, Martin Fowler, AWS

Web Development Roadmap

Phase 1: Fundamentals
HTML5, CSS3 (Flexbox/Grid), and JavaScript ES6+.

Phase 2: Frontend Engineering
Tailwind CSS, React/Vue/Angular SPAs, and Next.js SSR.

Phase 3: Backend & APIs
Node.js/Python/Java, REST & GraphQL, and JWT/OAuth security.

Phase 4: Deployment
Application hosting & scaling on Vercel or AWS.



YouTube: Traversy Media, Web Dev Simplified, The Net Ninja | **Docs:** MDN Web Docs, React Docs, roadmap.sh

App Development Roadmap



1. Track Selection

Cross-Platform (Flutter, React Native) vs. Native (Kotlin, Swift).

2. Core UI & Logic

Responsive layouts, state management (Provider, Redux, BLoC).

3. Data & APIs

REST/GraphQL, offline storage (SQLite, Room), and Firebase.

4. Publishing & ASO

Play Store & App Store releases, Push notifications, and ASO.

YouTube: Philipp Lackner, iOS Academy, Flutter Mapp | **Docs:** Android Developers, Apple Developer, Flutter Docs

Networking Roadmap

Step 01

Fundamentals

7-Layer OSI Model, TCP/IP stack, and protocols (HTTP/S, DNS, DHCP).

Step 02

Routing & Switching

IP addressing, subnetting (VLSM), VLANs, and routing (OSPF, BGP).

Step 03

Hardware & Security

Enterprise routers, switches, Firewalls, and VPN implementations.

Step 04

Cloud Networking

Software-Defined Networking (SDN), AWS VPC, and Azure VNet.

YouTube: NetworkChuck, David Bombal, Professor Messer | **Docs:** Cisco NetAcad, Cloudflare Learning, RFC Editor

PART 2

Business Development Guidelines

Transitioning from student developers to industry-ready professionals and tech entrepreneurs.

BUSINESS GUIDELINE 01

Align Code with Customer Value

The Core Principle

Technology is a tool to solve human and business problems, not just an end in itself.

Key Questions Before Coding

- What explicit pain point does this software solve?
- Who is the exact target user or enterprise client?
- How does this generate revenue or save operating costs?

Master Technical Communication



Translate Tech to Non-Tech

Stakeholders and investors care about business outcomes, deployment timelines, and scalability—not raw syntax.

Emphasize Business Impact

Explain architectural choices (e.g., Microservices vs. Monolith) in plain terms: market speed, cost efficiency, and risk reduction.

Product Lifecycles & Personal Brand



Monetization & Lifecycles

Familiarize with models: SaaS, Open Source with enterprise tiers, B2B vs. B2C. Align agile engineering with market launches.

Sustainable Delivery



Brand & Network

Showcase projects publicly on GitHub. Write technical blogs, contribute to open-source, and engage with industry peers.

Network is Net Worth

Ready to Build & Scale?

Combine engineering excellence with business acumen to leave a lasting mark in technology.

Thank You & Questions

Image Sources



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