THE PLAN - FOR STUDENTS WHO ARE IN FIRST YEAR

Day 0 to Day 10: Programming 101 - https://www.youtube.com/watch?v=zOjov-2OZ0E

Day 11 to Day 20: Programming 101 - https://www.youtube.com/playlist?list=PLGC-hHIh7l5s6Spz86OT1u0A7kvQH-2B0

Day 21 to Day 30: Computer Science Crash Course - https://www.youtube.com/playlist?list=PLH2l6uzC4UEW0s7-KewFLBC1D0l6XRfye

Day 31 to Day 60: CompTIA ITF+ (check the syllabus and study that only, no need to attend test and get certified)

Day 61 to Day 90: CompTIA A+ (check the syllabus and study that only, no need to attend test and get certified)

Day 91 to Day 120: CompTIA Network+ (check the syllabus and study that only, no need to attend test and get certified)

Day 121 to Day 150: CompTIA Security+ (check the syllabus and study that only, no need to attend test and get certified)

Look at Professor Messer videos for CompTIA vidoes. If not available see the syllabus buy searching course name + syllabus. For eg. “CompTIA ITF syllabus” and find a youtube video that teaches it or study topic wise on your own. The only thing which is important is to learn everything in that syllabus, it is not important how you do it.

Also an important note. DO NOT IGNORE ENGINEERING-MATHS. Make sure you achieve ‘O’-grade in every exam or atleast an ‘A+’ in Maths.
---------- 1st semester ended----------

Day 151 to Day 200: Choose a language (Java/C++/Python) and learn basics.

- Tips to help you choose

  ➔ If you are interested in Game Dev – C++
  ➔ If you are interested in ML/AI – Python
  ➔ If you are interested in Software Development/Web Development — Java
  ➔ If you have no idea of what you want to do, or you only know C, choose any of C++ or Java, you will not be disappointed. Also do some research on your own. (Java Preferably).

- After choosing a language, in the next 10 days, you will learn basic things like(Syntax only): - https://www.codingninjas.com/codestudio/guided-paths (Complete both Basics and OOPs in selected language by the end of 50 days.)

  ➔ User Input/Output.
  ➔ Data Types
  ➔ If Else statement

➔ Switch Statement
➔ Arrays , Strings
➔ For Loop
➔ While Loop
➔ Function

- In the next 20 days, brush up your logical thinking skills:

  ➔ Do problems on HackerRank.
  ➔ Do top 15-20 basic problems in each section from “Top 100 codes by PrepInsta”.
  ➔ Practice Pattern printing to quickly improve logic building skills and Also learn Git and GitHub now for future use - https://www.youtube.com/watch?v=RGOj5yH7evk or https://www.youtube.com/watch?v=8JJ101D3knE

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- Must know programs before moving to next step:

  ➔ Count Digits
  ➔ Reverse a Number
  ➔ Check Palindrome
  ➔ LCM GCD
  ➔ Armstrong Number
  ➔ Print all Divisors
  ➔ Check for Prime
  ➔ Understand recursion by print something N times
  ➔ Print name N times using recursion
  ➔ Print 1 to N using recursion
  ➔ Print N to 1 using recursion
  ➔ Sum of first N numbers
  ➔ Factorial of N numbers
  ➔ Reverse an array
  ➔ Check if a string is palindrome or not
  ➔ Fibonacci Number
  ➔ Counting frequencies of array elements
  ➔ Find the highest/lowest frequency element

Day 201 to Day 350: Learn Data Structures and Algorithms – https://devrahul.in/2022/11/roadmap-of-dsa-in-one-twenty-days/ and https://www.codingninjas.com/codestudio/guided-paths (Intermediate level) for reference.

- Topics to learn. If you are confused about how to learn just type topic name + DSA tutorial on Google.

  ➔ Space and Time Complexity
  ➔ Recursion and Back Tracking
  ➔ Arrays
  ➔ Linked Lists
  ➔ Stacks and Queues
  ➔ Important: Start giving contests on various websites and using Leetcode, Codechef etc.
  ➔ Searching Techniques
  ➔ Sorting Techniques – (Bubble, Insertion, Selection, Merge, Quick)

- ➔ Hashmaps
- ➔ Heaps
- ➔ Trees
- ➔ Sliding Window
- ➔ Graphs
- ➔ Dynamic Programming
- ➔ OOPs
- ➔ Number Theory
- ➔ Bit Manipulation
- ➔ Tries

---------- 2nd semester ended----------

Start using platforms like Codechef, Leetcode, HackerRank, HackerEarth, GitHub on a daily basis if you haven't started yet. Do competitions, attend Hackathons, meet people, build network. Build Projects. Have something to showcase your work. Build good GitHub, LinkedIn profile. Learn about Remote companies. Learn about Open Source contributions. Learn about Competitive Programming. What are these? How to do it? Learn about Development do not jump into new tech like AI/ML etc. Go slow. You have time. Trust me. See what interests you and study further. There are many development fields. Learn about them. Learn your interest. In 2nd year, explore. I explored and found that I like Web Dev. Get a little knowledge of everything. Spend your 3rd semester on development. Build real life projects and add to your resume. Don't think you know everything. It has just started.

Also, Continue learning more things like DBMS, OS, Computer Architecture, System Design.

See, there are 4 types of companies

Level 1: Mass recruiters like TCS, CTS, Wipro, Infosys or any other companies who bulk hire. They do not require much skills, little bit of aptitude and communication and very basic computer science is enough for these companies But, they pay very less. Any Mass recruiting company pays between 2LPA – 7 or 8LPA. Work Life Balance worst. Learning worst.

Level 2: FAANGM (Facebook, Amazon, Apple, Netflix, Google, Microsoft)

These companies pay decent. 14-18LPA per annum base salary + stocks etc. Work Life balance is OK. Not great learning. Stuck on one technology. But good reputation and you can become popular in your local.

Level 3: Indian Startups

Requires Networking, People skills and lots of CS knowledge and amazing products. Ready to pay similar to FAANGM companies or even more than that. Upto 25-30LPA per annum base salary. Work life balance good. Lots of learning.

Level 4: Remote Startups (My Fav)

Requires same things as Indian Startups and must have knowledge of how to present yourself. Some companies easily pay 80LPA – 1.2Cr per annum base pay after 2-3 years of experience. Lots of skills required. Open Source Contribution is amazing add-on. Amazing Resume.

These things are here just to let you know that there are many things you do not know. Learn them. Be actively present on coding communities and groups.

In the end, 3rd semester goes to exploring various technology and learning any-one development technology. Alongside continue coding competitions and Leetcode, Codechef etc.

---------- 3rd semester ended----------
Now in 4th semester, start contributing to Open Source Projects. Research about it yourselves and do lots of contributions and do not stop it ever. Do this forever. Even if you get a Job. Continue doing this side-by-side.

Learn about freelancing. Create a new account on Upwork and apply on freelance projects. Build some good projects to showcase. 4th semester goes to Freelancing and Open-Source.

---------- 4th semester ended----------

Now that you know what Open Source is and you have also contributed some of your expertise there. Now it is time to contribute to big open source projects. Every year, Big Tech companies run a collaboration of tech students and working professional to boost Open source contributions.

It is very good to participate in these internships to contribute to open source on a big level.

Some of the Paid Good Reputation Internships are:

1. Microsoft Open Source Program
2. LFX Mentorship
3. MLH Fellowship
4. Google Summer of Code
5. Outreachy
6. Hacktober Fest and many more

Participate in these internships and do it. Go to Google and create a good resume for this companies by researching. Prepare for interview.

Remember Open-Source is not about competing with other programmers. It is about collaborating. Learning and Sharing. Very good for your future. In the meantime, continue contributing to Open-Source on GitHub and competing on online coding platform and achieve good rankings.

In case you did not get any internship from these open source programs, continue good work by contributing to GitHub and build resume with real life projects.

---------- 5th semester ended----------
Continue Learning, If you have done everything correctly, offers must be coming at your from all over the place if not identify where things went wrong and solve them, fix them. You must know there are many internships out there, compare which one you like do internships and apply for Jobs from now itself.
For the next steps, it is on you to find out. I have shared all the things I knew. You can change and manage it with your speed of learning. Days counting are just for reference, you can be a bit slower or faster, Important is you should continue learning and understand everything on the way.
If you have any doubts contact me at loknathkumarmishra7@outlook.com. Happy to Help!

- Your friendly senior