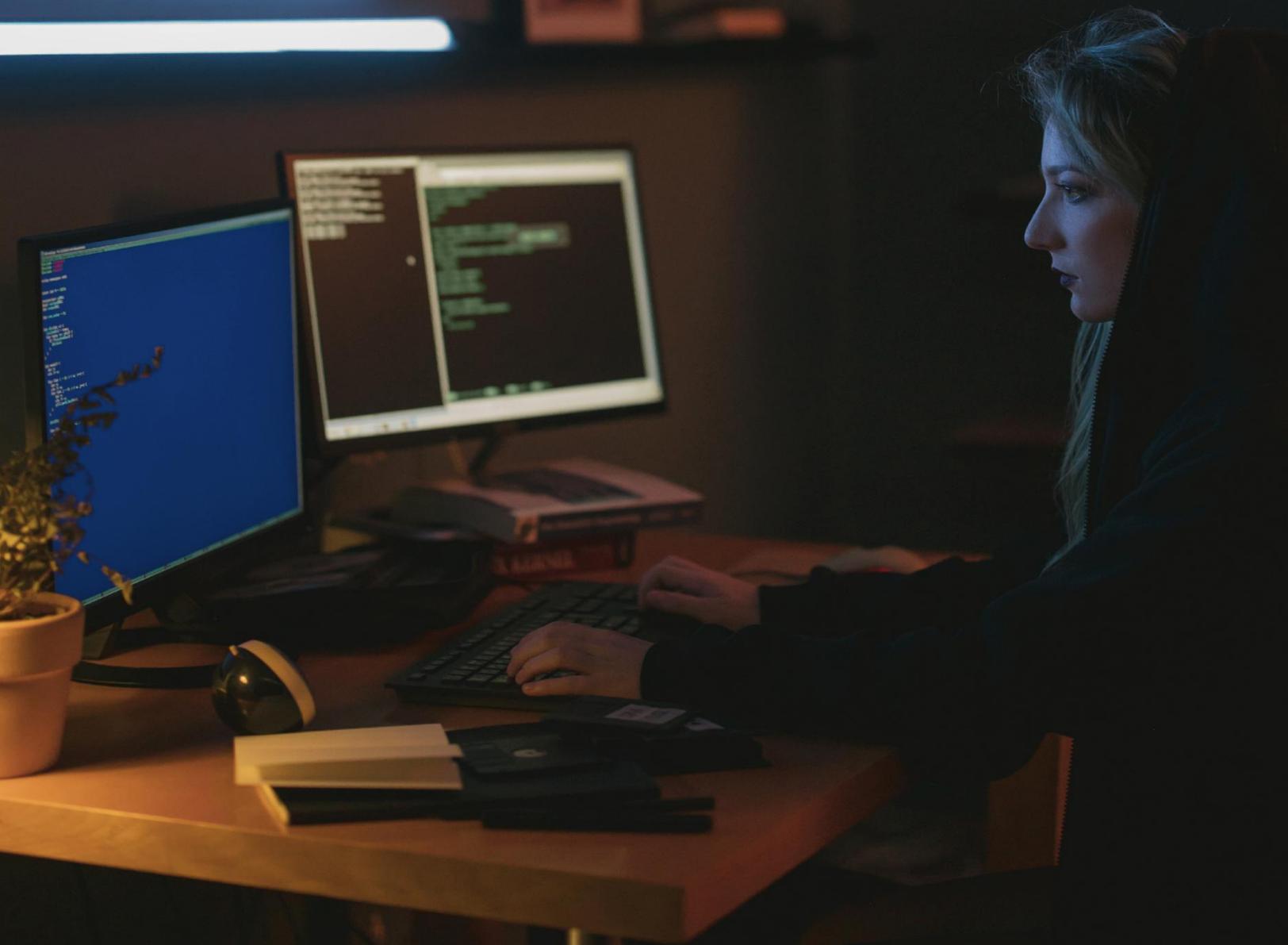# CODESLAYER

A COMPETITIVE PROGRAMMING COURSE

Course Handout

Name of the course:
CodeSlayer-A Competitive Programming Course

About the course:
In the recent trend of the recruitment process, programming is one of the major criteria to crack the exams. TechBairn presents to you a complete placement package course for the students, which will suffice the preparation for the product-based companies like Google, Amazon, Microsoft, Goldman Sachs and many more. If you are hoping to vanquish your coding skills and learn a proficient, optimized way of coding, this course is made for you. You will not only design algorithms and estimate their complexity, but also have a deeper understanding of algorithms by implementing them in C++/Python Programming Language. Top coders of India will be guiding the students throughout this program with expert tips and tricks to crack these exams. They will be introduced to the vast world of competitive programming with hands-on experience and about the various competitive programming platforms.

Our Goal:
After completion of this course, you will be able to solve the problem statements asked in recruitment process of big tech companies such as Google, Amazon, Facebook, Directi and many more. Apart from this, the course will enable you to solve complex coding problems with which you can participate in coding competitions like ACM-ICPC, Google Code Jam etc.

Prerequisite:

No pre-requisites for this course, it will start from the scratch with the basics of algorithms and C++, making the concepts simple so that anyone with minimum or no prior knowledge can understand, learn and master them easily. This course covers algorithmic techniques for solving problems arising in the field of computer science.

Duration Of the course:
2 months

Syllabus of the course:

1. Language Fundamentals (C++)
i.   Introduction to c++ control flow
ii.   Functions
iii. Array & strings

iv.   Structures

v.   Objects & classes

vi.   Pointers

vii. Inheritance

2.   Time and Space Complexity

3.   Some Binary Stuffs

4.   Data Structures – 1
i.   Linked List
ii.   Stacks
iii. Queues
iv.   Graphs
v.   Trees
vi.   Heaps – sets, priority queues
vii. Vectors

5.   Competitive Maths :
i.   Prime Numbers
ii.   Permutations and Combination
iii. GCD
iv.   Number Theory
v.   Probability
vi.   Modular Arithmetic
vii. LCM
viii. Game Theory
ix.   Binary Exponentiation
x.   Matrix Exponentiation

6. Algorithms :
i.   Searching
ii.   Sorting
iii. Hashing
iv.   Greedy
v.   DFS
vi.   BFS
vii. Recursion
viii. Divide and Conquer
ix.   Dynamic Programming
x.   String matching

Highlights:

-Online Live sessions by industry experienced experts.

-No pre-recorded videos.

-Interactive sessions and doubt clearing classes.

-Solving various company specific coding questions.

-Certificate after Completion to bolster your resume.

-Placement oriented training like solving various competitive coding questions and Pseudo codes.

-Weekly online coding challenges among the students and top performers will be rewarded.

-Internship Opportunity: Top performers after successful completion of the programme will get a chance of working with us as an intern (Teaching Assistant)

Course Outcome:

After completion of the course you can easily solve the coding questions from different coding platforms like Codeforces, CodeChef, HackerEarth, HackerRank ,Topcoder and many more which will eventually prepare you for the Placements as well as Competitive exams.

Internship Oppurtunities:

Top performers after successful completion of programme will get a chance of working with us as intern(Teaching Assistant)

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