Programming Pathshala

About Programming Pathshala

We are an online school of Software Engineering, enabling people to learn to code, build and deploy softwares. We envision to build access to Tech Education with definite outcomes in terms of employment or working skills.

We work with Students, Working Professionals of Software Engineering and Universities in India. We have taught over 20,000 participants through our short-term and long term programs spanning from a week long intensive programs to an year long programs. Our learners graduate from our programs and now work at Top Software Engineering roles across firms in India, Europe and United States.

We are led by Anoop Garg and Vivekanand Vivek Who have graduated from prestigious Indian Institute of Technology (IIT) in India. Our teachers have previously worked at Companies like Amazon, Tower Research Capital, Samsung etc. We are a team driven for a larger purpose to build skills of future.

About ABES Engineering College

ABES Engineering College, established in 2000, is a distinguished institution renowned for its academic excellence and industry partnerships. With NAAC A accreditation and a strong focus on practical learning, ABESEC offers a dynamic learning environment for participants pursuing undergraduate and postgraduate degrees in engineering, management, and computer applications.

The college's commitment to student success is evident in its impressive placement record with top recruiters like Amazon, Adobe, and Wipro. ABESEC's state-of-the-art infrastructure and dedicated faculty create an ideal platform for participants to thrive.

Through this partnership, Programming Pathshala aims to empower ABES Engineering faculty a comprehensive Managed Faculty Development Program (FDP). Our goal is to equip your faculty with the latest industry best practices and tools to empower the next generation of software engineers.

CONTACT

ANOOP GARG| +91-9871723495 | NEW DELHI, INDIA| INFO@PROGRAMINGPATHSHALA.COM

Programming Pathshala

Connect With University

Programming Pathshala engages with numerous universities to train, empower and assess participants. Our Strong ties are in place with multiple universities and colleges, ranging from IIT Kanpur, IIT BHU to bigger universities like Lovely Professional University, Chitkara University to best regional colleges like KIET, GL Bajaj, Manipal University Jaipur.

Our recent successful Faculty Development Program with KIET Institute is a testament to our ability to deliver impactful training programs that equip faculty members with the latest industry best practices.

Success Stories

Our students have been able to gain major success through the programs. These participants are early career professionals and recent graduates of Engineering Colleges.

16 LPA+	300%	19000+	4.9/5
Average CTC	Average Increment	Students Taught	Students Reviews

CONTACT

ANOOP GARG| +91-9871723495 | NEW DELHI, INDIA| INFO@PROGRAMINGPATHSHALA.COM

Curriculum of Programs

Our Programs are built on the following 4 principles:

- **In-Depth Curriculum**

Our Programs are designed to help our learners understand the 'Why' of things. We build from the basics of the concepts and dive deep into reasoning rather than just elaborating on 'how' of things or merely procedures.

- **Industry Relevance**

Our curriculums are rigorously vetted by professionals from Industry and undergo continuous improvements as and when industrial trends change.

- **Learning by Hands on Practice**

Learners are able to retain because they do things by themselves. Our lectures are having significant amount of hands on practice of coding, with extensive practice on Projects.

- **Continuous Assessments**

Our assignments are further strengthened by continuous assessments, helping participants to identify areas of weakness and further improve on them. Apart from this, Universities and other stakeholders get insights about progress of learning and its goals.

- **Intellectual Stimulation**

Our Programs are designed to help people think and build- rather than memorising of concepts. Interactions are designed in a way, where participants are able to build their thought process around concepts and navigate through it.

Programming Pathshala

Programs

1. Problem Solving Trends in Software Engineering for Academicians

Most Tech Companies including Fintech or E-commerce use basic DSA fundamentals in their interviews. Students today, need not to only learn the concepts around Data Structures and Analysis of Algorithms - but do a lot of hands on practice on solving complex problems, which are usually asked in Interviews.

With this program, the teaching faculty will be able to gain a perspective on how to help students learn problem solving the right way, from the perspective and demand of industry. This will take them a notch higher than the usual academic syllabus, will help them manoeuvre through the changing industry requirements.

2. Project Based Teaching Pedagogy of Full Stack Development

Most of Students build their first Projects in college. A Project based teaching pedagogy will help faculty members to build the concepts of students in a way that they do it right.

In this Program, members of the faculty will be building full stack web applications, which will be actual Minimum viable products or solutions for college problems- like an information website about college related things for a fresher or a grievance reporting system.

Faculty members will also be able to build a perspective around how can students grow from easy to complex projects.

Course Curriculum

1. Problem Solving Trends in Software Engineering for Academicians

4 Hrs Session	Major Topics for Discussion in the Session
Day 0	Orientation and Introduction, Setting the context
Day 1	General Optimisation Techniques like Pre-computation, reverse lookups etc, Searching Algorithms, Monotonic Space, Binary search on answer space, Recurrence relations, Time and Space Complexity Analysis.
Day 2	Recursion, Call stacks, Recognising 'Elements of Choice' and 'state' in a problem, Backtracking and Pruning
Day 3	Sorting and Comparators, N log N algorithms like Merge Sort, Inversion Counts
Day 4	Bit manipulation, bit level hacks and tricks in problems. Two Pointer technique, Sliding Window.
Day 5	Hashing & Hashmaps, ordered vs unordered maps, internal working, collision, probing, applications in Hard problems
Day 6	Stacks and Queues, Monotonic stacks, Next greater/smaller element with precomputation, Doubly ended Queue.
Day 7	Linked Lists, Operations like Merge/Clone/Flatten etc, Doubly Linked lists.
Day 8	Binary Trees, Traversals, Tree reconstruction, lowest common ancestors, serialization and deserialization, Binary Search Trees
Day 9	Greedy Algorithms, Intro to Dynamic Programming and classical problems, their tricky variations, DP on Strings, Values etc.
Day 10	More on Dynamic Programming, Intro to Graphs, BFS/DFS, Connected components, Shortest path problems

2. Project Based Teaching Pedagogy of Full Stack Development

Session - 4hrs	Topics	Minor Projects
S1	HTML - Tags, Semantic, Elements, anchor, iFrame, Video	Design a responsive and static web page for college fest.
S2	HTML - img, list, table, form, entities	
S3	CSS - Box Model, Selector, Combinators, Specificity, Units	
S4	CSS - Pseudo Classes, Pseudo Elements, Flex-box	
S5	CSS - Grid, Display, Position, Media Query, transition	
S6	JavaScript - Variables, Data types, Scope, Type coercion, Function, Conditonals, Object, Array, Window, DOM, Selectors	Design a dynamic JS powered web page that fetches data from a server and renders at the client side. For e.g. a web page that searches and displays deparmental data across a college
S7	Javascript - DOM Manipulation, Events, Form handling, First Class Citizen, Higher Order Function, Callbacks	
S8	Javascript - Asynchronous nature of javascript, setTimeout, Call Stack, Event Loop, Use Promise of Fetch API: then-catch	
S9	Javascript - Imp Array methods, Loops, Mutability, ES6 specific, Promise: Async-Await	
S10	Backend - Router, IP, Mac, Server, Client, Http/s, internet, isp, dns, bandwidth, throughput, latency, response time, Client Side Rendering, Server Side Rendering	Server Side Rendered Website to show Courses offered by the Institute and their information
S11	NodeJS - Installation, import-export, modules, npm, destructuring, stream, buffer, fs, http, nodemon, port, log file, url	
S12	NodeJS - Server Side Rendering (SSR) using fs and html template	
S13	NodeJS - Code refactoring, Basic Routing with if-else	
S14	ExpressJS - Basics, Routes, REST APIs	Backend of Institute's Library Management System
S15	ExpressJS - Middleware, Router, Morgan Middleware, Middleware Chaining	
S16	MongoDB - ATLAS, Compass, installation, Querying Mongoose - installation, connection, model, schema, MVC	
S17	ExpressJS + MongoDB : CRUD Ops	
S18	ExpressJS + MongoDB : Advance Querying, searching, sorting and pagination)	

S19	ReactJS : without JSX, Security, with CRE & CDN, JSX, Bundler (Parcel), React Element & Component	A react powered Frontend for Institute's Library Management System
S20	ReactJS : Component composition, styling, Handson, Props, Virtual DOM	
S21	ReactJS : Routing, Navigation and Query	
S22	ReactJS : State management using context API, secured routes	
S23	ReactJS + ExpressJS : Authentication (Bcrypt, JsonWebToken - JWT, Cross Origin Resource Sharing - CORS, Cookies, Local Storage)	
S24	ReactJS + ExpressJS : OTP Service using NodeMailer, Data handling and Security	
S25	Deployment: Seperately deploying the frontend and backend on diffierent hosts. Manging access credentials in the environment variable to secure them.	Deployment on Cloud

Outcome Mapping for the Programs

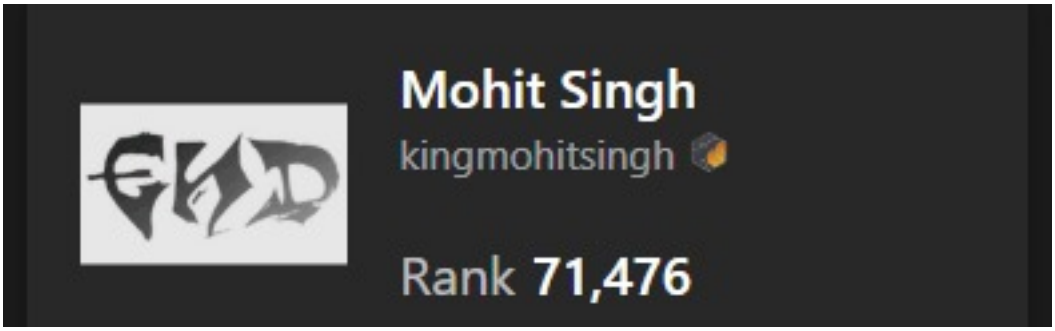
Problem Solving Trends in Software Engineering for Academicians

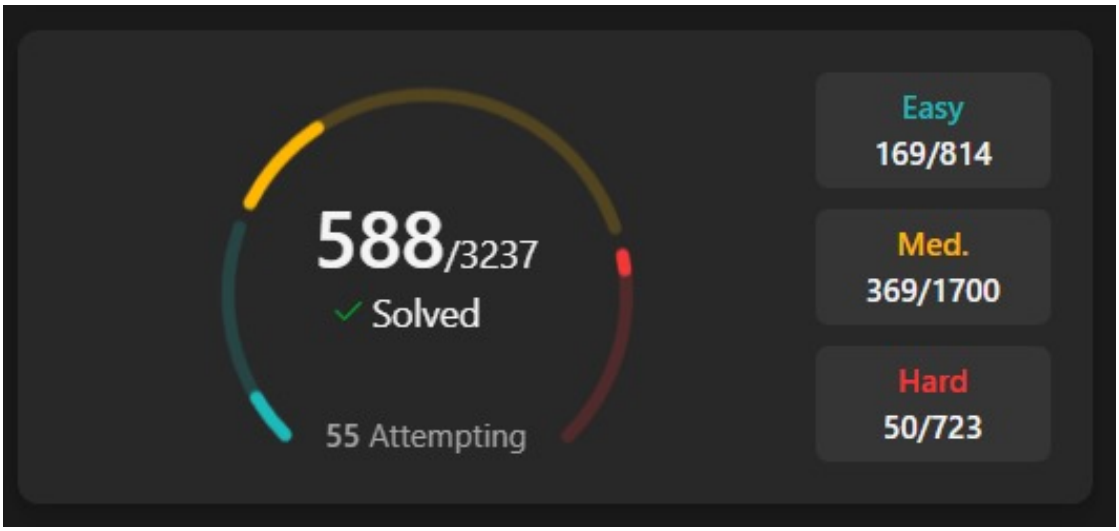
Problem Solving Skills of the Academicians can be assessed by their performance on Leetcode and CodeChef like Platforms.

For Leetcode, there are three metrics:

Rank: Rank is dependent on the number of problems solved on the platform of leetcode.

This is an important metric to figure out the practice level of the participants. We can have a target of solving at least **150 Problems** on the Leetcode platform in a month time, hence significantly improving the rank of the participants of the program.





Contest Rating and Global Ranking

This rating and ranking appears only to those users, who have been giving weekend contests on Leetcode. Contests comprise of problems from all the topics and it will not be possible for the workshop participants to appear for contests during the program.

In the Program topics will be taught in a sequential manner.

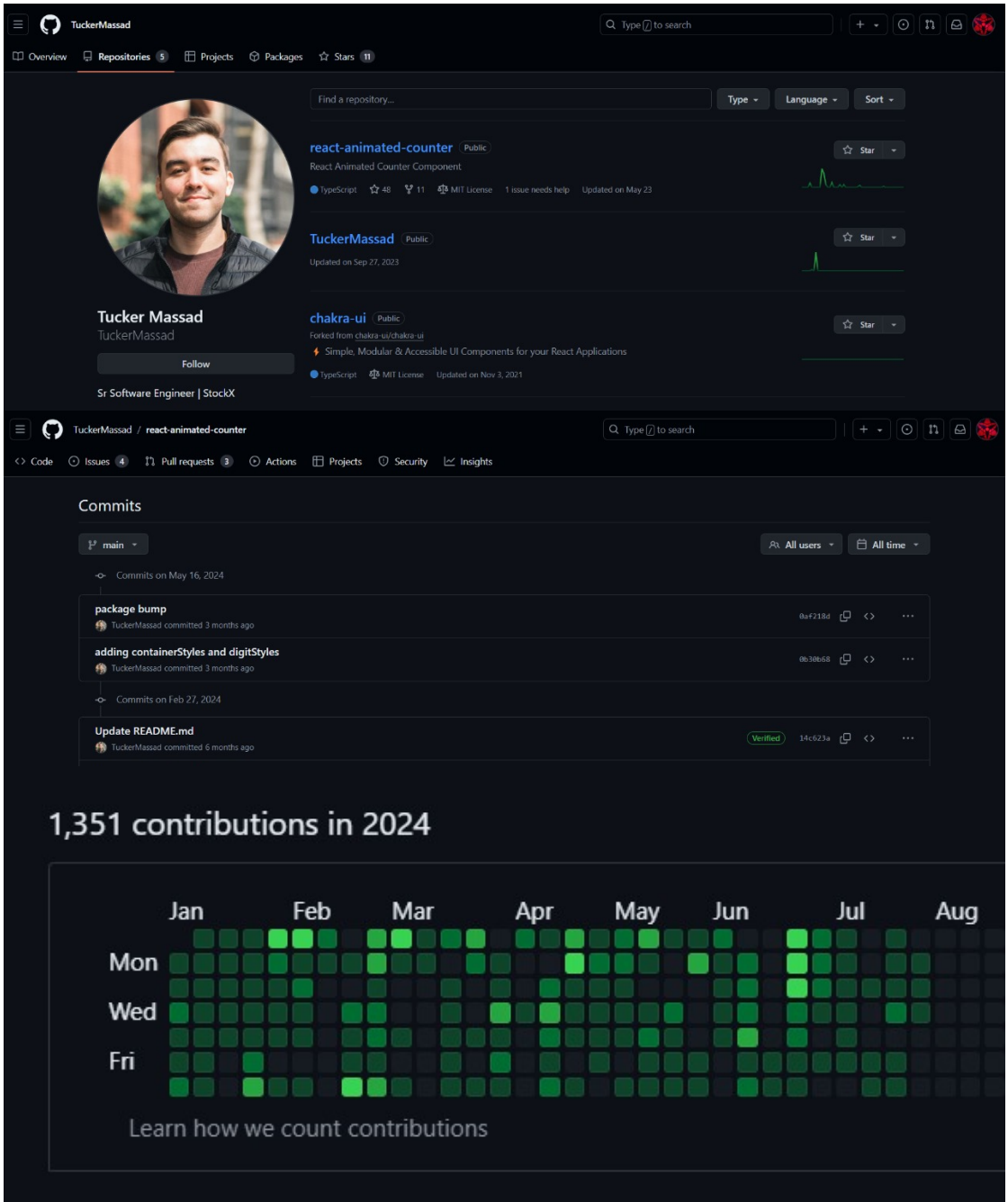
Codechef doesn't have any rating for practice but only gives a star rating for contests.

The best way for now, to assess practice of the Academicians will be Problems solved on Leetcode and their Rank. In the long term, lets say in 3-6 months time, we can set goals for a Leetcode Contest rating.

Outcome For Teaching Pedagogy of Full Stack Development

For Full Stack Development Programs, Faculty Members will be able to build End to end Projects and deploy them. Also, they will be able to deliver Full Stack Development Trainings in a much more structured manner.

Participants will have goals of making at least 20 commits and 3 repositories on Github.



Pricing

Pricing Per Day Per Trainer: INR 18000/-

Where each day can have 4 hours of teaching usually.

Connect with Us

For further questions and discussions,

Please reach out to,

Anoop Garg

Co-founder| Programming Pathshala

Email: anoop@programmingpathshala.com

Phone: +91 98717 23495

406B, Iconic Corenthum, Noida Electronic City Metro Station.