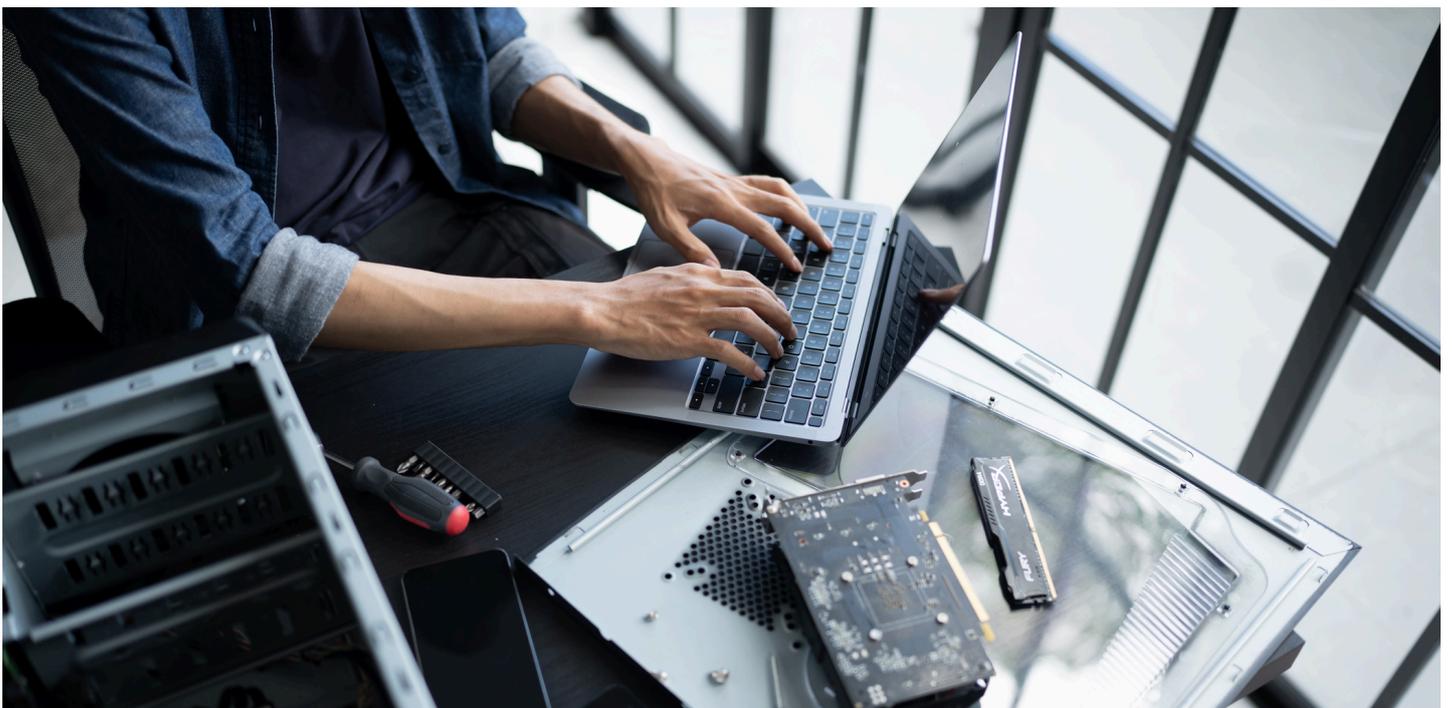MERITSHOT

Program Delivery Plan

Full Stack Development with GEN AI

Specialization A Complete time line guide for the 9 Months PGP in Full stack development with GEN AI offered at Meritshot

Course Outline

Full Stack Development with GEN AI

Data & Developer Foundations *(4 Weeks)*	**Programming Foundations** *(4 Weeks)*
Data Structures & Algorithms *(4 Weeks)*	**Frontend Development** *(4 Weeks)*
Backend Development *(4 Weeks)*	**Full Stack Application Development** *(4 Weeks)*
Artificial Intelligence Foundations *(4 Weeks)*	**Applied AI for Developers** *(4 Weeks)*

System Design, Big Data & Capstone Project
(4 Weeks)

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Data & Developer Foundations

Week	Schedule	Topics
Week 1	Weekends	Excel Interface & Navigation, Essential Excel Functions
	Weekdays	Data Cleaning Techniques, Data Organization & Analysis
Week 2	Weekends	Advanced Excel Techniques
	Weekdays	Dashboards & Business Reporting Models
Week 3	Weekends	Tableau Dashboards
	Weekdays	Power BI Modeling & Business Reports
Week 4	Weekends	Command Line & Linux Basics
	Weekdays	Development Setup & Package Managers

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Programming Foundations

Week 5	Weekends	Python Fundamentals
	Weekdays	Control Flow & Functions
Week 6	Weekends	Logical Thinking & Coding Patterns
	Weekdays	Debugging Techniques
Week 7	Weekends	Git & Repository Management
	Weekdays	Branching & Collaboration Workflows
Week 8	Weekends	SDLC Stages & Development Process
	Weekdays	Agile, Scrum & Testing Basics

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Data Structures & Algorithms

Week 9	Weekends	Complexity Concepts
	Weekdays	Big-O Analysis
Week 10	Weekends	Linear Data Structures
	Weekdays	Hash Maps & Data Management
Week 11	Weekends	Recursion & Tree Structures
	Weekdays	Graphs & Traversal Techniques
Week 12	Weekends	Coding Challenges Practice
	Weekdays	Interview-Style Problem Solving

Frontend Development

Week		
Week 13	Weekends	HTML & Webpage Structure
	Weekdays	CSS Styling & Responsive Design
Week 14	Weekends	JavaScript Core Concepts
	Weekdays	Events & Asynchronous Programming
Week 15	Weekends	React Fundamentals & Components
	Weekdays	Props & State Management
Week 16	Weekends	Form Validation & Dynamic UI
	Weekdays	Frontend Performance Basics

Backend Development

Week 17	Weekends	Server Architecture & Backend Basics
	Weekdays	Routing & Middleware
Week 18	Weekends	API Design Principles
	Weekdays	Request–Response Lifecycle
Week 19	Weekends	Login Systems & Authentication
	Weekdays	Security & Encryption Basics
Week 20	Weekends	Database Fundamentals & Schema Design
	Weekdays	CRUD Operations

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Full Stack Application Development

Week 21	Weekends	API Integration with Frontend
	Weekdays	Data Handling & Communication
Week 22	Weekends	Database Query Techniques
	Weekdays	Transactions & Query Optimization
Week 23	Weekends	DevOps Basics: GitHub workflows
	Weekdays	Docker fundamentals, CI/CD introduction
Week 24	Weekends	Cloud Deployment: deploying applications on AWS / Vercel / Render
	Weekdays	Real World Full Stack Project

Artificial Intelligence Foundations

Week 25	Weekends	AI & Machine Learning Basics: ML concepts
	Weekdays	Supervised vs unsupervised learning, real-world AI applications
Week 26	Weekends	NumPy for Numerical Computing
	Weekdays	Pandas for Data Manipulation & Analysis
Week 27	Weekends	Data Preprocessing: dataset cleaning
	Weekdays	Feature engineering, preparing model-ready datasets
Week 28	Weekends	Regression Models
	Weekdays	Classification Fundamentals

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Applied AI for Developers

Week 29	Weekends	OpenAI APIs & AI Tools
	Weekdays	Prompt Engineering & AI Automation
Week 30	Weekends	Embeddings & Semantic Search
	Weekdays	Vector Databases & Similarity Search
Week 31	Weekends	RAG Fundamentals
	Weekdays	Building AI Applications
Week 32	Weekends	Embedding AI in Applications
	Weekdays	AI in Workflows

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System Design, Big Data & Capstone Project

Week 33	Weekends	Scalable Architecture & System Design
	Weekdays	Load Balancing & Caching Strategies
Week 34	Weekends	Big Data Fundamentals: big data ecosystem
	Weekdays	Distributed processing concepts
Week 35	Weekends	Data Engineering Basics: data pipelines
	Weekdays	Storage systems, handling large datasets
Week 36	Weekends	Industry Capstone Project: full stack + AI product development
	Weekdays	Career Preparation: resume building, GitHub portfolio development.

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Industry Capstone Project:

- Build a real-world full-stack + AI based product.
- Deploy the application and present it as part of a professional portfolio project.

Career Preparation:

- Resume building to highlight technical skills and projects.
- GitHub portfolio development to showcase coding work.
- Technical interview preparation including coding and problem-solving practice.

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