

Module 1: Advanced Python

- Basics of Python
- Basic Data Types & Operators
- Modules & Github
- Lists, and Operators
- Container Data Types
- Conditional Statements
- Loops
- Comprehensions & Basic Function
- Functions
- Lambda Functions & Generators
- Exception & File Handling
- Type Hinting & Functions

Use Case HR Function: Employee Attendance System Using Python

Use Case E-Commerce Inventory Management: Interactive Grocery Ordering & Management System Using Python

Module 2: LangChain

- Introduction to GenAI & LangChain
- Prompt Engineering & Structured Output
- Document Loaders & Chunking
- Runnable & Chains
- VectorDB & Retrievers
- RAG
- Tools
- Agent
- Build Agent

Use Case General: AI-Powered Historical Fact-Checker

Use Case Banking: Chatbot

Module 3: LangGraph & MCP

- Introduction to Agentic AI & LangGraph
- Stateful AI Engineering in LangGraph
- Intelligent Memory & Output Design in LLM Workflows
- Tool Calling & API-Enabled Workflows
- LLM Workflows
- Agentic Workflows
- Agent Demo
- MCP
- MCP Server

Use Case Tourism: Travel Agent

Use Case Education: Autonomous School Administration Agent

Module 4: FastAPI, n8n & Deployment

- FastAPI & Streamlit
- HTTP Methods, Streaming & CRUD Operations
- Pydantic
- Docker Compose
- AWS
- n8n

Use Case AI-Powered Document Q&A API