No.of Days	Topics	Pre -Installation of Softwares required
Day -1	**Introduction to Linux and Bash Scripting**	**Ubuntu VM abd BASH tool**
	Linux OS introduction	
	Basic commands (echo, cat, vi, ls, pwd etc.)	
	Conditional Statements (if, else, for etc.)	
	Functions	
	Input/Ouput file handling (>, >>, 2>, | etc.)	
	String processing (grep, sed, awk etc.)	
	Process management (kill, top, ps etc.)	
	Error handling and debugging (trap, set -x, $? etc)	
	Automation and Scheduling (cron jobs)	
	Working with Command-line utilities (df, curl, wget, apt, yum, tar, gzip etc.)	
	Security practices (chmod, chown, umask etc.)	
	Practical use case - automating backups and log rotation	
Day-2	**Python Scripting**	**Ubunutu VM + Python Latest version + IDE Pycharm**
	Python basics	
	Syntax and Fundamentals	
	Control Flow	
	Functions	
	Error Handling	
	Data Structures	
	File and Directory Management	
	Networking and APIs	
	Automation and Task Scheduling	
	Package Management and Virtual Environments	
	Security Best Practices	
	Practical use case - Writing scripts for health checks	
Day-3	**Containerization - Docker**	**Ubuntu VM,MiniKube & Github**
	Docker basics and architecture	
	Installation and Setup (Windows and Linux)	
	Writing docker file : best practices and optimizations	
	Multi stage builds, Tagging, Versioning	
	Docker Containers	
	Docker Volumes and Persistent Storage	
	Docker Networking	
	Docker Compose	
	Docker Registries	
	Security in Docker	
	Practical use case - Deploy sample .net core application, Nodejs application and Java application	
Day-4	**Containerization - Kubernetes**	**Ubuntu VM, MiniKube & Github**
	Introduction to Kubernetes	
	Kubernetes Architecture	
	Setting Up Kubernetes	
	Core Kubernetes Objects	
	Configuration Management	
	Storage in Kubernetes	
	Networking in Kubernetes	
	Scaling and Load Balancing	
	Monitoring and Logging	
	Kubernetes Security	
	Practical use case - Building and Deploying a microservices-based application	
Day-5	**IaC - Terraform and Cloudformation**	**Ubuntu VM AWS Login with unlimited Resource Usage**
	Introduction to Terraform	
	Terraform Basics	
	State Management	
	Variables and Outputs	
	Modules	
	Terraform Workspaces	
	Terraform Cloud and Enterprise	
	Debugging and Troubleshooting	
	Introduction to CloudFormation	
	CloudFormation Template anatomy	
	Cloudformation Resources	
	Cloudformation Stack Operations	
	Nested Stacks and Modularization	
	CloudFormation vs. Terraform - Feature comparision	
	Practical Use Cases - Deploy simple infrastructure (e.g., EC2 instance, S3 bucket) with	

Day-6	**Github - CI/CD pipeline implementation using Yaml template**	**Ubuntu VM + GitHUB tool**
	Introduction to GitHub Actions	
	Basics of YAML for GitHub Actions	
	Workflow Basics	
	Jobs and Steps	
	Runners	
	Artifacts and Caching	
	Secrets and Environment Variables	
	Workflow Templates and Reusability	
	Notifications and Reporting	
	Testing in CI/CD	
	Scheduled Workflows	
	Monitoring and Debugging Workflows	
	Practical Use Cases - Basic CI/CD Pipeline, Infrastructure Automation, Static Site Deployment	
Day-7	**Understanding networking concepts and Security Practices**	**AWS Login with unlimited Resource Usage**
	VPC (Virtual Private Cloud)	
	CIDR and IP Addressing	
	Subnetting	
	Security Groups and Network ACLs	
	Elastic Load Balancers (ELB)	
	AWS Direct Connect and VPN	
	Amazon Route 53	
	Elastic Ips	
	VPC Peering and Transit Gateway	
	Bastion Hosts and Session Manager	
	Networking Monitoring	
	Identity and Access Management (IAM)	
	AWS Secrets Manager	
	AWS WAF and Shield	
	AWS Key Management Service (KMS)	
	Security Best Practices	