



Executive Certification in Cloud & Devops

In collaboration with



Program designed for
IT And Support Engineers



Table Of Content

1	How to make an Impact
2	Program Summary
3	About Course
4	Who is this program for?
5	Why choose Learnbay?
6	Others Vs Learnbay
7	Certification
8	Fee & Batch Details
9	Program Curriculum



Message from CEO, Learnbay

As Learnbay's CEO, I'm excited to welcome you to an amazing journey in learning. Here at Learnbay, we're all about helping you grow in Data Science and more. We think learning can open up endless chances for everyone.

We're not just about the usual school stuff; we're here to support your career in every way possible. What makes Learnbay special is how much we care about your success. I'm inviting you to start a great learning journey with us. Come be a part of Learnbay and see how dedication and passion can really change your path to being the best.

Message from Principal Investigator, E&ICT Academy IIT Guwahati (Dr. Gaurav Trivedi)

As the principal investigator at E&ICT Academy IIT Guwahati, I'm happy to support and work with Learnbay on their Data Science and AI course.

We at E&ICT Academy IIT Guwahati, aim to lead the way in learning and research in Data Science and Artificial Intelligence.



I wish you all good luck with your studies at Learnbay and am excited to see how you all do and grow in the interesting areas of Data Science and Artificial Intelligence

How to make an
impact with



E&ICT Academy
IIT Guwahati



*Designed for **IT professionals, system administrators, and DevOps engineers**, this program equips you with the expertise to excel and lead in the thriving **Cloud and DevOps domain***



Real-World Project Experience

Build end-to-end Cloud and DevOps projects with practical hands-on training.



Certification from E&ICT, IIT Guwahati

Receive a prestigious completion certificate from [E&ICT Academy, IIT Guwahati](#).



Immersive Experience

2-day classroom learning at IIT Guwahati.



Full stack Cloud Mastery

Learn **AWS, GCP, and Azure** with end-to-end real projects.

Program **Summary**



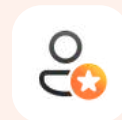
Program Eligibility

Working professionals having **minimum 1** years of exp.



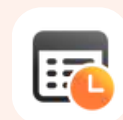
Training Mode

100% Instructor led
Live Online sessions



Program Faculty

Industry Experts and
E&ICT Academy, IIT Guwahati Professors



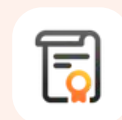
Program Duration

8 Months Program
Weekday and
Weekend Batch



Payment Options

No cost EMI,
Interest free loan



Certification

Certification from **E&ICT Academy, IIT Guwahati**

Add-on
Certificate



Exclusive

Master **GenAI Skills** for **Cloud and Devops**

GenAI Projects

Work on GenAI Projects
designed for cloud eng

Practical Skills

Gain hands-on experience
in cloud and devops

Dedicated Mentors

Dedicated projects
mentors from industry

Industry Knowledge

Develop expertise in
your specific domain.

Important Note: Gain real project experience in Cloud and DevOps under the guidance of industry mentors. Work with a team to implement projects with Generative AI applications.

About Course

This program is designed for **IT professionals**, cloud engineers, and DevOps practitioners to advance their skills through **project-based learning** guided by industry mentors.

It integrates **Generative AI** into Cloud and DevOps, covering cloud architecture, automation, CI/CD, and containerization. By the end, you'll be ready to handle **real-world projects** and excel in high-demand roles.

Our Commitment

Empower tech professionals and developers to excel in **Cloud, DevOps, and Generative AI** by mastering key concepts, practical applications, and tools for effective project management and decision-making.

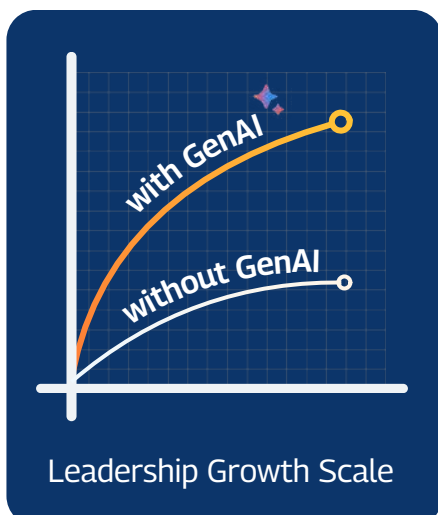
Additionally, our career support services include **interview preparation, resume building, and job placement assistance**, ensuring a smooth transition into high-demand roles in Cloud, DevOps, and Generative AI

 **100%**
Assured Interview

 **350+**
Hiring Partners

 **7+**
Centers Across India

 **40k+**
Professionals Upskilled



82%

of professionals are likely to adopt GenAI by 2025, to


- enhance efficiency,
- automating tasks,
- improving decision-making for better project outcomes.


***By integrating GenAI into our programs**, we ensure that our learners are well-prepared to lead and innovate in their respective fields.



Who is this program for?

A unique program For IT
Professionals & Engineers

 www.learnbay.co

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Entry to Mid Level Professionals with **1+ Years of Experience**

Designed for IT professionals, system administrators, Solution Architects, and Support engineers.



IT Professionals



Project Managers in IT

Important Note: This program is not for freshers, fresh grads, students.

Program Outcome: What's in it for you?



Full stack Cloud Mastery for Professionals

Learn AWS, GCP, and Azure with end-to-end real projects. Mastering these skills helps you to manage, deploy, and scale cloud-based app.



Master GenAI Skills for Cloud and Devops

By integrating GenAI into our programs, we ensure that our learners are **well-prepared to lead** and innovate in their respective fields.



Accelerate Your Career Growth

Leverage advanced GenAI knowledge to drive business success, enhancing career prospects and **salary growth**.

Why choose Learnbay?

For Executive Certification in Cloud & Devops



E&ICT Academy, IIT Guwahati Certification

Stand out with a prestigious certification from **E&ICT Academy, IIT Guwahati**.

Get Certified
from



Project-Based Learning

Gain hands-on experience with **real-world cloud & DevOps projects**, preparing you to tackle industry challenges.

Real Projects | **Real Experience**



Learn from Industry Mentors

Gain insights from top industry experts in Cloud & Devops. Our mentors bring **real-world experience** to help you master advanced skills.



Personalized Support

Get tailored guidance with **1:1 doubt-clearing sessions** for a deeper understanding.

Others Vs Learnbay

 Learnbay

OTHERS

Training Mode



100% Live
Interactive Online



Only recorded class
& few live online

Support



24/7 Student
Support



Limited Support
Hours

Placement



100% Placement
Assistance



Limited Placement
Support

Curriculum



Included in Latest
Curriculum



Often Not Included

Faculty



Experienced Industry
Professionals



Academics and
Trainers

Real-Time
Projects



Practice with Live
Projects and Team
Management



Simulated Projects

Get certified

and accelerate your career growth

E&ICT IIT Guwahati

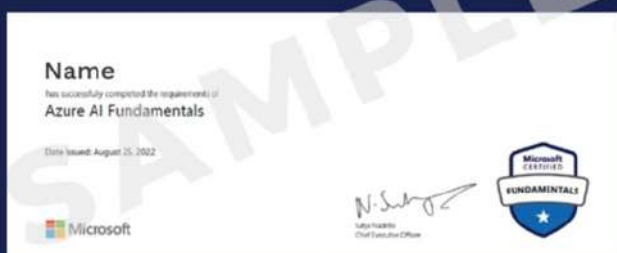


Certification from E&ICT Academy, IIT Guwahati

- ✓ **Executive Certification:** Earned in Cloud & Devops from E&ICT Academy, IIT Guwahati.
- ✓ **Hands-On Experience:** Practical learning at E&ICT Academy, IIT Guwahati.
- ✓ **Top Faculty:** Learn directly from E&ICT Academy, IIT Guwahati experts.

Azure Certification

Microsoft Certified Azure AI Fundamentals



Microsoft Course Completion Certificate

Gain an internationally recognized Microsoft certification, proving your expertise in cloud technologies.

Program Fees

Live online classes

- ✓ Live online interactive sessions
- ✓ 1:1 online Doubt Session with experts
- ✓ Virtual Mock interviews
- ✓ Online Capstone projects

Program Fee

₹ 1,10,000

Pay in easy EMIs starting as low as

₹ 7,211/ month


Tools and Modules






Program Curriculum

A unique program For IT
Professionals & Engineers

 www.learnbay.co

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TERM 1

Cloud Basics and Linux Fundamentals

Duration: 40 Hours

Outcome of this term: This term builds foundational Linux and system administration skills, including user management, file permissions, and system monitoring. You'll also gain introductory cloud computing knowledge and learn basic shell scripting for automation.

Module 1: Linux Basics and System Administration

- **Overview of Linux:** History, architecture, and OS comparisons.
- Linux Kernel and Shell: Types of shells and kernel responsibilities.
- Basic Command Usage: **Key commands like ls, cd**
- File Permissions: Manage access with chmod, chown

Module 2: Practical Exercises and Assignments

- **User Management:** Add, modify, or delete users with useradd.
- Create and manage groups with groupadd.
- Sudo Configuration: Edit /etc/sudoers to assign privileges.
- **System Monitoring: Use tools like top, df**

Module 3: Introduction to Cloud Computing (AWS, Azure, GCP)

- **Network Configuration:** Set up static IPs and configure interfaces.
- Generate and manage SSH keys with ssh-keygen.
- Shell Scripting Basics: Scripts for automation and tasks.
- Loop Statements: Automate with while and for loops.

TERM 2

Python Programming Essentials

Duration: 40 Hours

Outcome of this term: This term covers Python basics, data structures, advanced concepts, and cloud automation, equipping you with the skills to automate tasks and manage cloud infrastructure effectively.

Module 1: Python Basics & Environment Setup

- Variables and Data Types: **Int, float, str, bool**
- Operators: Arithmetic, logical, and comparison operations.
- Development Environment: Setting up IDEs like PyCharm and Jupyter.

Module 2: Python Programming Foundations

- If-Else Statements: Nested if, ternary operators.
- Loops: For, while, break, continue, and else in loops.
- **Defining functions** with def and using return.
- Arguments: Default values, *args, **kwargs for flexibility.

Module 3: Data Handling and Structures

- **Lists:** Indexing, slicing, and methods like append(), pop().
- Nested dictionaries, keys(), values(), and get() methods.
- **File Operations:** Reading, writing, and safety using the with statement.

Module 4: Advanced Python Concepts

- List, dictionary, and set comprehensions.
- Lambda Expressions: Inline functions for map(), filter(), and reduce().
- **Exception Handling: Debugging with try-except blocks.**

Module 5: Python for Cloud and DevOps

- Scripting for Cloud Automation
- Python Libraries for Cloud Management
- Automating Cloud Infrastructure Deployment using Python
- Integrating Python with **Cloud Monitoring APIs for Log Analysis**

TERM 3 AWS Cloud Mastery

Duration: 40 Hours

Outcome of this term: This term provides comprehensive AWS training, covering core services, solution architecting, advanced modules, and certification preparation, equipping you to design, deploy, and manage cloud infrastructure.

Module 1: AWS Fundamentals

- Overview of AWS Services: Key services: **EC2, S3, RDS, Lambda.**
- Secure root accounts with MFA.
- Core AWS Concepts: Regions, availability zones, and global infrastructure.
- Best practices for IAM and security groups.

Module 2: AWS Solution Architecting

- EC2: Instance types, AMI selection, & security groups.
- **AWS Lambda:** Create functions & set triggers
- S3: Manage buckets, object lifecycle, and bucket policies.
- EBS and Glacier: Snapshots, backups & archival strategies.

Module 3: Advanced AWS Modules

- **RDS and DynamoDB:** Manage backups, multi-AZ, tables, and keys.
- Redshift: Set up clusters, ingest data, and use Spectrum.
- Serverless: **Build solutions with Lambda** and API Gateway.

Module 4: AWS Certifications Preparation

- Design scalable and fault-tolerant solutions.
- Disaster Recovery: Ensure high availability across regions.
- Migration: Optimize with AWS migration tools.
- **Hands-on Labs and Practice Scenarios**

TERM 4 Microsoft Azure Proficiency (Optional)

Duration: 40 Hours

Outcome of this term: This term covers Azure administration, solution architecting, DevOps, and certification preparation, equipping you with the skills to design, deploy, and manage cloud solutions on Azure.

Module 1: Azure Administration & Identity Management

- **Introduction to Azure:** Navigating the portal and basic CLI commands.
- **Account Setup:** Subscription types, resource groups, and billing alerts.
- **Azure Identity:** Role-based access control and Active Directory.

Module 2: Architecting Solutions on Azure

- **Advanced Networking:** Load balancing, VPN, and ExpressRoute setups.
- **Data Solutions:** Azure SQL, Cosmos DB, and Synapse Analytics.
- **Developing for Cloud: Microservices, containers, and serverless.**

Module 3: Advanced Azure Specializations

- **Azure DevOps:** CI/CD pipelines for streamlined deployment.
- **Application Modernization:** Optimize apps with Azure services.
- **Governance and budget controls** for efficiency.
- **Azure Storage: Blob tiers and Data Lake integration**

Module 4: Certification Preparation for Azure

- **Certification Prep:** Solutions Architect Expert exam readiness.
- **Case Studies: Real-world cloud scenarios and best practices.**
- **Core Domains:** Review concepts & study resources

TERM 5

Google Cloud Platform (GCP) Fundamentals (Optional)

Duration: 40 Hours

Outcome of this term: This term covers GCP basics, advanced architecture, networking, database management, and big data services, preparing you to design and manage scalable cloud solutions on Google Cloud.

Module 1:

GCP Basics and Core Services

- Overview of GCP Services
- Setup & Create accounts, projects, and IAM roles.
- Compute Services: Manage VMs, preemptible instances, and GKE clusters.
- Storage Services: **Buckets, storage classes, Firestore, and Bigtable.**

Module 2:

Advanced GCP Architecting and Networking

- VPC and Subnets: Create VPCs, configure subnets, and peering.
- Load Balancing: Set up HTTP(S) and traffic.
- Design multi-region and hybrid cloud solutions.
- **Implementing Traffic Management with Cloud Load Balancing**

Module 3:

GCP Database Management and Big Data

- Big Data Services: Use **BigQuery, Dataproc, and data migration tools.**
- Database Management: Firestore, Bigtable, and optimizing databases.
- Cloud Monitoring: Alerts, log analysis, and Cloud Logging setup.
- Traffic Management Using load balancing

TERM 6

Server and Application Virtualization

Duration: 30 Hours

Outcome of this term: This term covers virtualization fundamentals, server and application virtualization, and containerization, equipping you with the skills to efficiently manage virtualized environments and multi-cloud deployments.

Module 1: Fundamentals of Virtualization

- **Virtualization Basics: Benefits, concepts, and hypervisors (Type 1, Type 2).**
- Full vs. Para-Virtualization: Differences, pros, cons, and use cases.
- Hypervisors: Overview of **VMware, KVM, Hyper-V**.

Module 2: Server Virtualization & Application Virtualization

- VM Lifecycle: Create, configure, clone, and delete virtual machines.
- VM Resource Allocation: Allocate CPU, RAM, storage, and networks.
- Application Virtualization: Package apps with tools like **ThinApp, XenApp**.

Module 3: Containerization and Orchestration

- VMs vs. Containers: Efficiency, security, and use case scenarios.
- **Unikernels:** Lightweight virtualization for specific applications.
- Multi-cloud Deployments: Virtualization in **hybrid and multi-cloud setups**.

TERM 7

Data Migration and Resilience

Duration: 25 Hours

Outcome of this term: This term focuses on data migration strategies, ensuring high availability, resilience, and security in multi-cloud environments, while integrating DevOps practices for efficient and automated workflows.

Module 1: Data Migration in Multi-Cloud Environments

- Basics of Data Migration: Types, benefits, and common challenges.
- Migration Strategies: **Lift-&-shift, re-architecting, rollback planning.**
- Key Considerations: Data integrity, security, and downtime reduction.

Module 2: Resilience and High Availability in Cloud

- High Availability: Redundancy with availability zones.
- Disaster Recovery: **Recovery plans, RPO, and RTO strategies.**
- Backup Solutions: Incremental and automated backup techniques.

Module 3: Integrating Data Migration with DevOps

- **CI/CD Pipelines:** Streamlining data migration with DevOps tools.
- Automate data handling and compliance workflows.
- Monitoring: Track data integrity and process efficiency.

Module 4: Case Studies & Real- World Projects

- Enterprise Projects: Implement resilience in data migration.
- **High Availability: Real-world multi-cloud availability setups.**
- Securing Cloud Data: Strategies for protection in cloud environments.

TERM 8

DevOps Mastery and Tooling

Duration: 60 Hours

Outcome of this term: This term covers core DevOps practices, version control, automation, configuration management, monitoring, and infrastructure as code.

Module 1: Core DevOps Practices & Tools

- DevOps Overview: **Lifecycle, benefits, and key principles.**
- DevOps Culture: Differences from traditional models, roles, and mindset.

Module 2: Version Control and Automation

- Version Control Basics: Git workflow, branching, and merging.
- CI Concepts: Tools, and **Jenkins pipeline basics.**
- GitHub/GitLab: Collaboration, webhooks, and **CI/CD configuration**

Module 3: Configuration Management & Orchestration

- Build Automation: Tools like **Maven and Gradle** for CI workflows.
- Release Management: Strategies, versioning, and Git practices.
- Delivery Automation: Ansible and Terraform for IaC deployment.

Module 4: Monitoring & Logging with ELK Stack

- Monitoring and Logging with **ELK Stack**
- Containers Overview: Benefits, orchestration with Kubernetes.
- Kubernetes: Pods, deployments, & namespaces
- **Helm: Basics, charts, and managing releases.**

Module 5: Infrastructure as Code with Terraform

- Monitoring Tools: **Prometheus, Grafana**, and metrics.
- ELK Stack: Log collection, processing, and visualisation.
- DevSecOps Basics: **CI/CD security, code scanning, and Vault.**

TERM 9

Advanced Security and DevSecOps

Duration: 30 Hours

Outcome of this term: This term focuses on cloud security, DevSecOps practices, and automation tools, equipping you to implement secure cloud environments and automate security within CI/CD pipelines.

Module 1: Security Fundamentals for Cloud and DevOps

- Cloud Compliance Standards: **ISO, SOC2, and cloud regulations.**
- IAM Best Practices: Secure roles, policies, and **MFA strategies.**
- Shared Responsibility: Cloud provider and user security roles.
- Encryption and secure key management.

Module 2: DevSecOps and Security Automation

- DevSecOps Overview: Shift-left security and CI/CD integration.
- Automation Tools: **SonarQube, Aqua Security, Vault** for secrets.
- Secure Pipelines: Automate scanning and validation in CI/CD.
- Automate alerts and threat response actions

Module 3: Cloud-Specific Security Modules

- AWS Security Tools: **GuardDuty, Macie, and Inspector for threats.**
- Azure Security Solutions: Sentinel and Security Center practices.
- GCP Security Features: IAM, Security Command Center, and alerts.

TERM 10 Electives and Specialized Cloud Projects

Duration: 20 Hours

Outcome of this term: This term covers big data integration, advanced multi-cloud networking, and project-based learning, preparing you for cloud certifications and real-world deployment scenarios.

Module 1: Big Data Integration for Cloud

- Big Data Services on AWS, Azure, and GCP
- **Real-time Analytics and Data Lakes**
- Optimizing Big Data Workflows for Cost and Performance in Cloud Environments

Module 2: Advanced Networking in Multi-Cloud

- Multi-cloud Network Design and **Load Balancing**
- **VPN**, Direct Connect, and Peering Solutions
- Implementing Secure Network Architectures Across Multi-Cloud Environments

Module 3: Project-Based Learning and Case Studies

- Industry-Specific Scenarios (Healthcare, E-commerce, Finance)
- **Real-World Multi-cloud Deployment** and Management Projects

Module 4: Certification Pathways and Exam Prep

- AWS Solutions Architect, **SysOps**, and DevOps Prep
- Azure Solutions Architect, DevOps Engineer Exam
- **GCP Architect Certification and Practice Exams**

TERM 11

GenAI Essentials for Cloud & Devops

Duration: 30 Hours

Outcome of this term: This term explores the integration of Generative AI in DevOps, focusing on automating workflows, optimizing CI/CD pipelines, and enhancing monitoring and incident resolution with AI-powered tools.

Module 1: Introduction to Generative AI in DevOps

- Generative AI overview.
- **Use cases in DevOps automation.**
- Introduction to Large Language Models (**LLMs**) like GPT.

Module 2: Automating DevOps Workflows with Generative AI

- AI for Infrastructure as Code (**IaC**) automation, AI-assisted **CI/CD** pipeline optimization
- Automated script generation.

Hands-On Project 1:

- **"Automate Infrastructure Setup with Generative AI"**
- Build an AI-powered tool that generates Terraform or Ansible scripts to provision resources dynamically.

Module 3: AI-Powered Monitoring & Incident Resolution

- AI for real-time **log analysis**, Incident detection using Generative AI.
- Automated **root cause analysis** with AI insights.

Module 4: Predictive Analytics and Resource Management

- AI for cloud resource **forecasting**, Predicting workload trends.
- Automating **resource scaling** based on AI insights.

Hands-On Project 2:

- **"Real-Time Incident Detection and Resolution System"**
- Create a system that uses Generative AI to analyze server logs, detect anomalies, and suggest resolution steps.

Module 5: Generative AI for Container Orchestration

- AI for **Kubernetes** manifest generation.
- Automated scaling of **microservices**.
- **Dockerfile** creation with AI tools.

Module 6: Cost Optimization and Budget Planning with AI

- **AI-driven** cost forecasting.
- Identifying cost-saving strategies.
- **Budget optimization** with Generative AI tools.

Hands-On Project 3:

- **"AI-Enhanced Cloud Cost Optimization Tool"**
- Develop a dashboard that analyzes cloud billing data and suggests cost-saving actions using Generative AI.

● **Module 7:**
**Disaster Recovery
and Security
Automation with AI**

- AI for generating disaster recovery plans.
- **Automating backup** configurations.
- Generative AI in cloud security **workflows**.

● **Module 8:**
**Customizing
GenAI Tools for
Cloud and
DevOps Needs**

- **Fine-tuning LLMs** for DevOps tasks.
- Integrating OpenAI APIs with DevOps tools.
- Custom automation scripts with AI.

● **Hands-On
Project 4:**

- **"Disaster Recovery Automation with AI"**
- Build an AI-powered tool to design, test, and automate disaster recovery strategies for cloud environments.

Discussion Prompt: "How do you see Generative AI revolutionizing CI/CD pipelines in enterprises?"

Practical Tip: "Use ChatGPT or similar LLMs to generate a basic Terraform script and compare it with a manually written one for efficiency."

TERM 12

Cloud Computing Masterclass - IIT Guwahati Faculty

Duration: 5 Hours

Outcome of this term: This term covers cloud computing fundamentals, advanced technologies, and industry trends, with expert sessions and certification preparation for AWS, Azure, and GCP.

Module 1: Fundamentals and Industry Insights

- Evolution of Cloud Computing: from Basics to Multi-Cloud
- Cloud Service Models (**IaaS, PaaS, SaaS**) and Deployment Strategies
- Industry Use Cases: BFSI, Healthcare, Retail

Module 2: Advanced Cloud Technologies and Trends

- Serverless and Edge Computing
- **Hybrid** and **Multi-Cloud Strategies** for Enterprises
- Sustainable Cloud Practices: Green Computing

Hands-On Exercise

Practical Task: "Sketch a multi-cloud deployment strategy for an e-commerce business, highlighting key advantages."

Brainstorm: "Identify three ways serverless computing can improve scalability for startups with limited resources."

Executive-level real-time **Industrial Projects**

#1

CI/CD Pipeline

Create a multistage CI/CD pipeline for deploying a microservices based application to a cloud platform like AWS, Azure, or GCP.

Tools: Jenkins, GitLab CI/CD, Docker, Kubernetes

Outcome: Automate microservices deployment using a multistage CI/CD pipeline.

#2

Cloud Infrastructure Automation

Design and deploy an automated cloud infrastructure setup using Terraform to create and manage cloud resources.

Tools: Terraform, AWS CloudFormation, Azure Resource Manager

Outcome: Automate infrastructure provisioning and management across clouds.

#3

Monitoring and Logging Solution

Set up a robust monitoring and logging infrastructure for realtime data analysis and alerting.

Tools: Prometheus, Grafana, ELK Stack, AWS CloudWatch

Outcome: Create a robust system for real-time monitoring and alerts.

#4

Serverless Application Deployment with DevOps

Build and deploy a serverless application using cloud functions, ensuring that the entire process follows a DevOps workflow.

Tools: AWS Lambda, Azure Functions, Google Cloud Functions, GitHub Actions

Outcome: Develop and deploy a scalable serverless application.

Thank you!

For more queries and information
please reach out to us at:

+91 77956 87988

Visit us at

www.learnbay.co

