

Learn Linux, DevOps & Cybersecurity

with Hands-on Labs

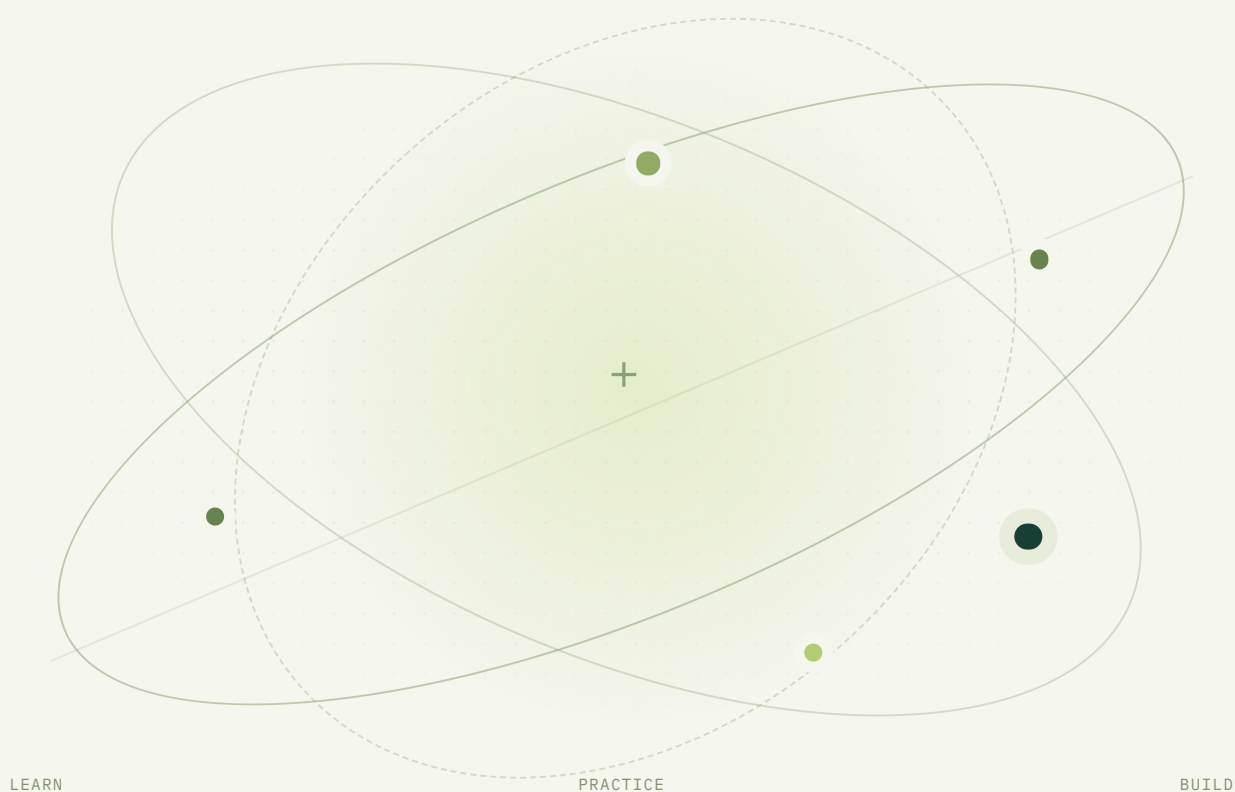


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Build skills by doing real work.

LabEx is a hands-on learning platform. You learn a concept, try it in a real environment, and build confidence through the result.



Linux



DevOps



Cybersecurity



Cloud



One small win at a time.

Read

Understand the task.

01

Try

Make a real change.

02

Check

Observe the outcome.

03

Grow

Connect it to a skill.

04

A practical starting point

New to a technical subject? Begin with guided labs. Commands, files, and tools become familiar through small tasks you can complete and understand.

Room to go further

Choose a focused course, follow a learning path, or bring skills together in a challenge or project. Your next step can grow with your experience.

43

learning paths

373

courses

5,532

hands-on labs

Why the experience works

LabEx connects explanation, practice, and feedback in the same learning flow. The design keeps the next action clear and makes progress visible.

01



Real environments

Run the command. Edit the file. Inspect the output. A working environment connects an explanation with something you can observe.

Knowledge becomes action.

02



Small, observable steps

Guided tasks and checks make progress concrete. When something fails, feedback gives you a place to investigate and try again.

Feedback keeps learning moving.

03



Connected skills

Labs build focused abilities; courses and paths give them direction. Skill Trees relate individual practice to a wider map of a technical subject.

Small wins add up.

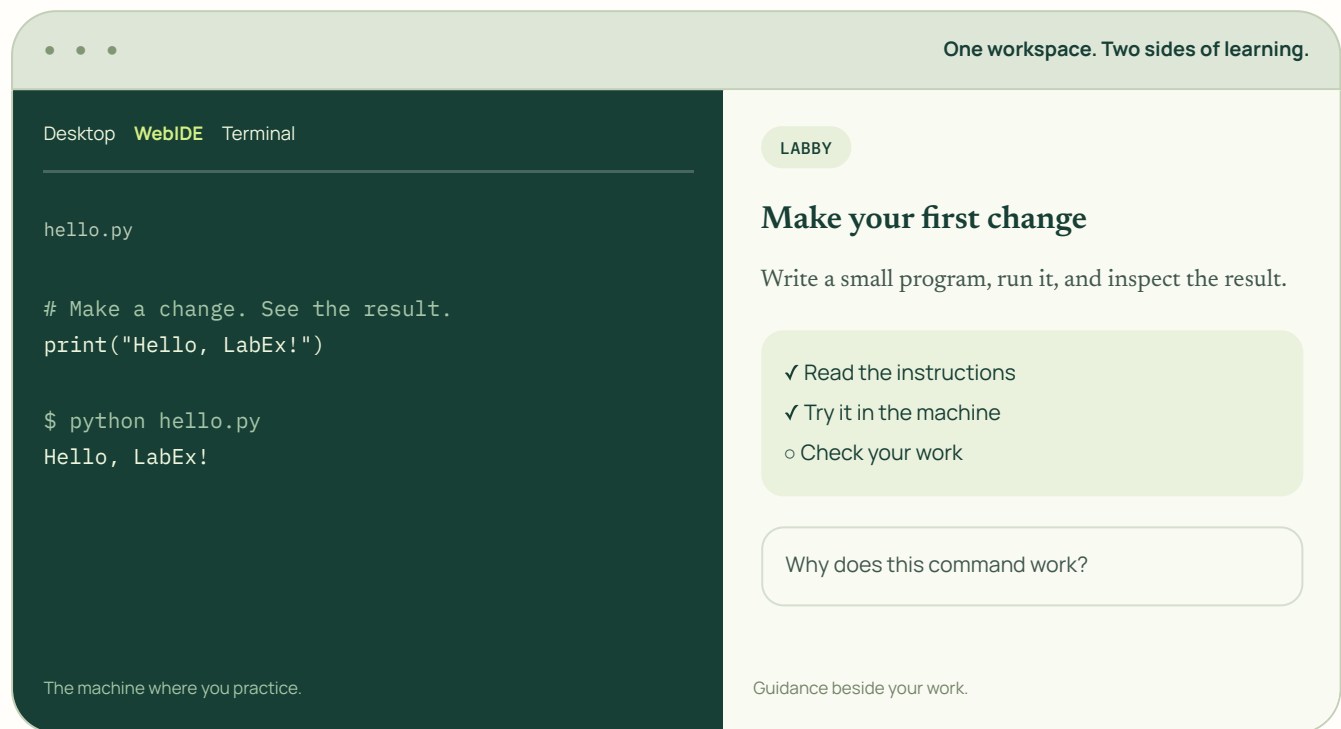


Understand it.
Try it.
Make it yours.

Guidance helps you begin. Independent practice helps you find out what you can do. A connected skill map gives those small wins a wider context.

A real workspace, in your browser

Starting a lab creates a Linux virtual environment for your practical work. Instructions sit beside it, keeping the task and the tools within reach.



Instructions and a Linux workspace, side by side.

01

Desktop

Explore a graphical Linux desktop and run graphical applications.

02

WebIDE

Edit source files and work in a browser-based development interface.

03

Terminal

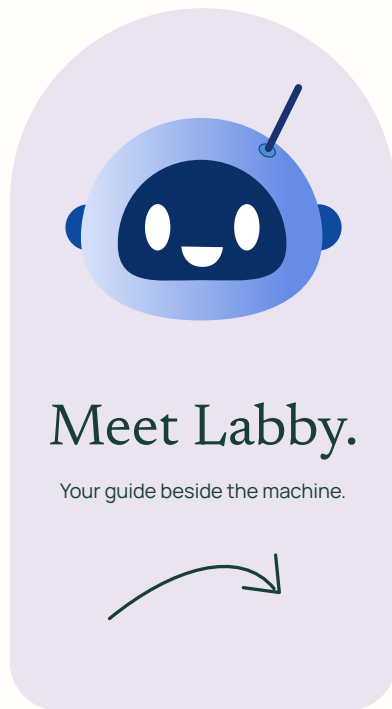
Run commands, inspect output, and develop command-line habits.

One machine. Different ways to work.

Choose the interface appropriate to the lab. Its instructions describe the tools, setup, and any external-account requirements.

A little help at every step

Labby is the AI learning guide beside your workspace: presenting steps, helping explain concepts, and supporting you when something needs debugging.



01 / GUIDE

A clear next step

Create a file, then run your first program.

```
$ python hello.py
```

02 / CHECK

Feedback you can use

! The expected file was not found.

Check the folder, then try again.

✓ Check passed. Ready to continue.

03 / EXPLAIN

Help at the point of confusion

What does this command do?

Ask for a concept explanation or debugging help while you work.

Follow a task, check your work, and ask Labby for help along the way.

Feedback, close to the task

Steps with verification can check the work in your environment and offer feedback. A failed check becomes a prompt to inspect, understand, and try again.

You still do the work

The practical experience remains yours: make the change, run the command, and observe the result. Ask for help when the reasoning needs clarification.

A clear structure for learning

Labs are the unit of hands-on practice. Courses organize related labs; learning paths connect courses around a wider direction.

LEARNING PATH

A broader goal: DevOps

COURSES / FOCUSED SUBJECTS

Build a foundation. Explore a tool. Apply it.

HANDS-ON LAB

Explore Linux

HANDS-ON LAB

Work with Git

HANDS-ON LAB

Run a container

Skill Trees

The capabilities behind the practice.



Learning paths connect courses; courses bring related labs together.

GUIDED LABS

Learn a technique.

Follow explained steps, try the task, and observe what changes.

CHALLENGES

Apply it yourself.

Work toward a defined goal with less step-by-step direction.

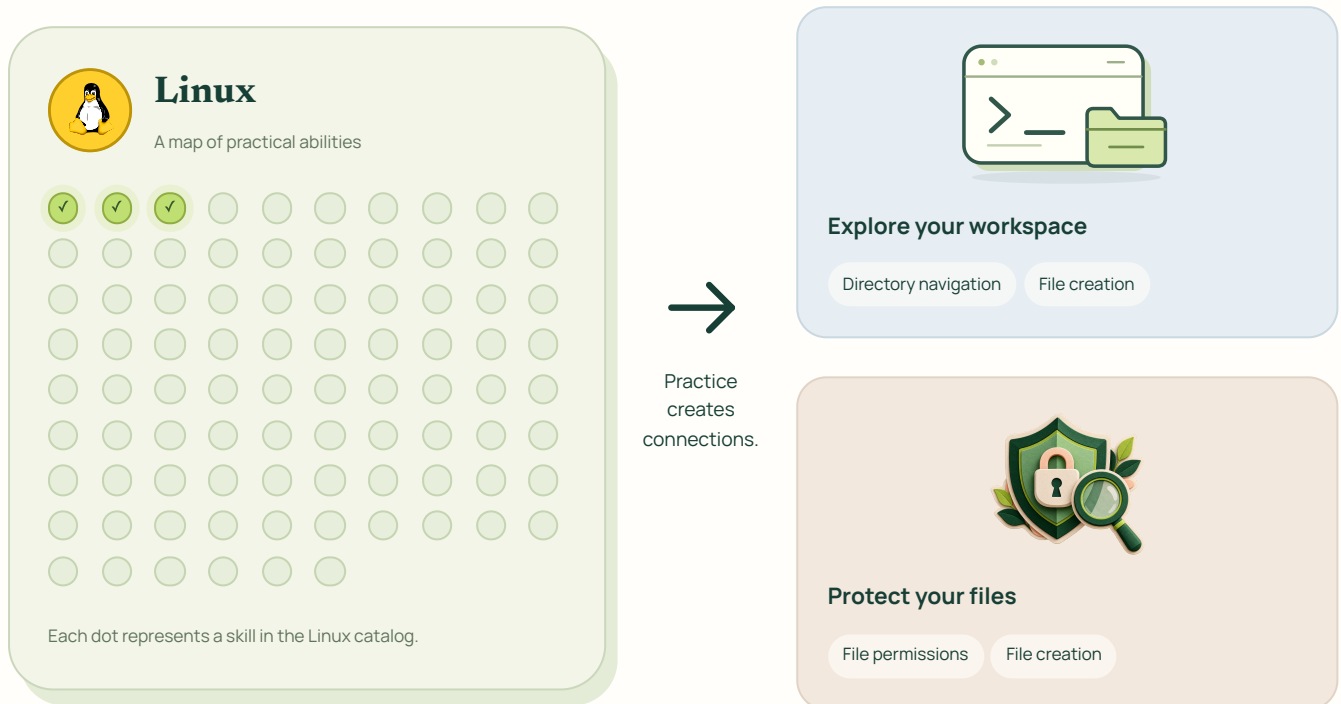
PROJECT COURSES

Deliver an outcome.

Bring related skills together around a small, complete piece of work.

See your skills take shape

A Skill Tree maps a technical subject into practical abilities. Labs connect to skills, so one exercise can contribute to several capabilities and one skill can be practiced in several contexts.



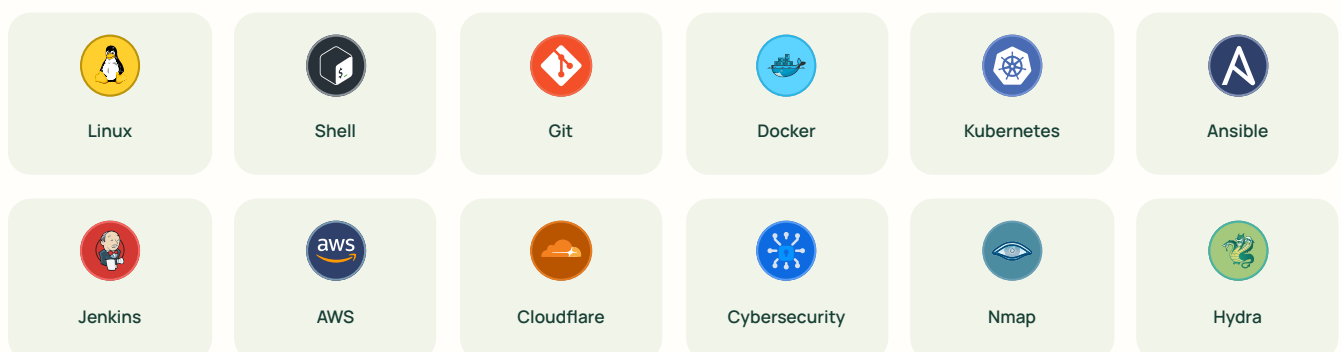
Example: a single lab can help you practice several connected skills.

A map, beyond a checklist

Look at the abilities in a subject, recognize what you have practiced, and find areas for further work. Learning can continue across different courses and labs.

Progress with context

As you complete connected practice, your Skill Tree reflects the skills you unlock. The focus is what you can do, alongside what you have completed.



Put your knowledge to work

Challenges give you a defined task with less step-by-step direction. They create space to decide what to try, inspect the result, and apply skills you have already practiced.

GUIDED PRACTICE

Follow the steps.

Learn a technique with explanations and an ordered route.

learn → try → check



INDEPENDENT PRACTICE

Find your approach.

Work toward an outcome and choose the tools you need.

inspect → decide → solve

Make practice a habit



CHALLENGE QUEST

100 Days of Linux

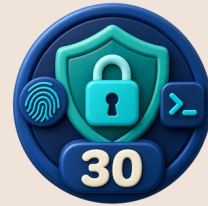
100 labs ↗



CHALLENGE QUEST

30 Days of DevOps

30 labs ↗



CHALLENGE QUEST

30 Days of Cybersecurity

30 labs ↗

A focused task. A continuing routine.

Choose an individual challenge to practice a specific skill, or follow a Quest to return to related subjects over time.

Projects

REALISTIC TASKS. TANGIBLE OUTCOMES.

Bring your skills together around something you can build, deliver, improve, or repair. A LabEx Project is an outcome-focused course built around a small, complete piece of work.

THE BRIEF

Publish an update. Keep a way back.

A community website has a new release ready. Your task is to publish it, check the visitor experience, and recover if an important path fails.



Common Ground

WORKSHOPS & GATHERINGS

A place for the community.

What's on

Plan your visit

A result you can inspect.

- ✓ Updated pages served to visitors.
- ✓ Links and downloads checked.
- ✓ A preserved version ready for recovery.

01 Understand the goal

02 Practice with guidance

03 Apply it independently

Publish an update, test the visitor experience, and keep a recovery plan.

A reason for the work

A concrete situation makes the task meaningful: a visitor needs a working page, a team needs accurate files, or a service needs protection.

Support, then independence

Guided practice introduces the methods. An independent challenge then asks you to apply them in a changed situation.

A result that works

Check the actual behavior, contents, or relationships in your result, while preserving the parts of the scenario that should keep working.

A growing part of the learning journey.

Projects are already available in areas including Linux, DevOps, Cybersecurity, and Networking. LabEx plans to extend project-based practice to more learning paths.

Practical work. Real outcomes.

Turn everyday tasks into practical experience with projects across Linux, DevOps, Cybersecurity, and Networking.



Linux

2 guided + 1 challenge

Turning Orders into a Pickup List

Deliver an accurate pickup list and individual bag labels.

Match payments to the right orders, exclude cancellations, and preserve every item and quantity. Apply the same methods independently to workshop materials.

Text processing

Data relationships

Explore project ↗



DevOps

2 guided + 1 challenge

Deploying a Website with a Rollback Plan

Publish a website update with a working recovery route.

Check what visitors actually receive, keep a complete previous version, and recover when a release breaks an important user path.

Release checks

Recovery

Explore project ↗



Cybersecurity

1 guided + 1 challenge

Investigating a Website Backup Leak

Protect an internal archive while the public site keeps working.

Investigate a suspicious download, trace the exposed file, and repair access. Then apply the method to a second portal with a different layout.

Investigation

Access boundaries

Explore project ↗



Networking

2 guided + 1 challenge

Getting a Pop-Up Event Network Ready

Get event devices connected and keep check-in easy to find.

Configure client leases, gateway and DNS settings, and a reserved address. Check that event resources work and the reference service remains available.

DHCP

DNS & connectivity

Explore project ↗

Linux

Build your technical foundation

Linux is the working environment behind servers, development tools, and much of modern infrastructure. Learning to navigate it gives you a practical foundation for administration, automation, cloud operations, and security.



01

Find your way

02

Work with the shell

03

Build your foundation

Start with files and directories, then build confidence with permissions, users, processes, and the shell. Repeat familiar tasks in new situations so that a command becomes a tool you can choose and explain.



Beginner

10 labs

Quick Start with Linux

A short introduction to Linux files, commands, permissions, and users. Ten labs combine guided practice with challenges for first-time learners.

[Explore course](#) ➔



Beginner

37 labs

Linux for Noobs

Build a broader command-line foundation through practical Linux tasks, from working with files to managing everyday system operations.

[Explore course](#) ➔



Beginner

32 labs

RHCSA Prep (EX200)

Practice Linux administration skills relevant to the RHCSA exam. Use the course as preparation alongside the official exam objectives.

[Explore course](#) ➔

Build toward

Navigate and inspect a Linux filesystem. Manage files, permissions, and user accounts. Build a foundation for system administration and automation.

[Explore the path](#) ➔

DevOps

Connect development and operations

DevOps brings software delivery and system operation into one workflow. LabEx lets you practice the tools that package applications, run workloads, and make repeated infrastructure work more consistent.



01

Package

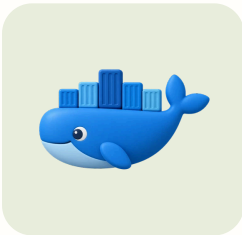
02

Orchestrate

03

Automate

Use Docker to work with containers, Kubernetes to organize workloads, and Ansible to automate configuration. These subjects build on a command-line foundation and become more useful when practiced together in projects.



Beginner

16 labs

Docker for Beginners

Learn to work with containers and images, then explore the Docker workflows used to package and run applications.

[Explore course](#) ↗



Beginner

12 labs

Kubernetes for Beginners

Take your first steps with Kubernetes and build familiarity with the resources used to deploy and manage containerized workloads.

[Explore course](#) ↗



Beginner

26 labs

Ansible for Beginners

Explore Ansible through practical automation tasks. Build confidence with the tools used to make configuration work repeatable.

[Explore course](#) ↗

Build toward

Build and operate containerized applications. Understand Kubernetes workloads and deployment workflows. Automate repeatable configuration tasks.

[Explore the path](#) →

Cybersecurity

Learn to investigate and defend

Security skills develop through observation, investigation, and careful testing. LabEx combines introductory exercises with tool-focused practice so you can connect security concepts to evidence in a working environment.



01

Understand

02

Investigate

03

Apply

Explore common security tools, examine network traffic, and work through controlled challenges. Practice on the environments and targets provided by a lab, following its stated scope and instructions.



Beginner

22 labs

Cybersecurity Labs for Beginners

Explore foundational security topics through guided labs and challenges. Develop familiarity with common tools in a controlled practice environment.

[Explore course](#) ➔



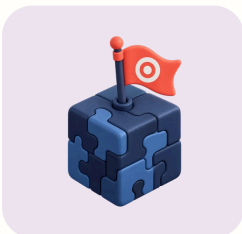
Beginner

20 labs

Wireshark for Beginners

Learn to inspect network traffic with Wireshark and connect packet-level observations to the activity of applications and protocols.

[Explore course](#) ➔



Beginner

10 labs

CTF for Beginners

Apply introductory security skills to capture-the-flag exercises with defined goals and opportunities for independent problem solving.

[Explore course](#) ➔

Build toward

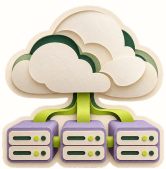
Build familiarity with security tools and workflows. Inspect network activity and interpret technical evidence. Apply foundational skills in independent challenges.

[Explore the path](#) ➔

Cloud

Build and operate online services

Cloud learning connects application code with the infrastructure that serves it. LabEx offers courses in AWS and Cloudflare, from foundational concepts to building and operating applications.



01

Build on AWS

02

Explore the edge

03

Operate applications

Begin with AWS foundations or Cloudflare Workers, then move into application projects. Follow each course's prerequisites and environment instructions: cloud exercises can use course-specific environments or require your own provider account.



Beginner

8 labs

AWS Foundations for Beginners

Build an initial understanding of AWS concepts through an ordered sequence of foundational practical exercises.

[Explore course](#) ↗



Beginner

12 labs

Cloudflare Workers for Beginners

Explore serverless development with Cloudflare Workers and practice the foundations needed for application-focused projects.

[Explore course](#) ↗



Beginner

3 labs

Build and Operate a Web Application with AWS

Bring cloud concepts together in a project course centered on building and operating a web application with AWS.

[Explore course](#) ↗

Build toward

Understand core cloud concepts through practical tasks. Build a foundation for application deployment and operation. Explore serverless development with Cloudflare Workers.

[Explore the path](#) →

More directions to explore

Explore more ways to build on your Linux, DevOps, Cybersecurity, and Cloud skills, from programming and databases to web development and data science.



Programming

Write, run, and understand code. Explore Python, Java, C, C++, Go, and Rust through courses and practical projects.



Databases

Practice working with data in MySQL, PostgreSQL, SQLite, Redis, and MongoDB. Choose the tools relevant to your work.



Web development

Develop the foundations of web experiences, then bring related skills together in application projects.



Data science

Explore data-oriented courses and projects, building on programming and database skills as your foundation grows.

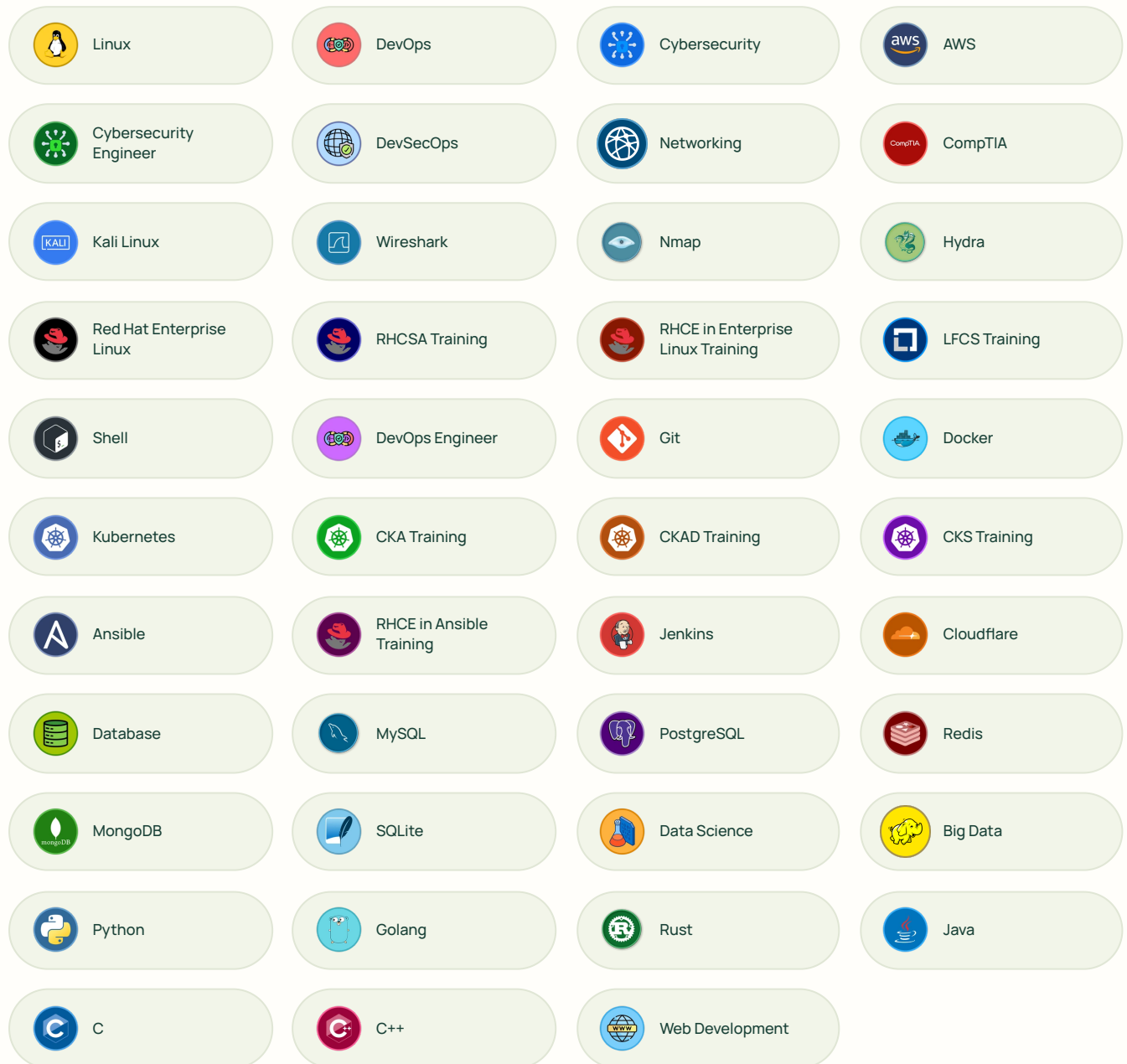
373

courses across all subjects.

Browse the complete directory in the appendix.

Find your direction

Follow a learning path around a technical subject, a set of tools, or a professional practice goal.



43 learning paths. Choose the one that fits your goals.

Begin free. Keep building.

Start with free practice and become familiar with the workspace. Choose Pro when you want broader access across the learning catalog.

FREE



Your first practical step.

- ✓ Free hands-on labs
- ✓ Up to three workspace launches daily
- ✓ A place to explore the learning experience

[Find a starting point](#) ↗

PRO



More room to practice.

- ✓ Broader lab access
- ✓ Unlimited workspace launches
- ✓ Continued practice across subjects

[Explore current plans](#) ↗

Choose the next step that fits your goals.

See the pricing page for current benefits, offers, and subscription terms. Certification preparation is training for an external exam; LabEx completion certificates are a separate credential.

Build practical skills, together

A shared workspace helps a class or organization give learning direction, organize members, and follow progress.



Your team's learning hub

Example

Members

Skill Trees

Progress

Platform teamLinux · Docker

New startersLinux · Git

Learning in progress

Linux

Docker

Cybersecurity

01

Organize learners

Bring members into groups.

02

Assign Skill Trees

Give practice a clear focus.

03

Review progress

Follow activity and learning.

Free management tools. Pro access where needed.

The team workspace is free. Add paid Pro Seats for members who need full Pro access.

[Explore LabEx Teams ↗](#)

One small win starts here.

Choose something you want to learn. Open a lab. Make your first change.

01

Choose a course



02

Try a guided lab



03

Apply it in practice

YOUR NEXT STEP

Find your first lab.

labex.io/learn ↗



Education is our mission.

Practical learning, one small win at a time.

[Workspace Guide](#) ↗

[Labby AI](#) ↗

[Skill Trees](#) ↗

[Plans & Pricing](#) ↗

[LabEx Teams](#) ↗

The complete course directory

Browse 373 courses by subject to find your next skill or practical project. Select any title to explore what you will learn.

01	Linux & System Administration	103
02	DevOps & Containers	48
03	Cybersecurity & Networking	88
04	Cloud	37
05	Programming	55
06	Databases	20
07	Web Development & Data Science	22

Course / Project

Courses develop focused skills. Projects bring skills together in a practical task.

Labs

The number of hands-on labs and challenges in each course.

Linux & System Administration

Course	Type	Labs
Quick Start with Linux	Course	10
Become a Junior System Administrator	Course	10
Linux for Noobs	Course	37
Linux Commands Practice Online	Course	41
Shell for Beginners	Course	18
Linux Security for DevSecOps	Course	20
Linux Practice Challenges	Course	156
Linux Terminal Basics	Course	7
File System Navigation and File Operations	Course	7
Viewing, Searching, and Editing Files	Course	8
Shell Redirection and Pipelines	Course	7
Shell Environment and Variables	Course	6
Users, Groups, and Permissions	Course	7
Processes and Job Control	Course	6
System Information and Resource Monitoring	Course	6
Disk Filesystems and Storage Management	Course	8
Linux Networking Fundamentals	Course	7
Remote Access and Secure File Transfer	Course	6
Software Package Management	Course	6
DNS Service Administration	Course	6
Firewalld Configuration	Course	6
Red Hat System Administration (RH124) Certification Labs	Course	14
Red Hat System Administration (RH134) Certification Labs	Course	11
Red Hat Enterprise Linux Automation with Ansible (RH294) Certification Labs	Course	9
RHCSA Certification Exam Practice Exercises	Course	58
RHCSA Prep (EX200)	Course	32
RHCSA Practice Exam 01	Course	16
RHCSA Practice Exam 02	Course	16
RHCE in Enterprise Linux Prep (EX342)	Course	28
RHCE in Enterprise Linux Practice Exam 01	Course	14
RHCE in Enterprise Linux Practice Exam 02	Course	14
LFCS Prep	Course	52
LFCS Practice Exam 01	Course	20
LFCS Practice Exam 02	Course	20
PowerShell for Beginners	Course	32
Service Management with systemd	Course	6
Log Management and Text Processing	Course	6
Archiving and Backup	Course	6
Shell Scripting Fundamentals	Course	7
Advanced Shell Scripting Techniques	Course	6
Text Processing with AWK and sed	Course	6
Scheduled Tasks and Routine Maintenance	Course	6
Boot Process and Recovery	Course	7
Basic System Security	Course	6
Version Control with Git	Course	6

Course	Type	Labs
Docker Container Basics	Course	6
MySQL Database Basics	Course	5
Nginx Web Server	Course	6
Apache Web Server	Course	6
DHCP Service Administration	Course	6
NFS and Samba File Sharing	Course	6
RPM and DNF Package Management	Course	5
SELinux Administration	Course	6
Ansible Automation	Course	5
HAProxy Load Balancing	Course	6
Keepalived High Availability	Course	6
Prometheus Monitoring	Course	6
Grafana Data Visualization	Course	6
Centralized Log Management	Course	6
GitHub Actions CI/CD	Course	6
Terraform Infrastructure as Code	Course	6
Kubernetes Fundamentals	Course	6
Kubernetes Cluster Administration	Course	6
Python for Operations	Course	6
100 Days of Linux	Course	100
30 Days of RHCSA	Course	30
Preparing a Photo Collection for Print	Project	2
Getting an Event Toolkit Ready for Linux	Project	2
Turning Orders into a Pickup List	Project	3
Taking a Field Guide Offline	Project	2
Moving a Working Folder without Losing Local Notes	Project	3
Continuing a Mapping Job from Another Terminal	Project	2
Making Room for the Next Recording	Project	2
Build a Linux System Monitor Using Bash	Project	2
Build a Task Scheduler Using Bash	Project	1
Installing and Configuring a Mail Server	Project	1
Configuring SSH Certificates for Secure Login	Project	1
Creating a Typing Game Using Bash	Project	1
Linux Server Information Retrieval	Project	1
Restore Access to Website	Project	1
Searching for Specific Files	Project	1
Automated Daily System Log Backup	Project	1
Chess Board in Terminal	Project	1
Copy Large Files with Preserved Structure	Project	1
Customizing Linux File Listing	Project	1
New Colleague System Account Setup	Project	1
Nginx Log Analysis and Optimization	Project	1
Users and Groups Creation and Deletion Batch	Project	1
Collect Files From Specified Time	Project	1
Extracting Information From Text	Project	1

Course	Type	Labs
Extracting Link Information From Text	Project	1
Get Program That Satisfies the Condition	Project	1
Implement Custom Trash-Enabled Command	Project	1
Network Data Packet Statistics	Project	1
Random Password Generator Development	Project	1
System Rescue And Initialization	Project	4
Web Server Deployment And Disaster Recovery	Project	4
Automated Ops Toolkit Development	Project	4
Hybrid Infrastructure Deployment	Project	4
Network Service Administration	Project	4
High Availability & Automation	Project	4
Observability Stack	Project	4
Cloud Native Deployment	Project	4

DevOps & Containers

Course	Type	Labs
Git for Beginners	Course	20
Docker for Beginners	Course	16
Kubernetes for Beginners	Course	12
GitHub Actions for Beginners	Course	10
Jenkins for Beginners	Course	27
Ansible for Beginners	Course	26
Terraform for Beginners	Course	8
Monitoring and Logging for DevOps	Course	9
Docker Security for DevSecOps	Course	20
Docker Practice Challenges	Course	18
Docker Practice Labs	Course	60
Kubernetes in Practice	Course	17
CKA Prep	Course	48
CKA Practice Exam 01	Course	20
CKA Practice Exam 02	Course	20
CKAD Prep	Course	42
CKAD Practice Exam 01	Course	20
CKAD Practice Exam 02	Course	20
CKS Prep	Course	45
CKS Practice Exam 01	Course	20
CKS Practice Exam 02	Course	20
RHCE Ansible Prep (EX294)	Course	30
RHCE in Ansible Practice Exam 01	Course	14
RHCE in Ansible Practice Exam 02	Course	14
30 Days of DevOps	Course	30
30 Days of DevSecOps	Course	30
DevSecOps for Beginners	Course	28
30 Days of Docker	Course	30
30 Days of Kubernetes	Course	30

Course	Type	Labs
Kubernetes for Noobs	Course	43
Deploying a Website with a Rollback Plan	Project	3
Shipping a Café Menu in a Container	Project	2
Keeping a Guestbook Through Container Rebuilds	Project	2
Giving a Booking App Its Own Staging Environment	Project	2
Catching a Broken Release Before It Goes Live	Project	3
Alerting When Customers Cannot Use the Service	Project	2
Following a Failed Request Across Two Services	Project	2
Proving an Order Backup Can Restore the Shop	Project	3
Automating a Daily Sales Export	Project	3
Finishing Background Jobs After a Worker Fails	Project	2
Trying a New Release with a Small Share of Traffic	Project	2
Rebuilding a Preview Site from Terraform	Project	2
Keeping Unready Pods Away from Visitors	Project	2
Deploying a Simple TensorFlow Model	Project	1
Installing a Git Server	Project	1
Accepting a Release Only from Its Trusted Publisher	Project	3
Giving a Report Job Temporary Database Access	Project	3
Keeping a Look-Alike Package Out of a Build	Project	3

Cybersecurity & Networking

Course	Type	Labs
CompTIA Linux+ Certification Training Labs	Course	33
Cybersecurity Labs for Beginners	Course	22
CTF for Beginners	Course	10
Kali Linux for Beginners	Course	28
Nmap for Beginners	Course	15
Wireshark for Beginners	Course	20
Hydra for Beginners	Course	12
Hashcat for Beginners	Course	5
Metasploit for Beginners	Course	6
Cryptography for Beginners	Course	10
Penetration Testing for Beginners	Course	8
Packet Analysis with tcpdump	Course	5
Protocol Analysis with Tshark	Course	4
Host-Based Security & Auditing	Course	4
Network Intrusion Detection with Snort	Course	5
Open Source Intelligence (OSINT) & Passive Recon	Course	4
Nmap Host Discovery & Port Scanning	Course	5
Nmap Fingerprinting & The Scripting Engine	Course	5
Vulnerability Assessment & Management	Course	4
Web Recon & Intercepting Proxies	Course	5
Injection Vulnerabilities	Course	5
Client-Side Attacks & Authentication	Course	5
Server-Side Web Attacks	Course	4

Course	Type	Labs
Metasploit Framework Fundamentals	Course	5
Meterpreter & Post-Exploitation Operations	Course	4
Lateral Movement & Pivoting	Course	4
Linux Privilege Escalation	Course	5
Cryptography Essentials	Course	5
Offline Password Cracking	Course	5
Digital Forensics Basics	Course	4
Memory Forensics Basics	Course	4
Malware Analysis Basics	Course	4
Python for Security Operations	Course	4
Building Custom Security Tools	Course	4
CompTIA Network+ Certification Training Labs	Course	20
CompTIA A+ Certification Training Labs	Course	12
CompTIA Security+ Certification Training Labs	Course	14
Hydra Cybersecurity Attack Labs	Course	18
30 Days of Cybersecurity	Course	30
Kali Server Exploitation in Action	Course	20
Privilege Escalation Techniques on Linux	Course	10
Web Vulnerability Mastery	Course	8
Nmap Scanning and Telnet Access	Project	2
FTP Enumeration and Anonymous Access	Project	2
Reverse Shell to Control Multiple Targets	Project	1
Investigating a Website Backup Leak	Project	2
Testing an Invoice API for Cross-Account Access	Project	2
Responding to a Leaked API Key	Project	3
Securing a Public Object Storage Bucket	Project	3
Stopping SQL Injection in a Product Search	Project	2
Fixing a Password Reset Flow	Project	2
Repairing a CI Script Injection	Project	2
Protecting an Image Fetcher from SSRF	Project	3
Securing a Redis-Backed Application	Project	3
Removing Excessive Permissions from a Container	Project	3
Repairing a Broken HTTPS Deployment	Project	2
Closing an Exposed Database Port	Project	2
Removing a Process That Keeps Coming Back	Project	2
Recovering a Service from a Tampered Backup	Project	2
Detecting Unauthorized Uploads with Suricata	Project	3
Restricting an AI Assistant's Tool Permissions	Project	3
SOC Foundations Review	Project	3
External Attack Surface Assessment	Project	3
Web Application Breach Simulation	Project	3
Internal Compromise And Privilege Escalation	Project	3
Secret Recovery And Password Audit	Project	3
Incident Response And Malware Triage	Project	3
Python Security Automation Capstone	Project	3

Course	Type	Labs
Getting a Pop-Up Event Network Ready	Project	3
Making a Photo Booth Easy to Find on the Network	Project	2
Separating Visitor and Staff Devices	Project	3
HTTP Enumeration and Directory Traversal	Project	2
RDP Enumeration and Weak Password Access	Project	2
Rsync Enumeration and Anonymous Sync	Project	2
SMB Enumeration and Guest Access	Project	2
SSH Enumeration and Key-based Access	Project	2
Telnet Brute Force and Weak Credentials	Project	2
Choosing Network Links for a Live Event	Project	3
Connecting Two Festival Areas	Project	3
Making an Event Guide Work over IPv6	Project	2
Moving a Community Site to a New Address	Project	3
Auditing Password Reuse After a Portal Leak	Project	3
Finding What Makes an Event Page Slow	Project	3
Checking Guest and Staff Network Access	Project	2
Finding the Live Workshop Service	Project	2
Reviewing Network Changes After a Server Update	Project	2
Finding Devices with Default Passwords	Project	2
Verifying Web Login Results	Project	2

Cloud

Course	Type	Labs
AWS Foundations for Beginners	Course	8
AWS Resource Management for Beginners	Course	5
AWS S3 for Beginners	Course	7
AWS IAM for Beginners	Course	6
AWS VPC for Beginners	Course	7
AWS EC2 and EBS for Beginners	Course	7
AWS Load Balancing and Auto Scaling	Course	5
AWS RDS for Beginners	Course	6
AWS Application Security for Beginners	Course	6
AWS Monitoring and Auditing for Beginners	Course	6
AWS CloudFormation for Beginners	Course	6
AWS DynamoDB for Beginners	Course	6
AWS Lambda for Beginners	Course	6
AWS API Gateway and Cognito for Beginners	Course	6
AWS SQS and SNS for Beginners	Course	6
AWS EventBridge and Step Functions for Beginners	Course	6
AWS DNS and Content Delivery	Course	5
AWS Containers for Beginners	Course	6
AWS EFS for Beginners	Course	4
AWS ElastiCache for Beginners	Course	4
AWS Athena and Glue for Beginners	Course	5
AWS Bedrock for Beginners	Course	4

Course	Type	Labs
Cloudflare Workers for Beginners	Course	12
Cloudflare Workers KV for Beginners	Course	6
Cloudflare D1 for Beginners	Course	8
Cloudflare R2 for Beginners	Course	9
Cloudflare Workers AI for Beginners	Course	7
Cloudflare Vectorize for Beginners	Course	6
Cloudflare AI Gateway for Beginners	Course	6
Cloudflare Durable Objects for Beginners	Course	8
Cloudflare Agents SDK for Beginners	Course	9
Build and Operate a Web Application with AWS	Project	3
Build and Operate a Serverless Application with AWS	Project	3
Deliver and Recover a Container Application with AWS	Project	3
Build and Operate a Cloudflare API	Project	3
Build a Data API with Cloudflare Workers, KV, D1, and R2	Project	3
Build a RAG AI Agent with Cloudflare	Project	3

Programming

Course	Type	Labs
Quick Start with Python	Course	10
Python for Beginners	Course	30
Python Cheatsheet	Course	25
Python Practice Challenges	Course	100
Golang for Beginners	Course	44
Rust for Beginners	Course	40
Build Your First Rust CLI	Course	6
Java for Beginners	Course	14
Java Programming Exercises	Course	239
C Programming for Beginners	Course	16
C++ Programming for Beginners	Course	22
Quick Start with OpenCV	Course	14
Quick Start with C++	Course	10
Building Flappy Bird Using C	Project	1
Creating a Simple Docker Container in C++	Project	1
ASCII Art Animation With OpenCV	Project	1
Gravitational Simulation of Earth and Super Jupiter	Project	1
COVID-19 Data Analysis with Python	Project	1
Snake Game Using Python and Pygame	Project	1
Classic Pong Game Using Python and Pygame	Project	1
Create a GUI Calculator With Python	Project	1
Image Viewer Using Python and Tkinter	Project	1
Linux System Monitor Using Tkinter	Project	1
QR Code Generator Using Python	Project	1
Stopwatch Using Python and Tkinter	Project	1
Building a Tic-Tac-Toe Using Pygame	Project	1
Racing Game Using Pygame	Project	1

Programming

Continued

Course	Type	Labs
Building a REST API in Flask With SQLite	Project	1
Building a Network Scanner in Python	Project	1
Build Flappy Bird Using Pygame	Project	1
Build Maze Game Using Pygame	Project	1
FTP Weak Password Scanner Using Python	Project	1
Developing a Simple Online Chat Room Using Flask	Project	1
Data Cleaning and Purification with Python	Project	1
Development of Golang Caching Component	Project	1
Configuring With YAML Files	Project	1
Making a Simple Calculator Using C	Project	1
Creating a Gomoku Game in C	Project	1
Creating a Snake Game in C	Project	1
File Type Statistics Using C	Project	1
Typing Practice Program Using C	Project	1
Creating a 2048 Game in C	Project	1
Creating a Code Rain in C Using Ncurses	Project	1
Creating a Simple Tic-Tac-Toe Game in C	Project	1
Create a Simple Stopwatch App Using GTK	Project	1
Creating a Simple Clock Animation Using OpenGL	Project	1
Creating a Dynamic Heart Animation With C	Project	1
Implementing Callback Functions in C	Project	1
Synchronize Multithreaded Printing with Mutex	Project	1
Parsing Command Line Arguments in C	Project	1
Implementing Doubly Linked List in C	Project	1
Implementing Queue Data Structure in C	Project	1
Sorting Courses with Bubble Sort	Project	1
Creating the Solar System in OpenGL	Project	1
Build a Simple Translator Using Google Translate API	Project	1

Databases

Course	Type	Labs
MySQL for Beginners	Course	17
PostgreSQL for Beginners	Course	10
Redis for Beginners	Course	10
SQLite for Beginners	Course	10
MongoDB for Beginners	Course	31
Advanced MySQL Practical Labs	Course	20
Advanced PostgreSQL Practical Labs	Course	20
Redis Intermediate to Advanced	Course	12
SQLite Intermediate to Advanced	Course	17
Manage MySQL User Permissions	Project	1
A Simple Course Database	Project	1
Managing Database Indexes in MySQL	Project	1
Add Student Information to Table	Project	1
Add Student Personal Information	Project	1

Course	Type	Labs
Biology Course Alumni Search	Project	1
Comprehensive Challenge of This Section	Project	1
Creating Secure MySQL User Accounts	Project	1
MySQL Database Management Fundamentals	Project	1
Accessing MySQL Database and SQL Querying	Project	1
Creating and Updating Database Views	Project	1

Web Development & Data Science

Course	Type	Labs
NumPy for Beginners	Course	8
Pandas for Beginners	Course	9
Matplotlib for Beginners	Course	8
Scikit-learn for Beginners	Course	7
Hadoop for Beginners	Course	12
Hive for Beginners	Course	10
Apache Kafka for Beginners	Course	10
Apache Spark for Beginners	Course	13
HTML for Beginners	Course	8
CSS for Beginners	Course	9
JavaScript for Beginners	Course	10
React for Beginners	Course	9
Web Interactive Challenges	Course	130
Build a Simple URL Shortener With Flask and MySQL	Project	1
Classifying Iris Using SVM	Project	1
Credit Card Holder Risk Prediction	Project	1
Build a Tic-Tac-Toe Web App	Project	1
Creating a Whack-a-Mole Web Game	Project	1
Create a Notes App Using React	Project	1
Creating a Task Timer Web App	Project	1
Building a Christmas Wish List Builder in React	Project	1
Building a React Drag-and-Drop Puzzle Game	Project	1