

Software Testing & QA Automation

Build reliable QA automation across API and UI layers with Playwright, framework engineering, CI/CD and release-readiness evidence.

**8 weeks**

DURATION

79 hours

GUIDED LEARNING

2 projects

PORTFOLIO

ABOUT THE ACADEMY

Practical learning. Work you can demonstrate.

Brightnest AI Academy brings live instruction, guided practice and career preparation together for individuals and teams.

23

FOCUSED COURSES

6

FLAGSHIP PROGRAMMES

Noida

ACADEMY LOCATION

Our approach

1

Learn

Understand concepts through live instruction and current examples.

2

Build

Apply learning through labs, assignments and guided projects.

3

Explain

Document decisions, results, trade-offs and limitations.

4

Prepare

Connect completed work with CVs, interviews and workplace conversations.

PEOPLE BEHIND THE ACADEMY

Meet Ranjeet Kumar



ACADEMY ADVISER

Ranjeet Kumar

Innovation & Growth Leader

15+ years

Experience in data, artificial intelligence and machine learning leadership.

Areas of expertise

- Data science and machine learning solution leadership
- AI product strategy and scalable data platforms
- Technology team leadership and mentorship
- Practical AI and data adoption for business transformation

Education

Master of Information Systems, Anna University, Chennai
Bachelor of Computer Science Engineering

COURSE OVERVIEW

Build your next set of skills

Create reliable automated test systems across UI, API and CI/CD workflows. Progress from Software Quality and Testing Foundations to QA Automation Capstone through guided labs, assessed projects, and portfolio evidence.

Who this is for

Manual testers, developers and QA professionals moving into modern automation engineering.

Before you begin

Learners should have a basic understanding of the software development lifecycle. Coding experience is helpful for the automation modules.

Quality engineering requires a deliberate test strategy, reliable automation, API and UI coverage, useful diagnostics, and maintainable execution in CI/CD.

LEARNING OUTCOMES

What you will be able to do

01

Create a risk-based test strategy and traceability matrix for a sample product.

02

Design high-value test cases and run a structured exploratory session.

03

Create an automated API test suite for a REST service including auth and negative cases.

04

Automate critical user journeys across Chromium/Firefox/WebKit with stable locators and traces.

05

Refactor tests into a scalable automation framework with reusable fixtures and reports.

06

Run automation in CI with reports, artifacts, thresholds and failure diagnostics.

07

Build a complete QA automation solution for a web product and present release-readiness evidence.



CURRICULUM

Course curriculum

8 modules · 8 weeks · 79 hours of guided learning

01 Software Quality and Testing Foundations

5 hours

TOPICS

SDLC/STLC · Verification/validation · Test levels/types · Risk-based testing · Test pyramid · Defect lifecycle · Acceptance criteria · Quality strategy

PRACTICAL WORK

Create a risk-based test strategy and traceability matrix for a sample product.

Tools: Test management templates, Jira concepts

Assessment: Quality strategy review

Portfolio evidence: Professional test plan

02 Test Design and Exploratory Testing

8 hours

TOPICS

Equivalence partitioning · Boundary values · Decision tables · State transitions · Pairwise concepts · Exploratory charters · Usability · Defect reporting

PRACTICAL WORK

Design high-value test cases and run a structured exploratory session.

Tools: Test case tools/spreadsheets

Assessment: Test-design assessment

Portfolio evidence: Test case portfolio



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Course curriculum

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03 API Testing and Contract Validation

10 hours

TOPICS

HTTP/REST · Status codes · Headers · Auth · JSON · Positive/negative tests · Schema validation
· Collections · Data-driven testing · Contract concepts

PRACTICAL WORK

Create an automated API test suite for a REST service including auth and negative cases.

Tools: Postman/Newman or Playwright API, curl

Assessment: API practical

Portfolio evidence: API automation suite

04 UI Automation with Playwright

12 hours

TOPICS

Locators · Assertions · Fixtures · Page objects/components · Waits · Browser contexts ·
Cross-browser · Screenshots/traces · Debugging · Test isolation

PRACTICAL WORK

Automate critical user journeys across Chromium/Firefox/WebKit with stable locators and traces.

Tools: Playwright, TypeScript/JavaScript or Python

Assessment: UI automation lab

Portfolio evidence: Cross-browser E2E suite

CURRICULUM

Course curriculum

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05 Automation Framework Engineering

10 hours

TOPICS

Framework structure · Configuration · Test data · Fixtures · Reusable helpers · Tagging · Parallelism · Retries · Reporting · Maintainability · Coding standards

PRACTICAL WORK

Refactor tests into a scalable automation framework with reusable fixtures and reports.

Tools: Playwright/pytest/JUnit ecosystem

Assessment: Framework code review

Portfolio evidence: Reusable automation framework

06 Database, Integration and Data Quality Testing

8 hours

TOPICS

SQL validation · ETL/data reconciliation · Service integration · Mocks/stubs concepts · Queues/events · Data integrity · Migration testing

PRACTICAL WORK

Validate data flow across API and database layers with automated checks.

Tools: SQL, API tools, Test framework

Assessment: Integration lab

Portfolio evidence: End-to-end data validation suite



CURRICULUM

Course curriculum

8 modules · 8 weeks · 79 hours of guided learning

07 CI/CD, Quality Gates and Non-Functional Testing

10 hours

TOPICS

Pipeline execution · Parallel tests · Artifacts · Flaky test handling · Coverage concepts · Performance basics · Security testing awareness · Accessibility testing

PRACTICAL WORK

Run automation in CI with reports, artifacts, thresholds and failure diagnostics.

Tools: GitHub Actions/GitLab CI, Playwright reports, Performance tool concepts

Assessment: CI quality gate

Portfolio evidence: Automated quality pipeline

08 QA Automation Capstone

16 hours

TOPICS

Test strategy · API/UI automation · Framework · CI · Reporting · Defect analysis · Quality metrics · Executive summary · Maintainability

PRACTICAL WORK

Build a complete QA automation solution for a web product and present release-readiness evidence.

Tools: Playwright, API tooling, SQL, CI/CD

Assessment: Capstone and review

Portfolio evidence: QA automation portfolio repository

APPLIED PORTFOLIO

Projects you will build

Two portfolio projects supported by guided module work.

PORTFOLIO PROJECT 1

Release-Ready QA Automation Framework

Automate API and UI critical paths with Playwright, data utilities, reporting and CI.

DELIVERABLES

Framework · Tests · Reports · Pipeline · Quality summary

PORTFOLIO PROJECT 2

E-Commerce Test Automation

Build end-to-end regression automation for login, search, checkout and APIs.

DELIVERABLES

E2E suite · API suite · Defect examples · Release-readiness dashboard

LEARNING EXPERIENCE

Learn, practise and present

- Live instructor-led sessions that connect concepts to real workplace decisions.
- Guided labs and workshops in every module.
- Assignments, checkpoints and practical feedback.
- Portfolio documentation, demonstrations and capstone review.
- Access to recordings and LMS resources according to the published batch policy.
- Career preparation based on completed work and target roles.

Tools you will work with

Test management templates · Jira concepts · Test case tools · Spreadsheets · Postman · Newman · Playwright API · curl · Playwright · TypeScript · JavaScript · Python · pytest · JUnit ecosystem · SQL · API tools

CAREER PREPARATION

Build confidence for interviews

A structured process to connect your learning with your next career step.

01**Role clarity**

Identify roles that fit your background, interests and current skills.

02**Profile readiness**

Review your CV, LinkedIn, GitHub and project summaries.

03**Project proof**

Prepare to demonstrate completed work and explain your decisions.

04**Interview practice**

Practise technical questions, project walkthroughs and interviews.

05**Opportunity updates**

Receive relevant job openings and employer requirements, subject to availability and learner readiness.

Career support helps you prepare. Employment outcomes depend on experience, project quality, interview readiness and market conditions.

LEARNER JOURNEYS

Companies where our learners have been hired

Across the Brightnest AI Academy learner community



Learner employment history across the academy; not a placement guarantee for this course. Names and logos identify employers; they do not imply endorsement or a hiring partnership.

BEFORE YOU ENROL

Your questions, answered

Is the QA Automation course suitable for beginners?

This is an intermediate-level course. Learners should have a basic understanding of the software development lifecycle. Coding experience is helpful for the automation modules.

What will I build during the course?

You will complete guided labs in every module and build two portfolio projects: Release-Ready QA Automation Framework and E-Commerce Test Automation. Deliverables include working files or code, documentation, testing or evaluation evidence, and a final presentation.

Which tools and platforms are covered?

Key tools include Test management templates, Jira concepts, Test case tools, spreadsheets, Postman, Newman, Playwright API, and curl. Additional platforms are introduced in relevant modules through practical tasks, and the toolset may evolve as industry practice changes.

How long does the course take?

The course includes approximately 79 guided learning hours across 8 modules, delivered over 8 weeks.

Which career paths can this course support?

The curriculum supports the development of skills relevant to roles such as QA Automation Engineer, Software Test Engineer and SDET. Career outcomes depend on prior experience, project quality, interview readiness and market conditions; employment is not guaranteed.

BEFORE YOU ENROL

Your questions, continued

Will I receive mentor and career support?

The course includes live instruction, lab support, assignment feedback, project reviews and career preparation covering portfolio development, CV writing, LinkedIn profile improvement, and interview guidance.

FEES & ADMISSIONS

Plan your next step

COURSE FEE

INR 35,000 + GST

EMI and easy instalments available

Duration	8 weeks
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Level	Intermediate
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Learning format	Live mentor-led learning
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Batch starts	Expected Saturday / Sunday starts
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Check the live Batches page for the next expected weekend. Confirm the exact date, class times and availability with admissions.

Book a free demo class >

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