



RV Educational institutions

RV Institute of Technology and Management ®

Bangalore – 560076

Department of Information Science Engineering

Event Name	Hands-On Workshop On DevOps and Software Testing with Selenium
Date	11 th to 13 th JULY 2024(3 Days)
Target Audience	6 th Sem ISE Students
Venue	6 th Floor MCA Seminar Hall, RVITM

Objective of the Program:

Selenium is a powerful and widely-used open-source tool for automating web browsers. This workshop is designed to equip students with the practical skills and knowledge to effectively leverage Selenium for automating web application testing.

- To gain hands-on experience in automation testing using Selenium and DevOps Concepts
- Understand Types of Testing, Functional Testing: Validating that the software functions correctly according to specifications. Non-functional Testing: Checking aspects like performance, security, usability, and reliability. Regression Testing: Ensuring that recent code changes haven't adversely affected existing functionalities.
- Develop Automation in Test Cases: Automating repetitive and critical test cases to increase test coverage and efficiency. Create a Selenium with Java project in Eclipse.
- Understanding DevOps: DevOps aims to increase the speed, efficiency, and quality of software development and delivery by fostering better collaboration and automation between development and operations teams.
- Docker, containerization, docker file/docker images, Docker basic commands

Day 1:11.07.2024

Inauguration session :

The program was started with the Inauguration session. Dr. Latha C A, HoD, Department of ISE started the session by welcoming the chief guest. Prof. Swathi Darla, Assistant Professor, Dept of ISE, RVITM, did the workshop's welcome address. Prithvi P Shenoy 4th Sem, Department of ISE, RVITM has introduced the chief guest to the session. The Chief guest of the session Mr. Joseph Teles, Tech Lead. VTech Technology Solutions,

Bangalore has set the right tone for the program by delivering an Inaugural address to the participants and outlining the importance of automation testing in industries.



Day:1

Topics:

The following titles are covered in the session

- What is Selenium?
- Selenium components: WebDriver, IDE, Grid
- Benefits of Selenium automation
- Prerequisites for Selenium testing.
- Installation of JDK 1.8/JRE/JVM ,Java Installation/Eclipse/Maven and
- Selenium Environment Setup

- Downloading and configuring Selenium WebDriver
- Creating a basic Selenium project



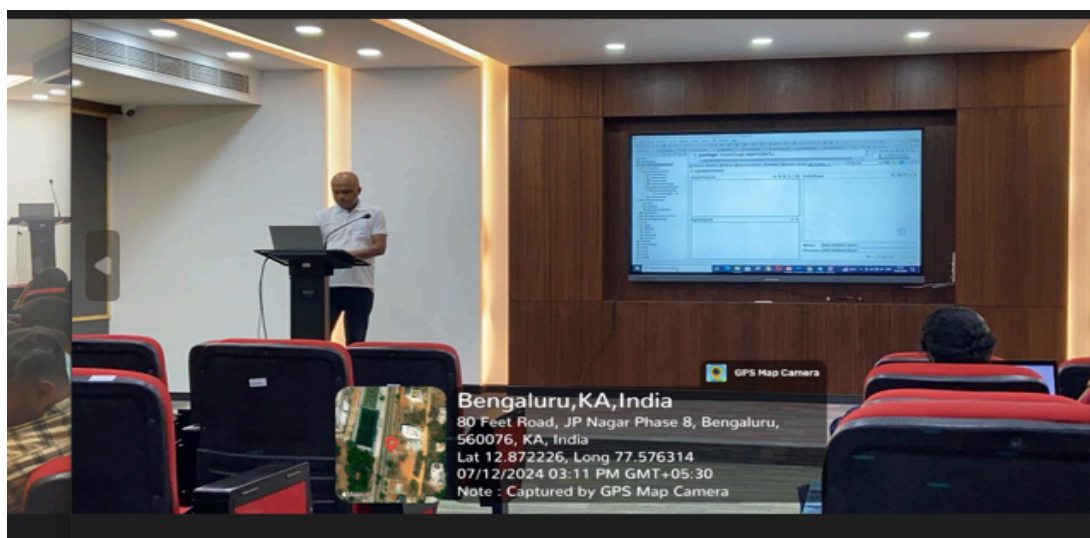
Day 2(12.07.2024): Topics

Selenium Grid:

- Introduction to Selenium Grid for distributed testing
- Setting up a Selenium Grid hub and nodes
- Running test cases on multiple machines simultaneously

Advanced Selenium Topics:

- Handling dynamic elements and AJAX
- Using headless browsers (like PhantomJS or Headless Chrome)
- Integrating Selenium with other tools (TestNG, JUnit, Cucumber, etc.)
- Debugging and troubleshooting Selenium scripts



Real-world Use Cases:

- Demonstrating Selenium for various automation scenarios (e.g., functional testing, regression testing, performance testing)
- Best practices and tips for effective Selenium automation

Day 3(13.07.2024): Topics

Additional Topics (workshop focus):

- Mobile testing with Appium
- API testing with Selenium
- Continuous integration and continuous delivery (CI/CD) with Selenium
- Feature flags and A/B testing
- DevOps Culture and Practices
- Collaboration and communication: Understanding the importance of effective communication and collaboration between development, testing, and operations teams.
- DevOps mindset: Exploring the cultural shift towards a DevOps mindset, which emphasizes shared responsibility, automation, and continuous improvement.
- Monitoring and observability: Discussing the use of monitoring tools to track application performance, identify issues, and enable proactive troubleshooting.



Containerization and Orchestration

- Docker and containerization basics
- Docker Compose and Kubernetes
- Microservices architecture

Deployment and Release Management

- Deployment strategies
- Release management processes



Summary:

A DevOps and testing workshop typically combines theoretical knowledge with hands-on exercises and practical demonstrations. Students learned how to set up CI/CD pipelines, write automated tests, and integrate testing into their development processes. By attending such a workshop, students can gain valuable skills and insights to improve their software development practices and contribute to successful DevOps initiatives.

Coordinators Signature

HOD's Signature

