
Experiment No. - 4

Student Name: Vivek Kumar

Branch: BE-CSE(LEET)

Semester: 6th

Subject Name: Software Testing Lab

UID: 21BCS8129

Section/Group: 20BCS-ST-801/B

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➤ **Aim/Overview of the practical:**

Explore different tools for automations testing.

➤ **Theory:** Test automation can't succeed without the help of effective test automation tools. As per the user behavior, test automation trends have changed a lot such as machine learning, and artificial intelligence providers' advanced techniques to test automation. It will be more beneficial to know which automation testing tools are the best as per these trends.

➤ **Requirement Analysis:** - Google Chrome, Online tools.

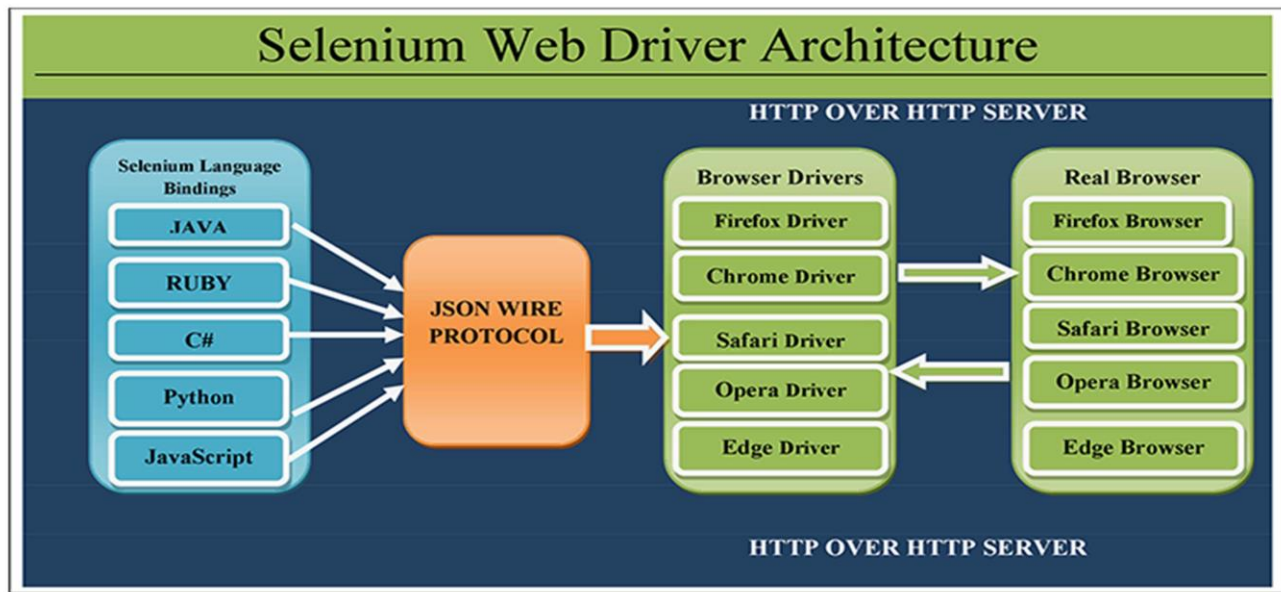
➤ **Hardware Requirement:** - Computer, Windows Power Supply.

➤ **Here's a list of the top 10 automation testing tools:**

1. Selenium
2. Appium
3. Katalon Studio
4. Cucumber
5. HPE Unified Functional Testing (UFT)
6. Tosca
7. TestComplete
8. Cypress
9. IBM Rational Functional Tester (RFT)
10. Karate

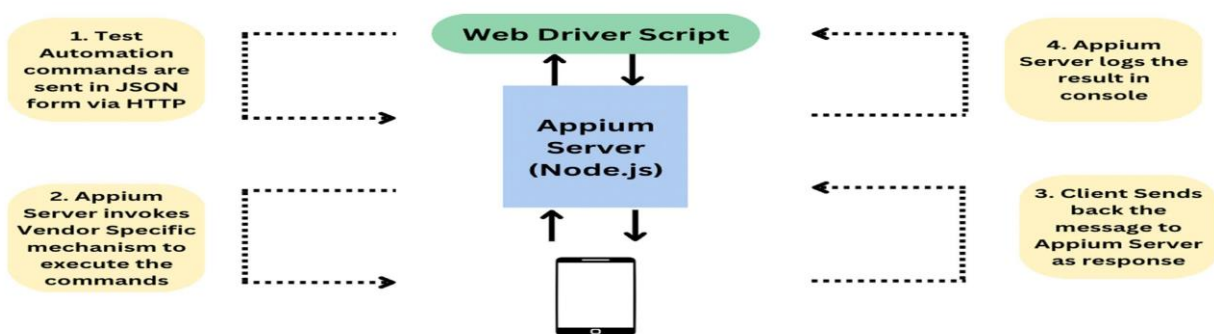
➤ **Selenium:**

The best free automation testing tools for web application testing. Selenium tool currently takes first place among all the automation testing tools. Selenium is among the most used automated testing tool for web applications. It is an open-source platform that is compatible with numerous browsers, operating systems, and programming languages. Selenium features detailed and advanced automation scripts, supports the execution of parallel tests, and integrates other software testing tools. As the best web testing tool, the main thing is the Selenium Framework, it will help you to make code maintenance easy.



➤ Appium:

If you search a mobile automation testing tools list then Appium will always be at the top. Appium is designed on a server, and the user gains access to its automation framework through vendors. Appium has a high compatibility rate, enabling it to automate different mobile apps in any language using any test framework. Appium features high compatibility, testing doesn't require recompiling or SDK tools and can run on mobile and computer operating systems using WebDriver protocols. With the appium studio, you can easily analyze, debug, and execute tests on real devices.

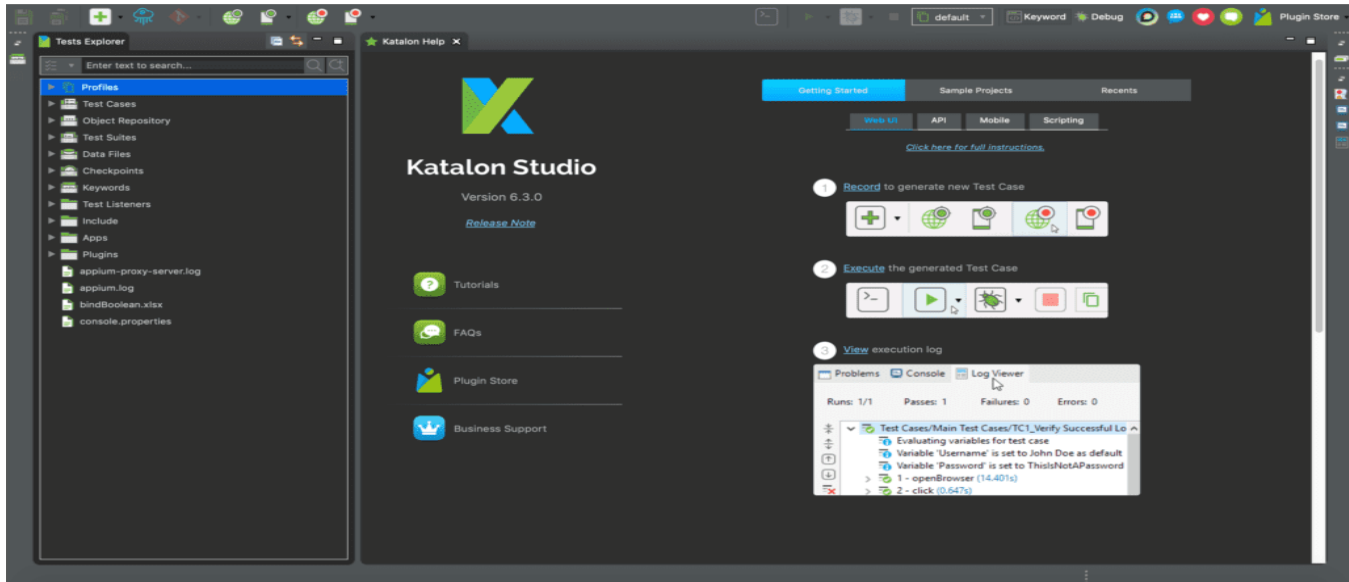


Architecture of the Appium Framework

➤ Katalon Studio:

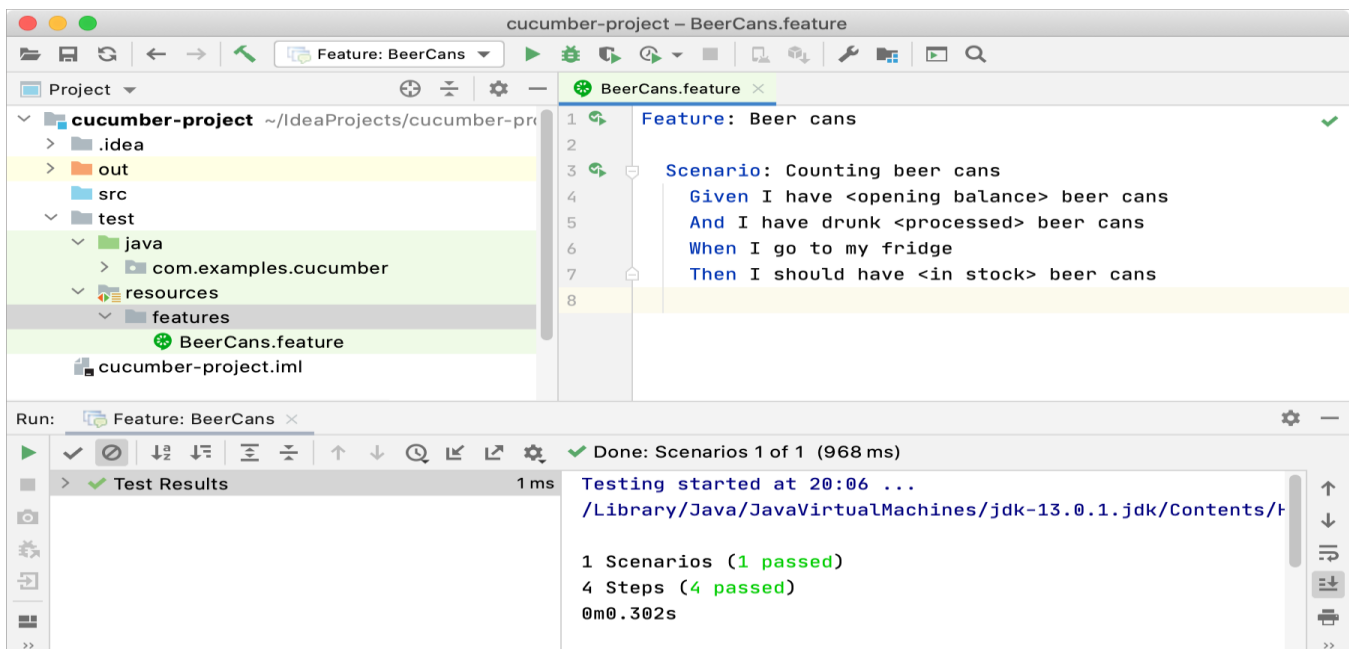
Studio can integrate with both Selenium and Appium. The automation testing tool can simplify the automation testing of API, web apps, and mobile applications. Katalon Studio also works with

other tools like JIRA, Git, Slack, and such. The main features include compatibility with Windows, Mac, and Linux, an easy user-friendly interface, and numerous keywords for building test cases.



➤ **Cucumber:**

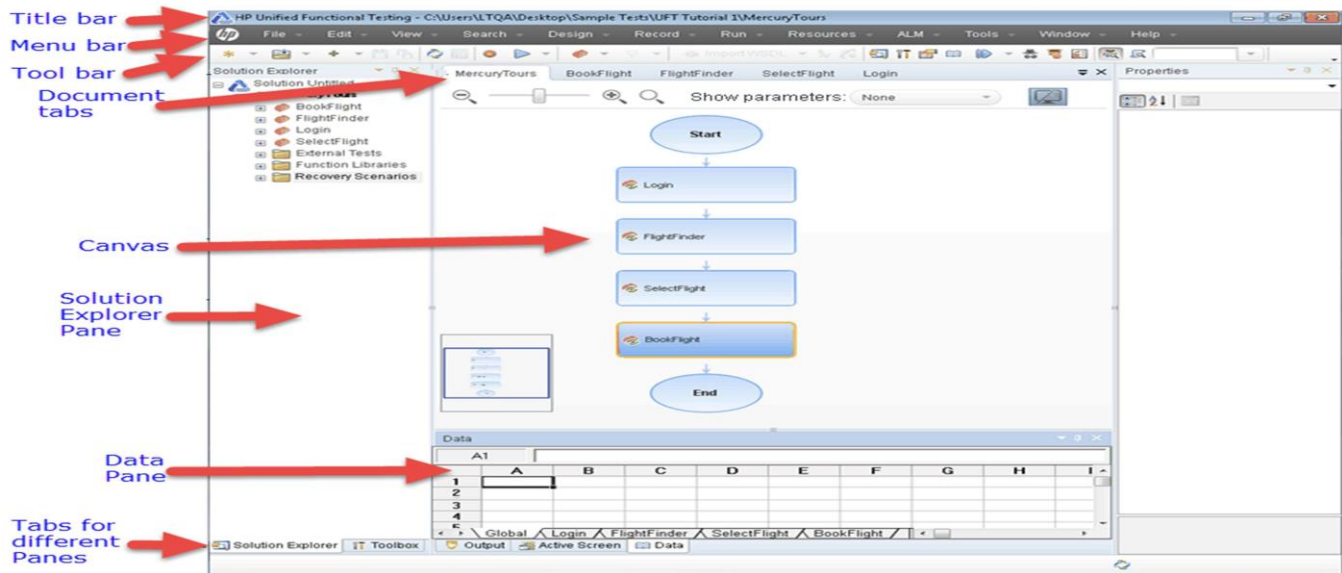
Cucumber is an open-source platform for Behavior Driven Development (BDD). It showcases an interesting clientele list including Canon and Paypal. Cucumber is designed to support only web access, focusing on enhanced user satisfaction. Major features include code compatibility with other automation frameworks, uses Gherkin code (which is in simple English), and supports various languages such as Ruby, Java, Groovy, etc.



➤ HPE Unified Functional Testing (UFT):

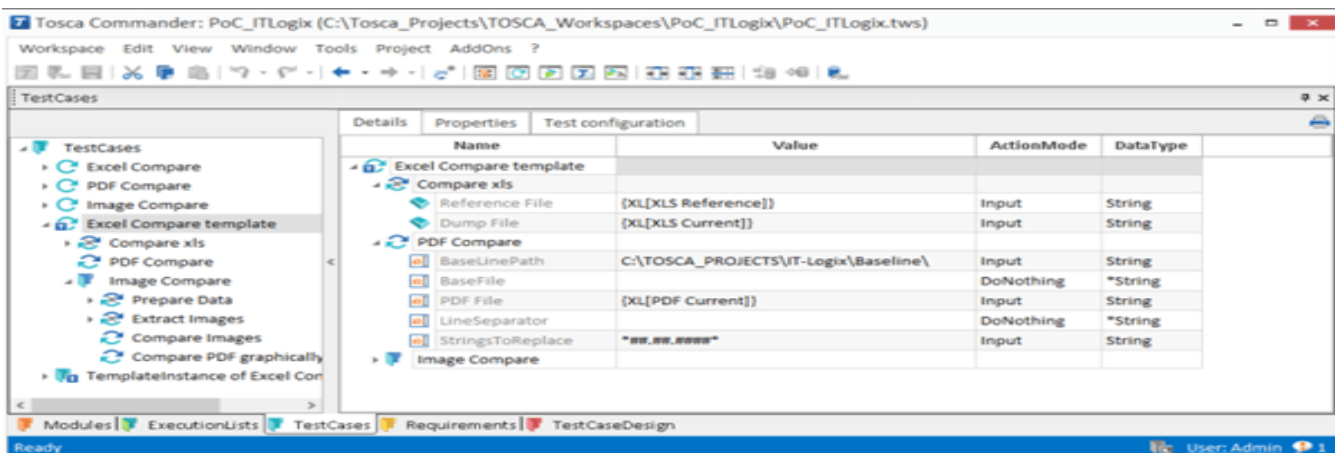
Previously known as QuickTest Professional (QTP), HPE Unified Functional Testing (UFT) is highly preferred among users for its cross-platform automation testing tools. It improves a central platform for developers and testers to improve the quality of results while optimizing expenditure. The UFT can automate numerous applications including Web, Desktop, Mobile, Oracle, Java, and SAP. The main features include scripting language is in VBScript, data-driven testing, and high compatibility across numerous browsers, platforms, and operating systems.

UFT window in case of GUI testing



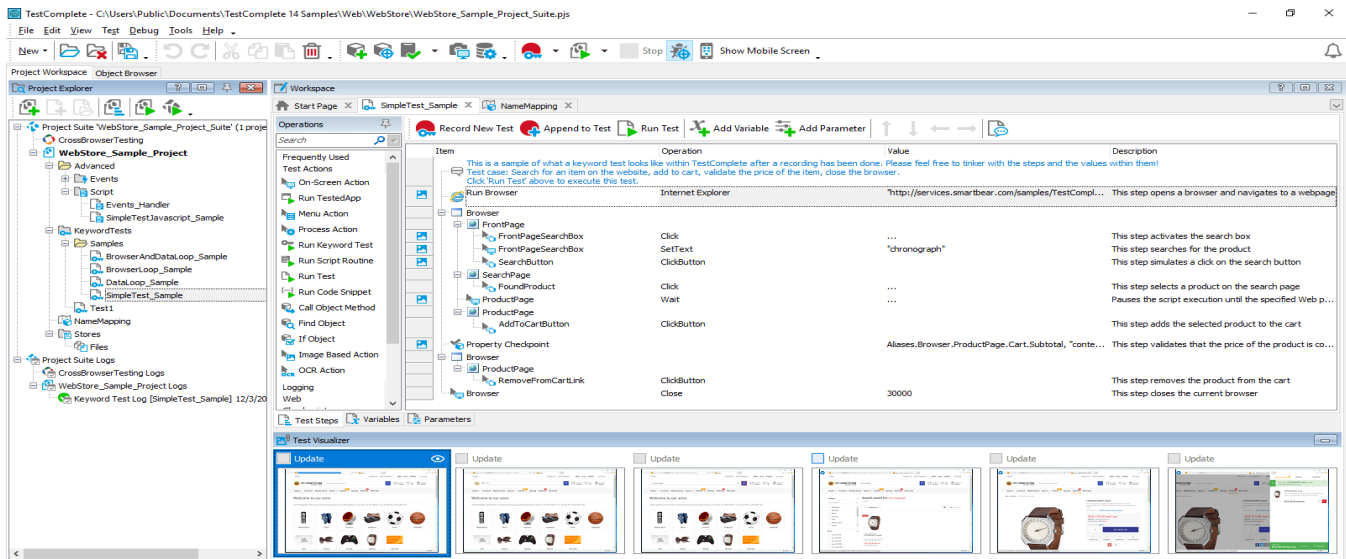
➤ Tosca:

Tosca is a test automation tool that is used to test the functionality of software applications. It is designed to help users automate the testing process and improve the quality of their software. Tosca offers a range of features and capabilities that make it a popular choice for test automation, including support for a wide variety of applications and technologies, a user-friendly interface, and the ability to create and execute tests across different platforms and environments.



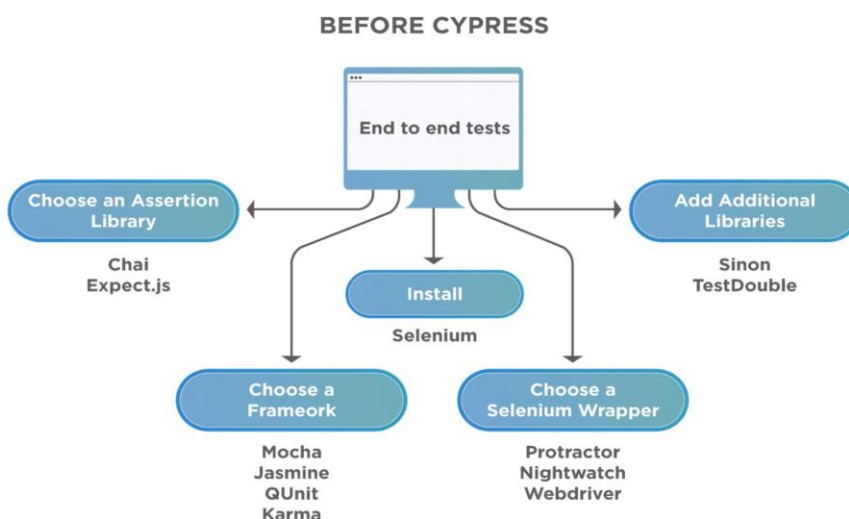
➤ TestComplete:

The final tool on the list is TestComplete. It is the best automation testing tool for desktop applications. TestComplete tool supports the testing of mobile, desktop, and web applications. It supports different scripting languages, keyword-driven testing, regression, and distributed testing. It also integrates well with SmartBear. Main features include reusable scripts, building blocks for scripts, and user-friendly recording and playback tools.



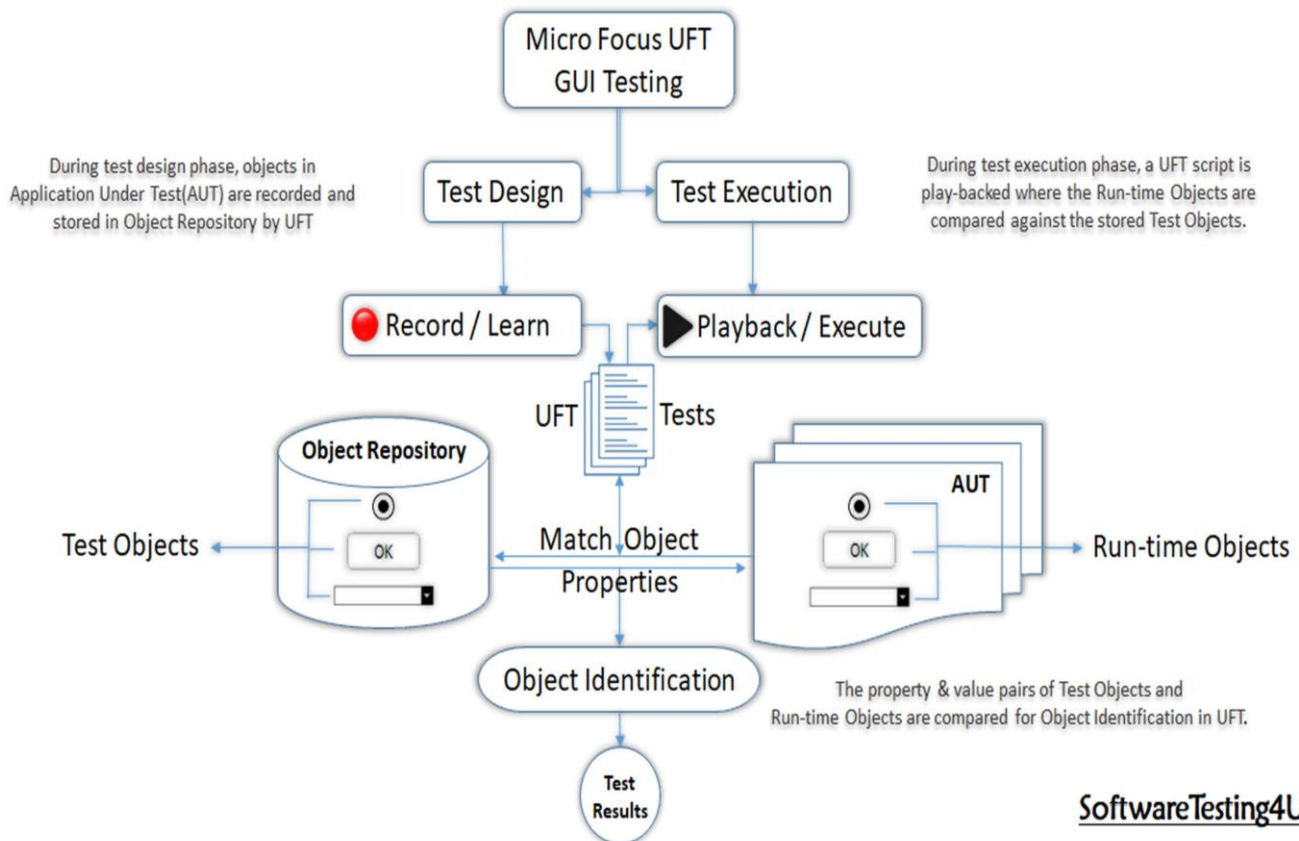
➤ Cypress:

Cypress is a modern, open-source test automation tool that is specifically designed for testing web applications. It is built on top of the JavaScript runtime environment, making it easy to use for developers who are familiar with JavaScript. Cypress is a highly popular test automation tool because of its many features and capabilities: Fast reliable testing, Real-time reloads, Automatic waiting, Time-travel debugger and Easy setup etc.



➤ **IBM Rational Functional Tester (RFT):**

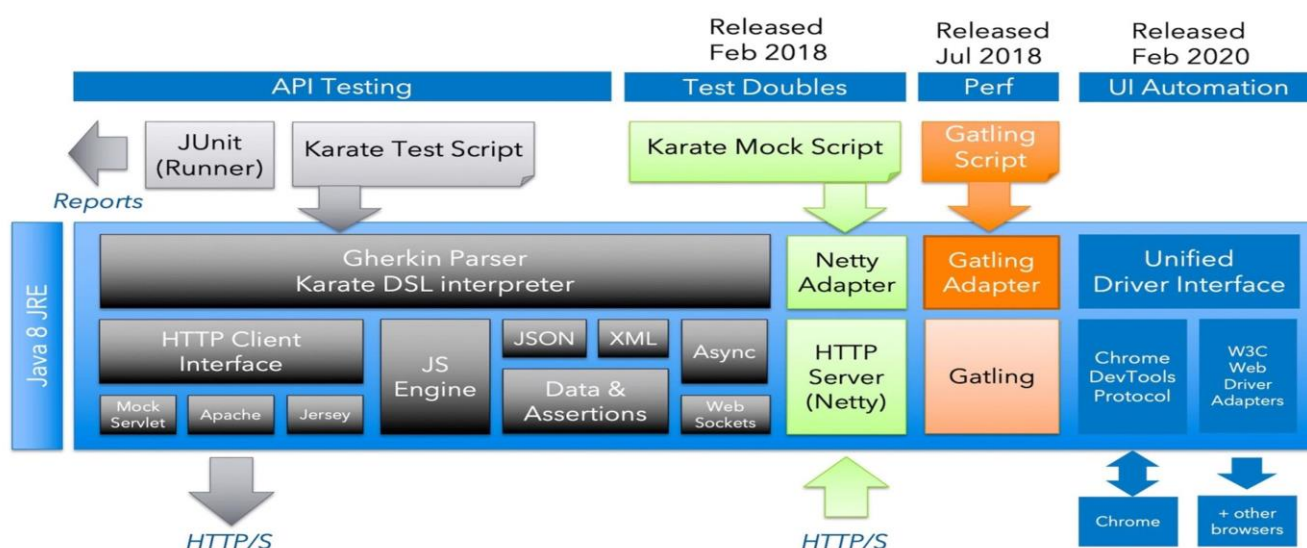
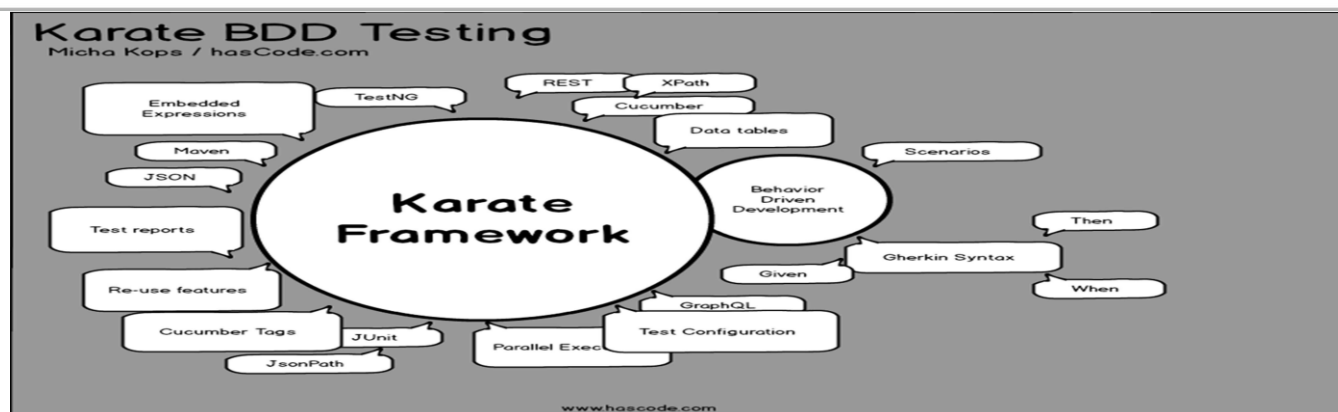
Rational Functional Tester (RFT) is designed by IBM as a commercial and best automation testing tool for 2022. RFT provides efficient solutions to automating tests for functionality, regression, GUI, and data-driven tests. It has high compatibility with different development frameworks such as Siebel, Java, Flex, Net, and SAP. Major features of RFT include supporting two scripting languages (Java and VB.Net), integrating with IBM Rational Quality Manager, and using natural language and application screenshots for the monitoring testing process.



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➤ **Karate:**

Karate is an open-source test automation tool for API testing. It is built on top of the Cucumber framework, which allows users to write tests in a human-readable language called Gherkin. Karate is designed to make it easy for users to create and maintain API tests, and it offers a range of features and capabilities that make it a popular choice for API testing, including Support for multiple protocols, Built-in assertion library, Easy to use, Integration with Cucumber and Cross-platform compatibility etc.



Evaluation Grid (To be created per the faculty's SOP and Assessment guidelines):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writing learning objectives/Outcomes. (To be submitted at the end of the day).		
2.	Post-Lab Quiz Result.		
3.	Student Engagement in Simulation/Demonstration/Performance and Controls/Pre-Lab Questions.		
	Signature of Faculty (with Date):	Total Marks Obtained:	