Selenium WebDriver

Selenium WebDriver:
Why, What & When?

The Golden Circle

What

What is Selenium?

Selenium is a UI automation framework to test web applications .

Why

Why Selenium?

Open Source and with market share of about 46.59%, Transparency, Integration with other tools

When

When to use?

Functional , Regression testing

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Opensource Browser Automation – Popular Tools

Selenium

Playwright
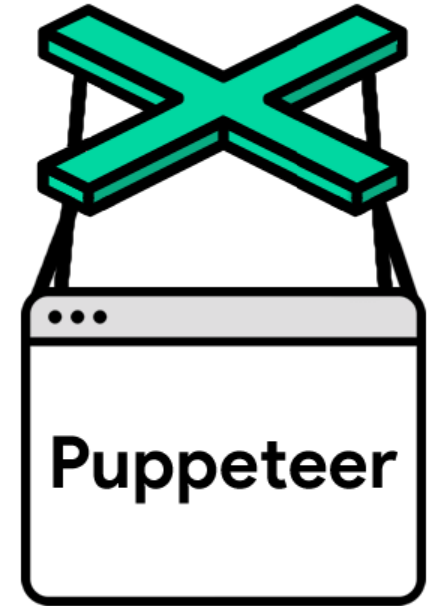
Cypress

Puppeteer

Tool – Usage across world
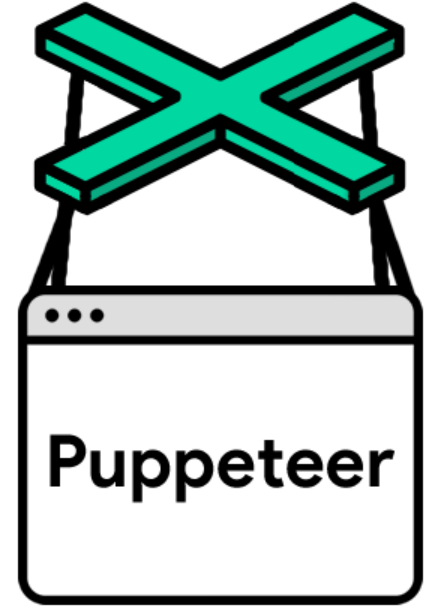
Selenium	Playwright	Cypress	Puppeteer
#1 – Max Downloads	Getting Popular	Decent Market Share	Developer Tool

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Tool – Scripting Languages

| Selenium	Playwright	Cypress	Puppeteer
Core Java, Python, C#, JavaScript, Ruby, Perl	Core Java, Python, C#, JavaScript	JavaScript	JavaScript

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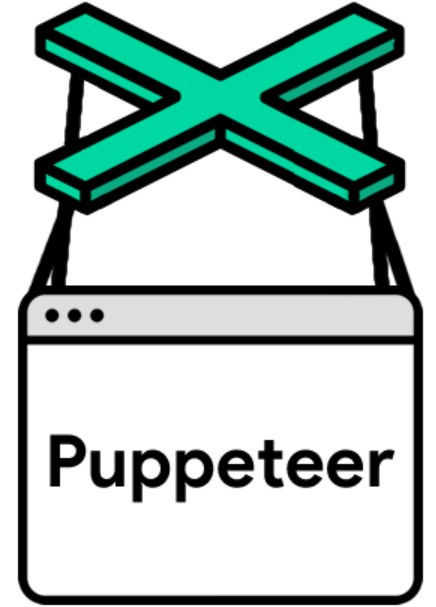
How Selenium emerged?

- 2004 - Jason Huggins was testing an internal application at Thoughtworks.

- That library eventually became Selenium Core, which underlies all the functionality of Selenium Remote Control (RC) and Selenium IDE.

- In 2006, Simon Stewart started work on a project – WebDriver. Google had long been a heavy user of Selenium, but testers had to work around the limitations of the product.

- Simon Stewart, the creator of WebDriver, in a joint email to the WebDriver and Selenium community on August 6, 2009.

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Selenium Components
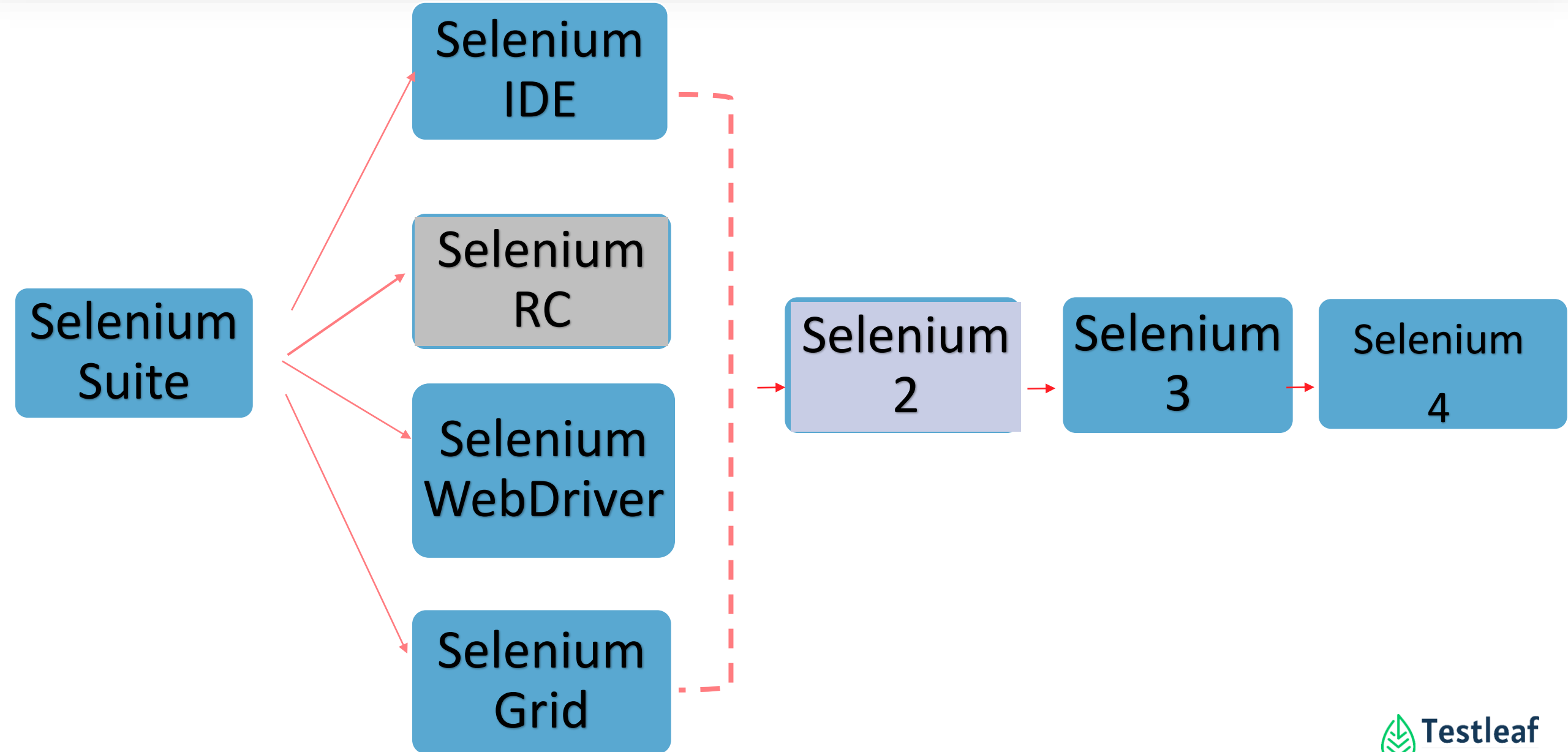
What Selenium can do?

Selenium can talk to any browser

Selenium support multiple OS

Selenium can work with all programming languages

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What Selenium cannot do?

❖ Selenium cannot talk to database-requires Java JDBC library

❖ Selenium will not automate desktop application- requires java library-Apache Poi

❖ Selenium will not automate Mobile application - Appium

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How Selenium talks to browser

Language Bindings

- Java
- C#
- Python
- JS

Request →

W3C Protocol

← **Response**

Browser Drivers

- ChromeDriver
- GeckoDriver
- EdgeDriver
- SafariDriver

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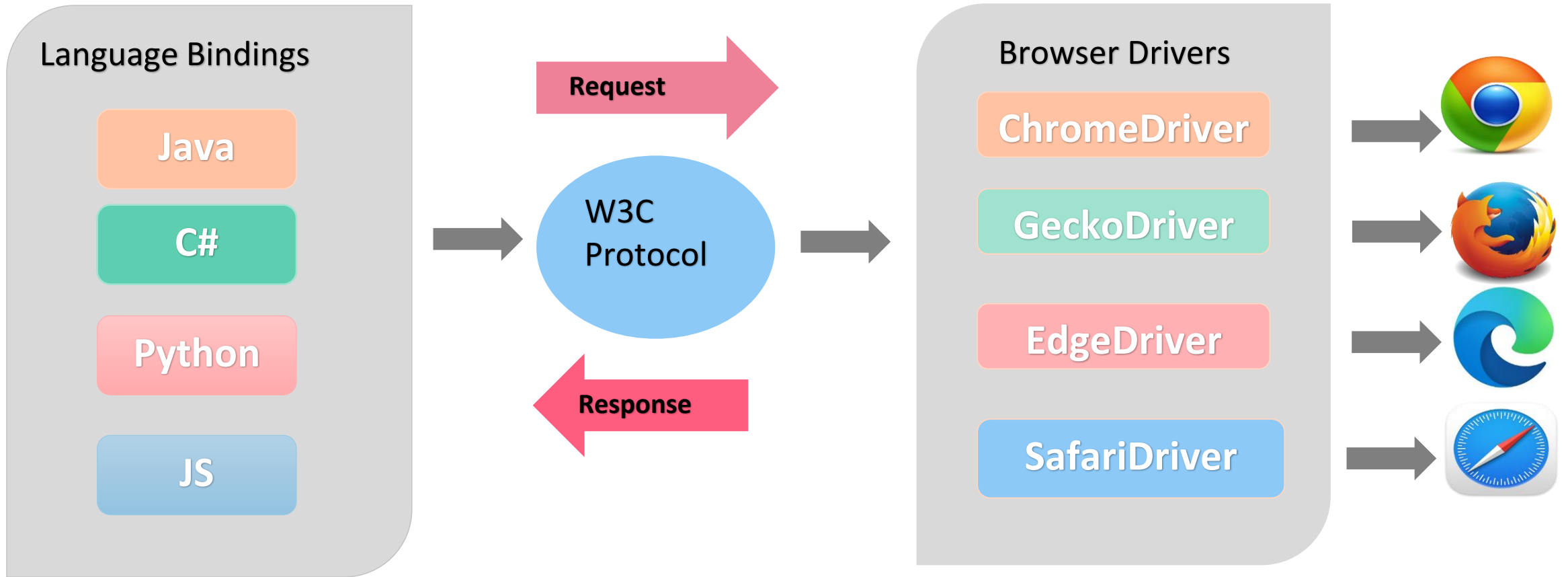
Pre requisite to launch browser

-Selenium dependency - pom.xml

```xml
<dependency>
<groupId>org.seleniumhq.selenium</groupId>
<artifactId>selenium-java</artifactId>
<version>4.6.0</version>
</dependency>
```

pom- project object model

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How to launch Application?

Step1 : Setup the driver

    Instantiate the brower driver

    ChromeDriver driver= new ChromeDriver(); (Chrome Browser)

    FirefoxDriver driver=new FirefoxDriver(); (Mozilla Browser)

Step 2: To Load Url

    Using get ()

    driver.get("https://www.google.com/");

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Summary

- Selenium automates only Web based application

- Selenium communicates through API(browser driver) with the Web browser

- Selenium supports multiple browsers, OS, Programming Language

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Classroom Exercise (Breakout)

1. Setup the driver

   Instantiate the brower driver

2. Load the Url

   https://www.facebook.com/login

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