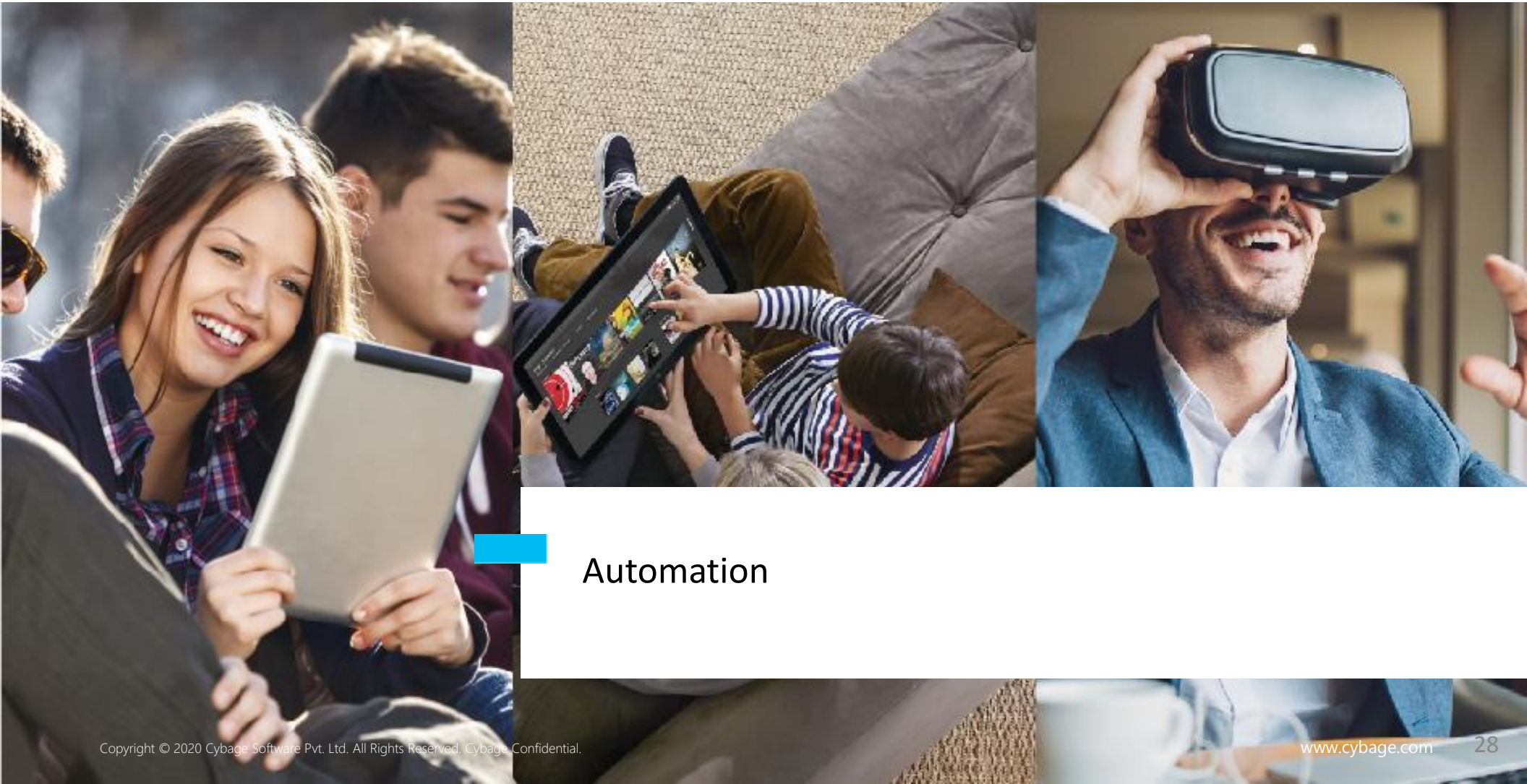
Automation Overview

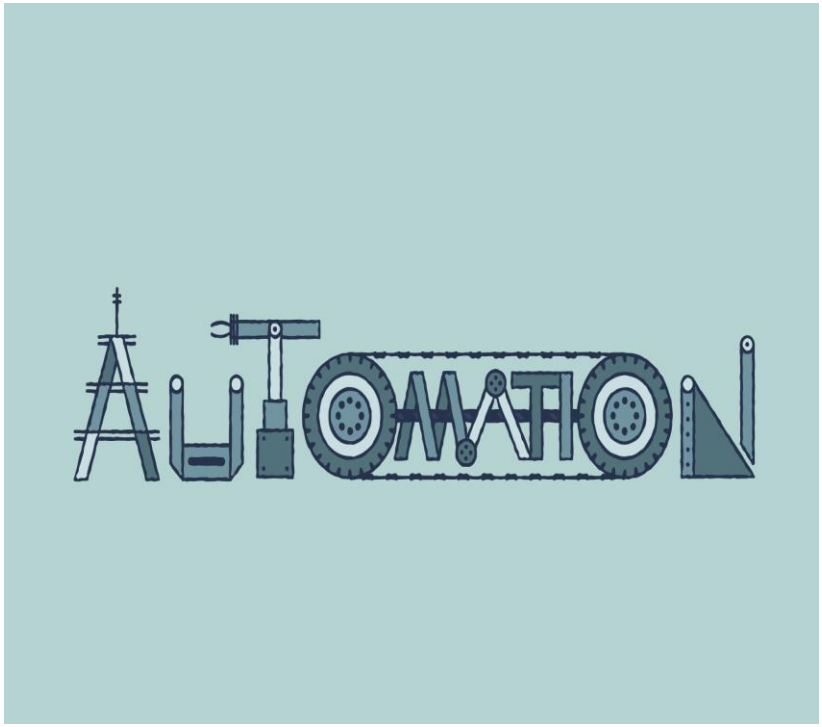
Agenda

- Automation
- Testing Types & Scope
- Automation Objectives
- Automation Frameworks
- Automation Capabilities
- Facts
- Q&A



Automation

What is Automation



Anything that reduces manual efforts is ***Automation****.*

Things which are

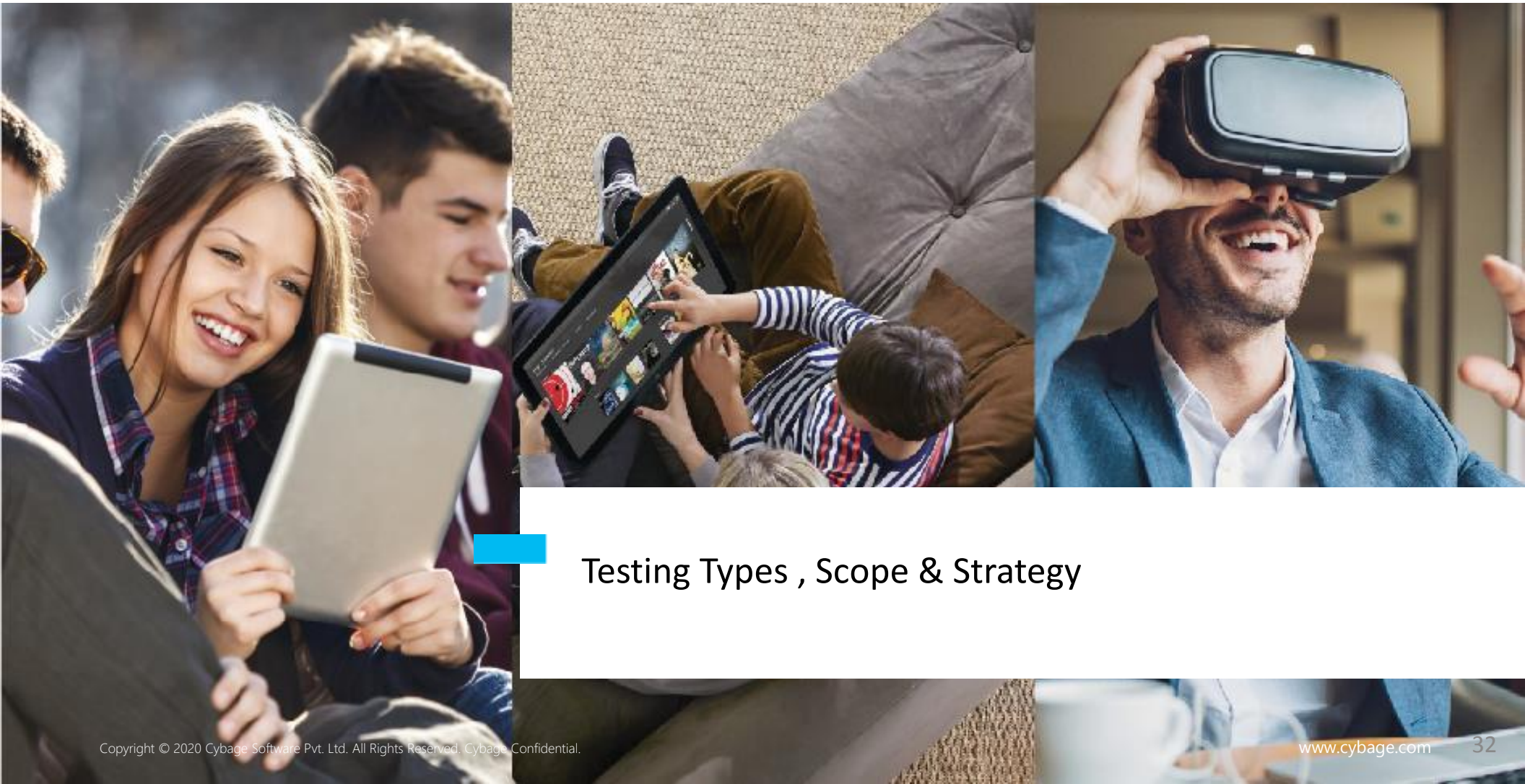
- *Repetitive in nature*
- *Frequently used*
- *Actions having some fixed pattern can be programmatically accomplished without any manual Intervention is* ***Automation****.*

Need for Test Automation

- *Speed up testing time*
- *Improve Test Coverage*
- *Ensure consistency*
- *Replicate testing across different platforms*
- *Higher degree of Repeatability and Control*
- *Precise reporting of Test Results*

When to go for Automated Testing

- *Daily build for testing*
- *Repeated sequence of actions*
- *Manual test execution time is high*
- *Scenarios are complex for manual execution*
- *Same functionality on multiple environments*
- *Verification points are high in number and tedious*
- *Lot of regression work*
- *Frequency of UI change is less*

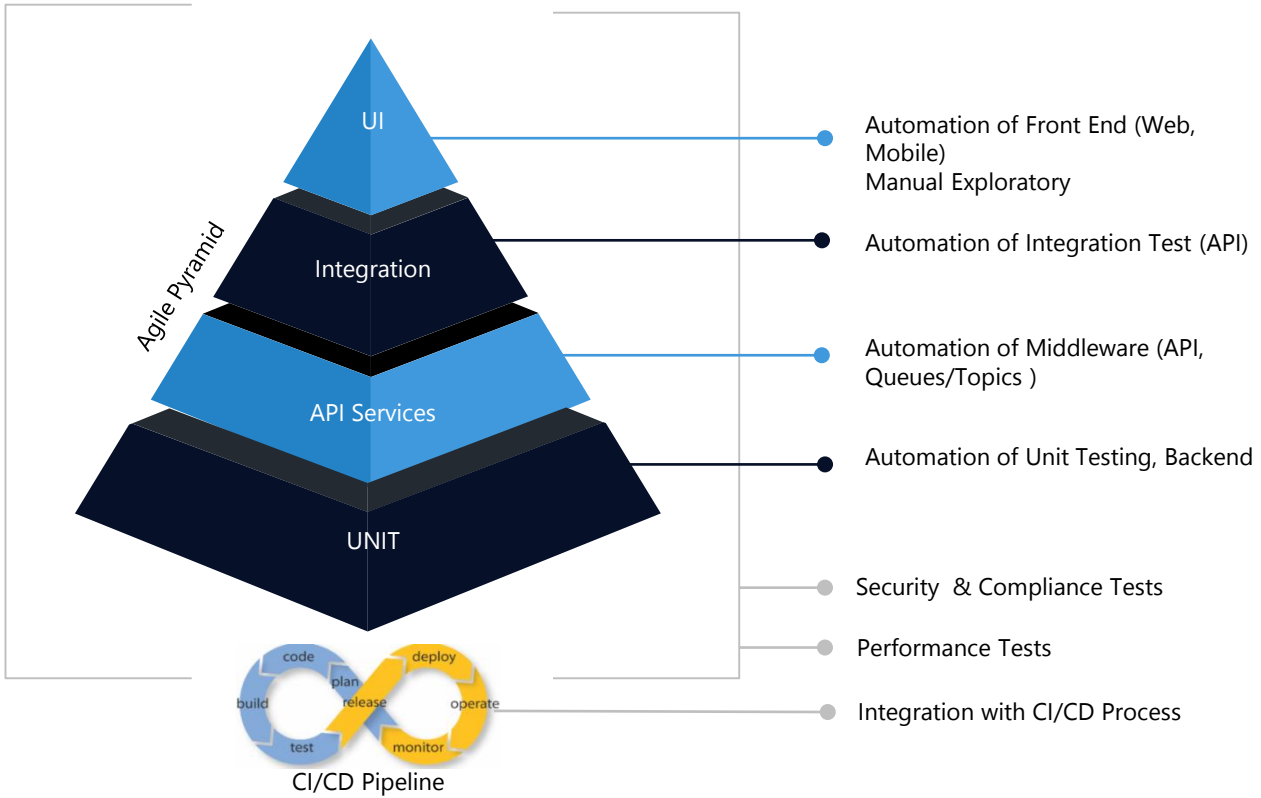


Testing Types , Scope & Strategy

Automation Testing Types

- Code Driven Testing
- Mobile Testing
- API Testing
- Performance Testing
- BI/Database Testing
- Functional/GUI Testing
- Security Testing
- Accessibility Testing

Testing In Agile | Approach & Coverage



Testing Coverage

Web & Mobile:
- Feature & Acceptance
- Compliance
- Cross Platform /Browser

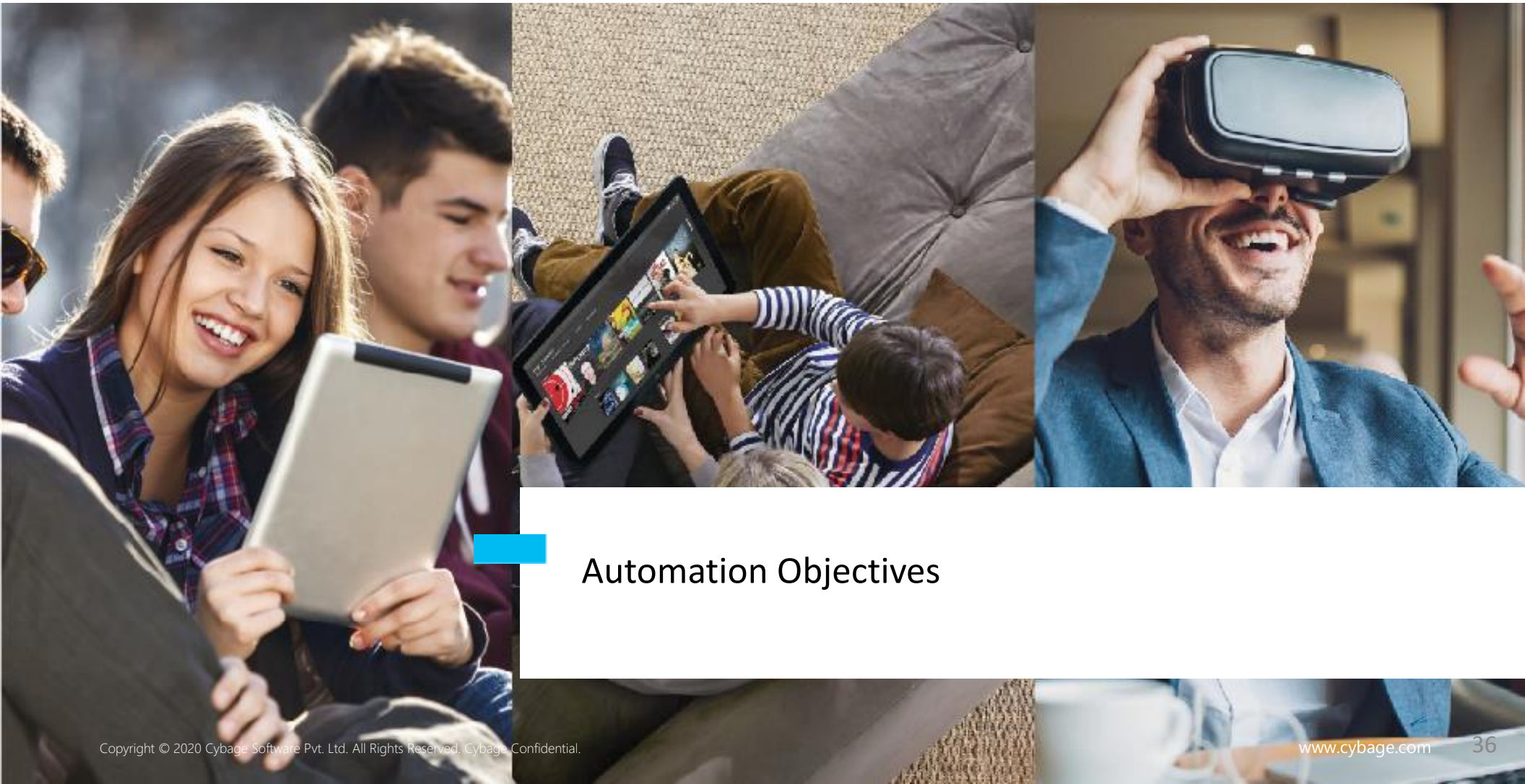
API:
- Payloads
- Messages
- Contracts
- Business Process
- Integration

Unit:
- Individual Functions /Methods
- Integration points

Security & Performance:
- Interfaces-Web, Mobile, API
- Infrastructure
- Networks

Test Automation | Strategy

Feasibility Analysis	Scope & Planning	Design & Development	Execution	Maintenance
• Application Study • Tool Identification • Proof-Of-Concept	• Scope Definition • Test Planning • Defining Automation Approach • Estimation	• Framework • Script • Data Creation • Review and Rework	• Automation execution • Analysis • Reporting	• Script • Data • Framework



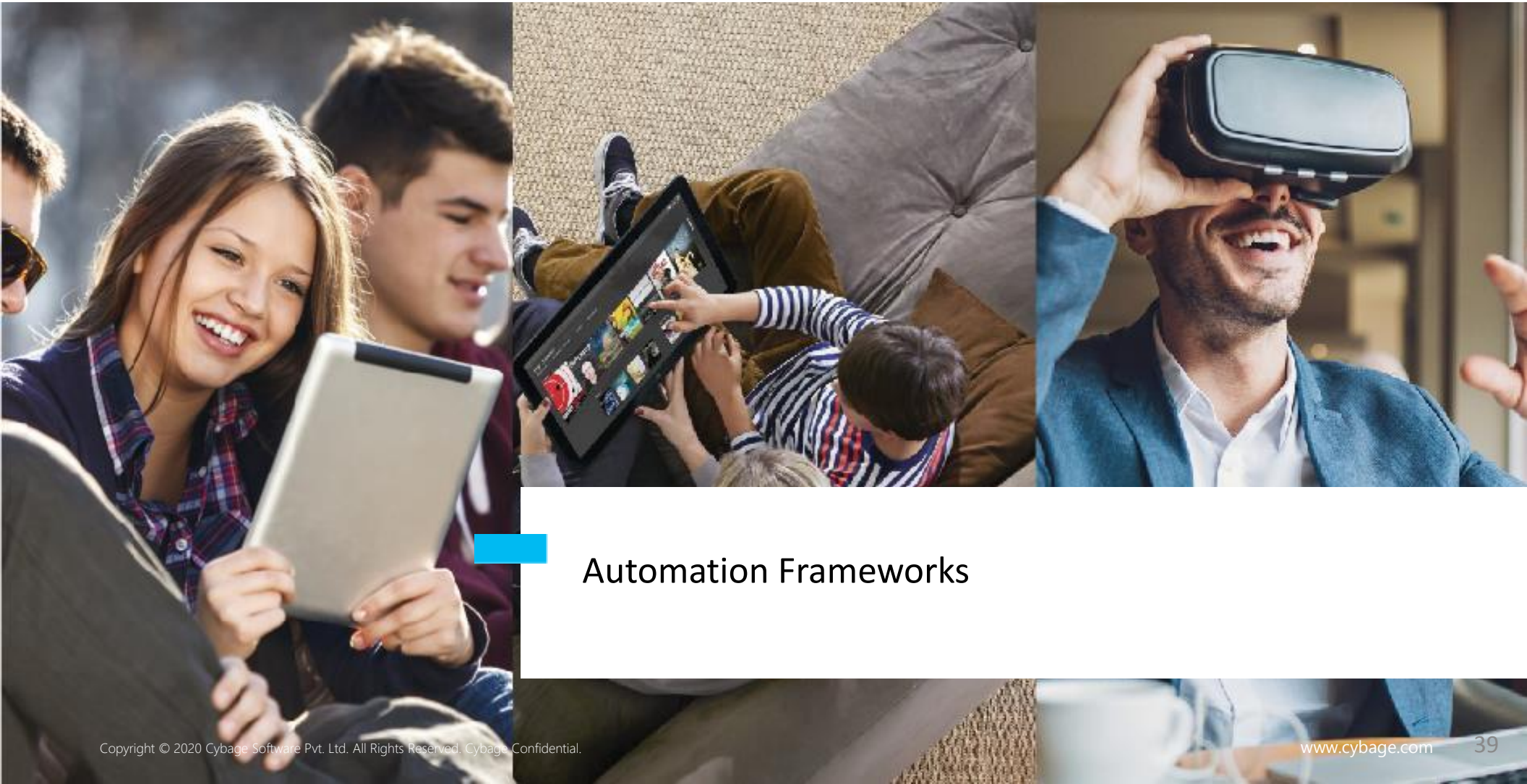
Automation Objectives

Possible Objectives of Functional Test Automation

- Increase the Efficiency
  - Reduce testing costs
  - Reduce time spent in the testing
  - Improve test coverage
  - Make testers feel good
- Same scenario multiple environments
  - Multi Platform
  - Configuration testing
  - Multi browser

Possible Objectives of Functional Test Automation

- Sync up with the development
  - Continuous Integration
  - Prevent destabilization happening due to frequent changes
- Extending Manual reach
  - Data Driven Tests
  - Complex workflows
  - Tedious data conversions/ verifications
  - Time zone difference in development and testing teams
  - Automating the User Acceptance Tests



Automation Frameworks

What is a Framework

A framework is set of standard guidelines for -

- ✓ Coding
- ✓ Structure of Test code
- ✓ Test data folders
- ✓ Test results storage
- ✓ Accessing external resources
- ✓ Shared object repositories
- ✓ And many more..

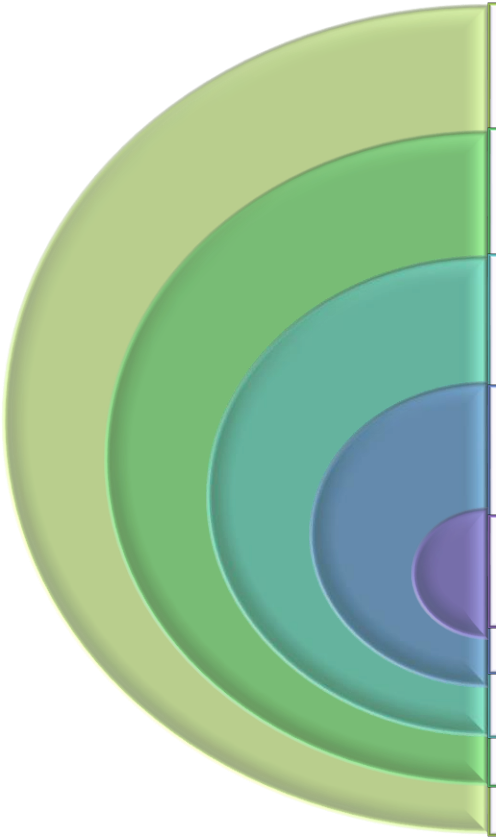
What is a need?

Are you looking for –

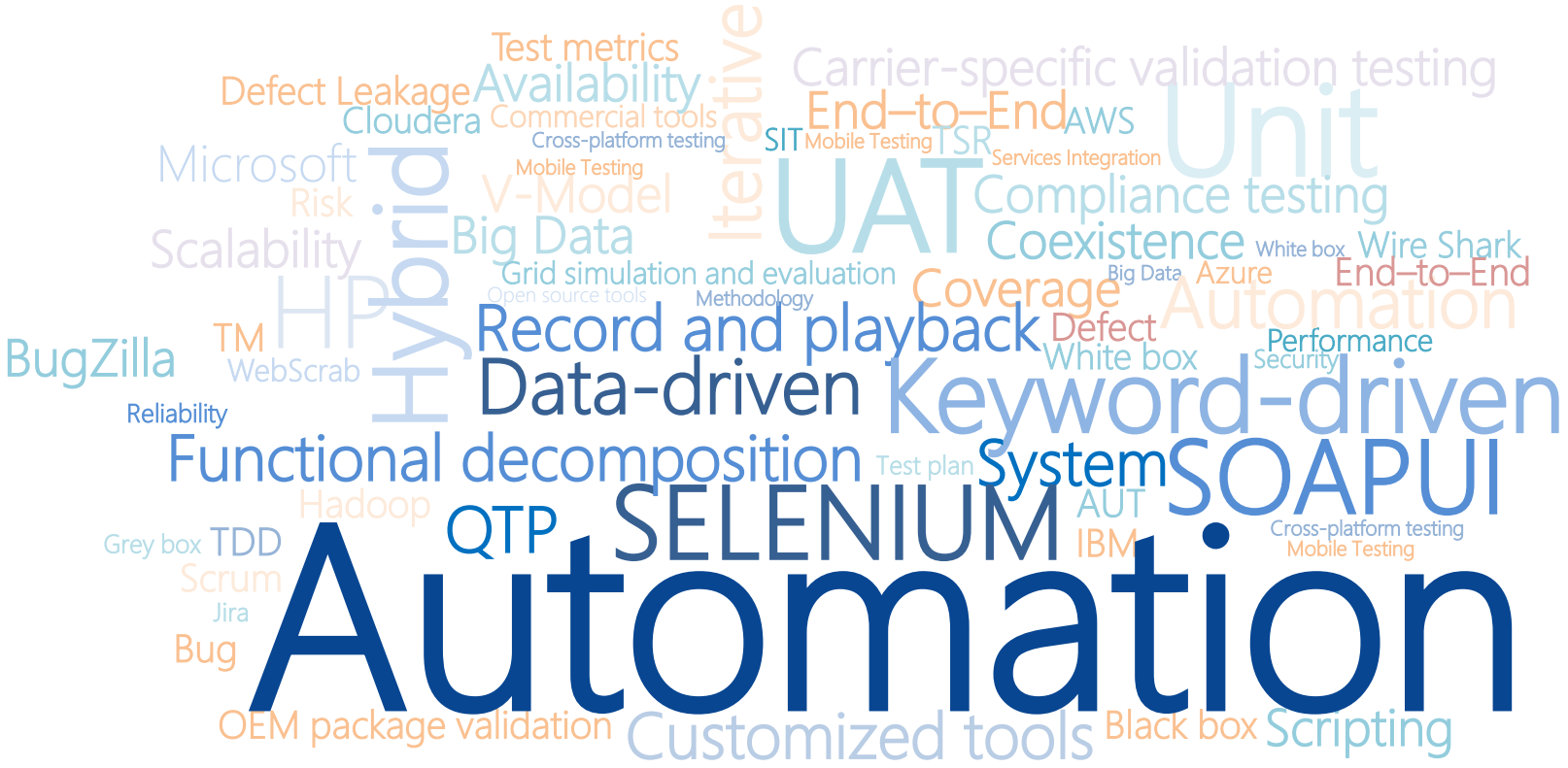
- A tool agnostic framework?
- Parallel test case execution?
- Remote execution or Cloud integration?
- Database validations?
- Different Reports than the one, your selected tool provides?
- Integration with any CI tools?
- Scheduler for test execution?
- Involvement of Manual tester in Automation?

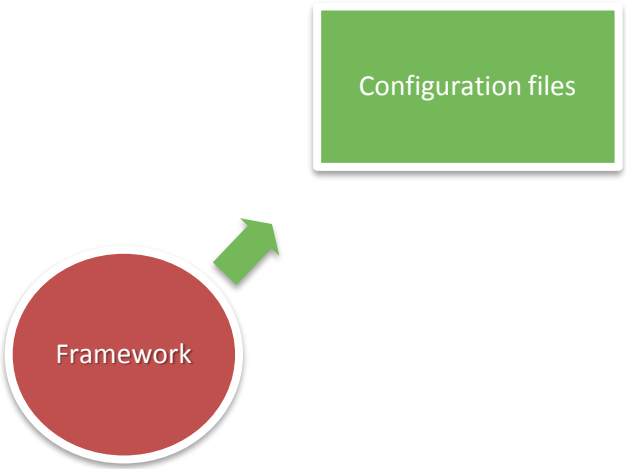
Automation Framework totally depend on the project requirements

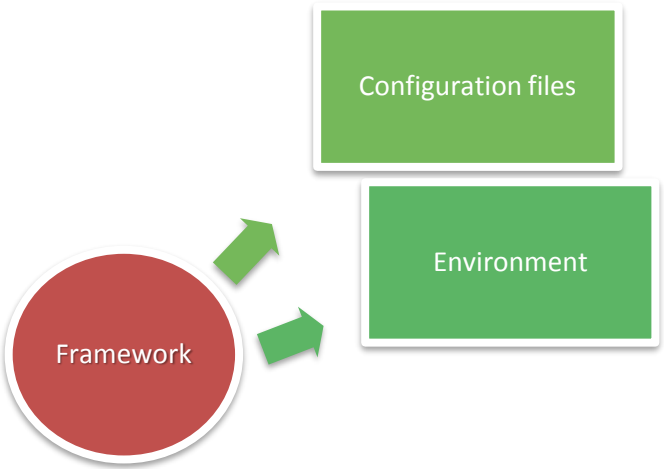
Types of Frameworks

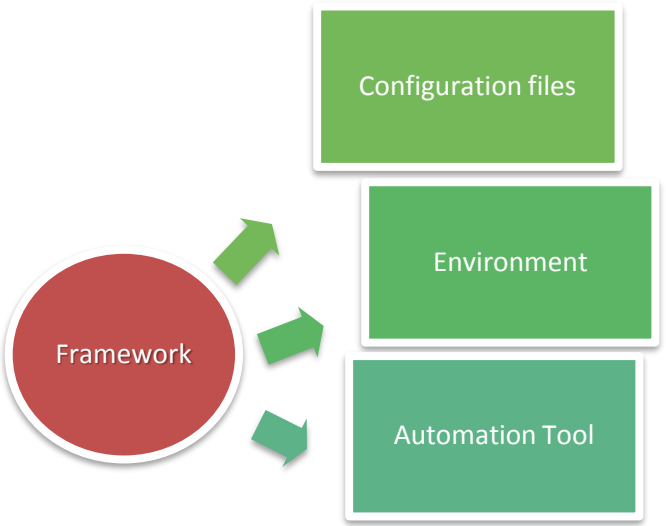


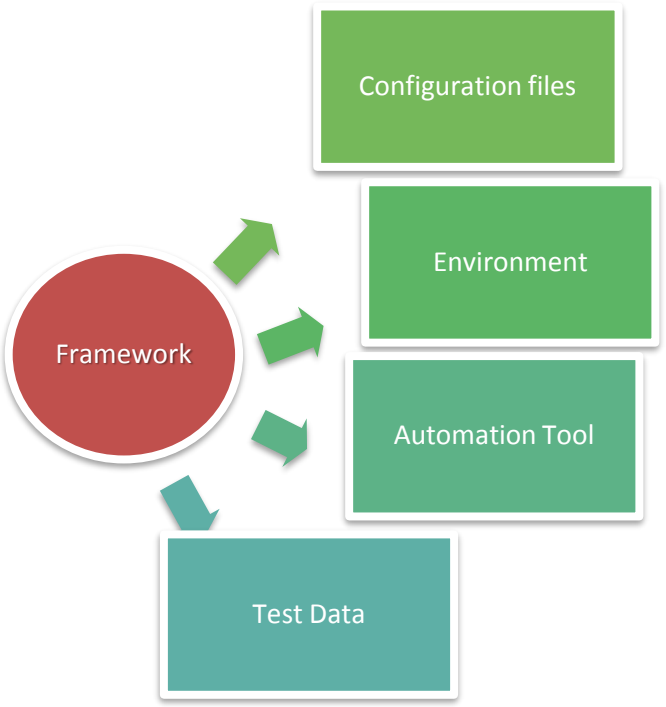
Hybrid Test Automation	• Combination of one or more frameworks • Highly Robust , flexible & reusable with less maintenance • Skilled automation experts are required
Keyword-Driven	• keywords or action words are defined for each function • It is best suited for non-technical tester.
Data-Driven	• Here input and output values for the Test are fetched from Data Files. • More time is needed to plan and prepare data and scripts
Test Library Architecture	• Scripts are initially recorded by "Record & Playback" method and Later, common tasks inside the scripts are identified and grouped into Functions
Linear Scripting	• Known as Record & Playback • The simplest of all Frameworks • Comes with a high maintenance

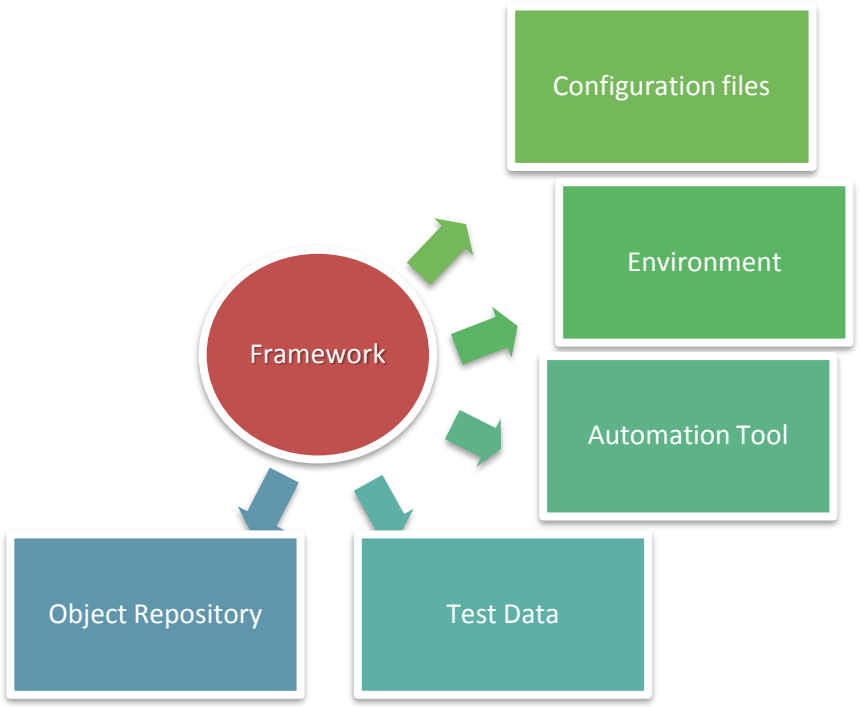


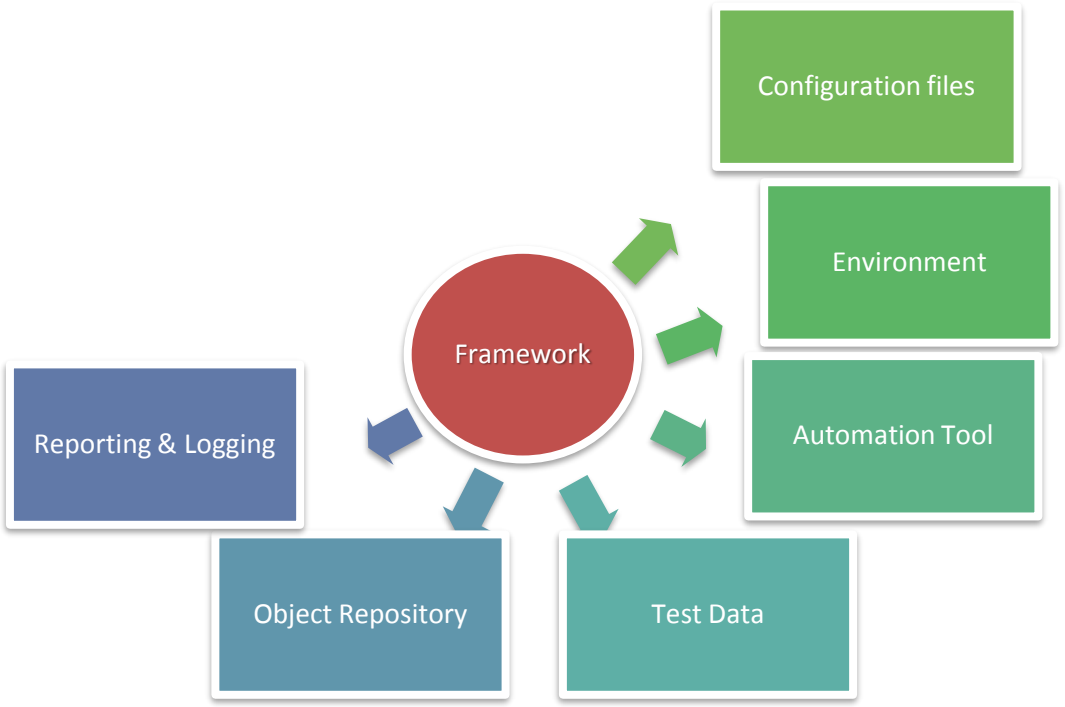


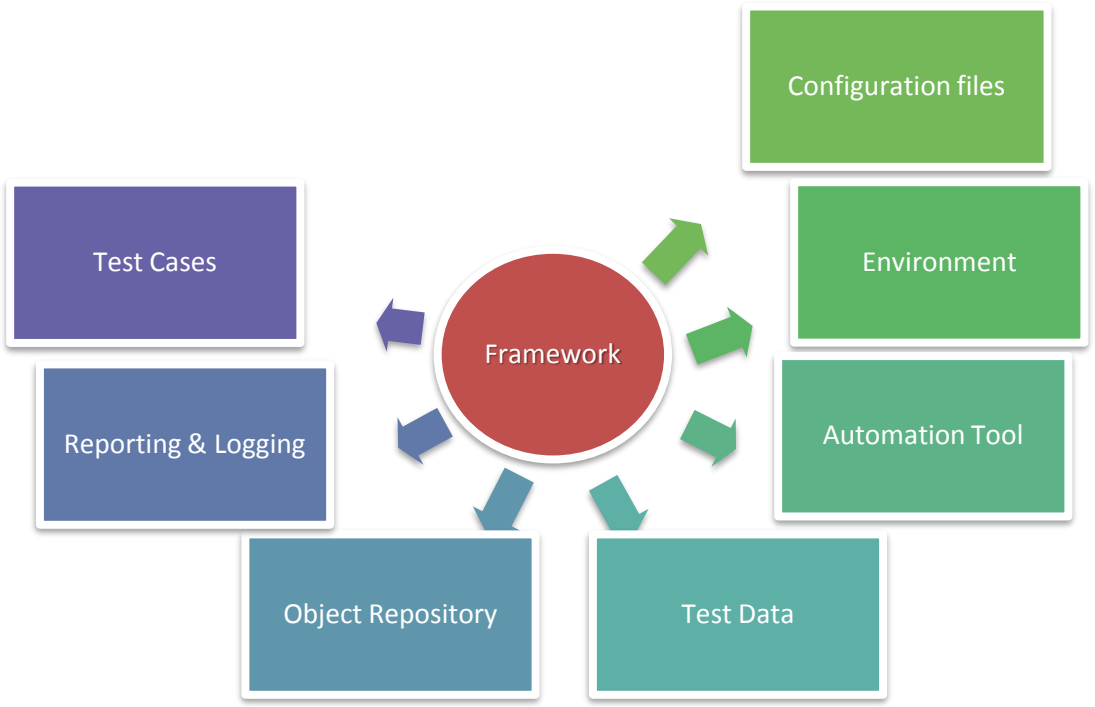


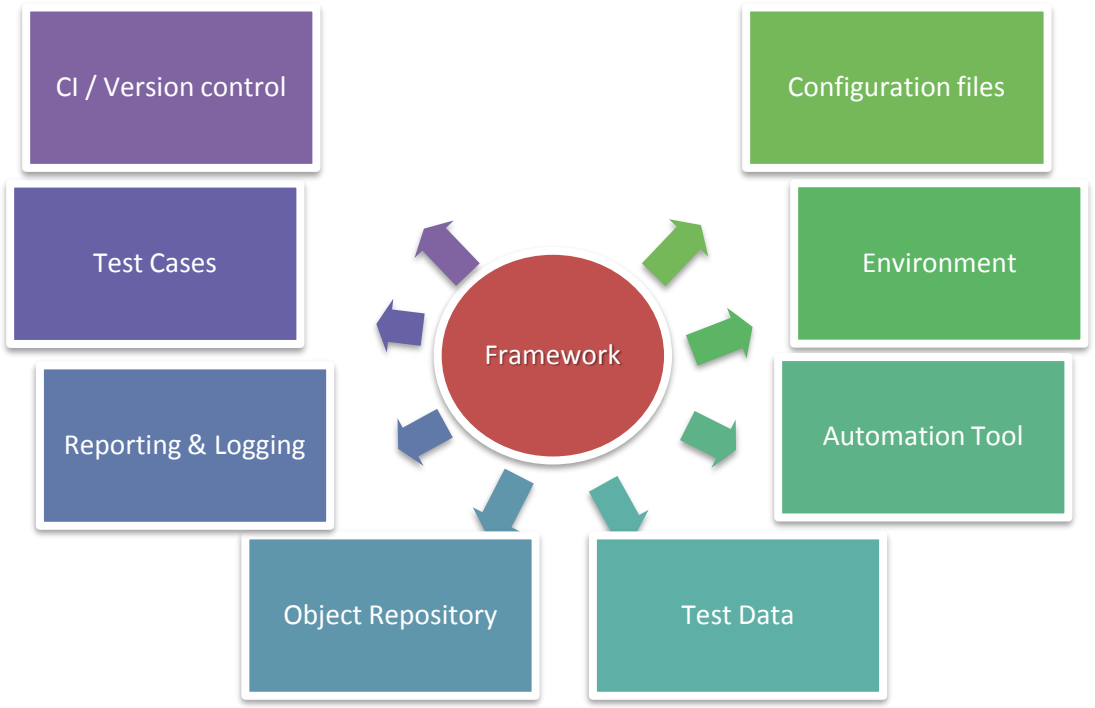


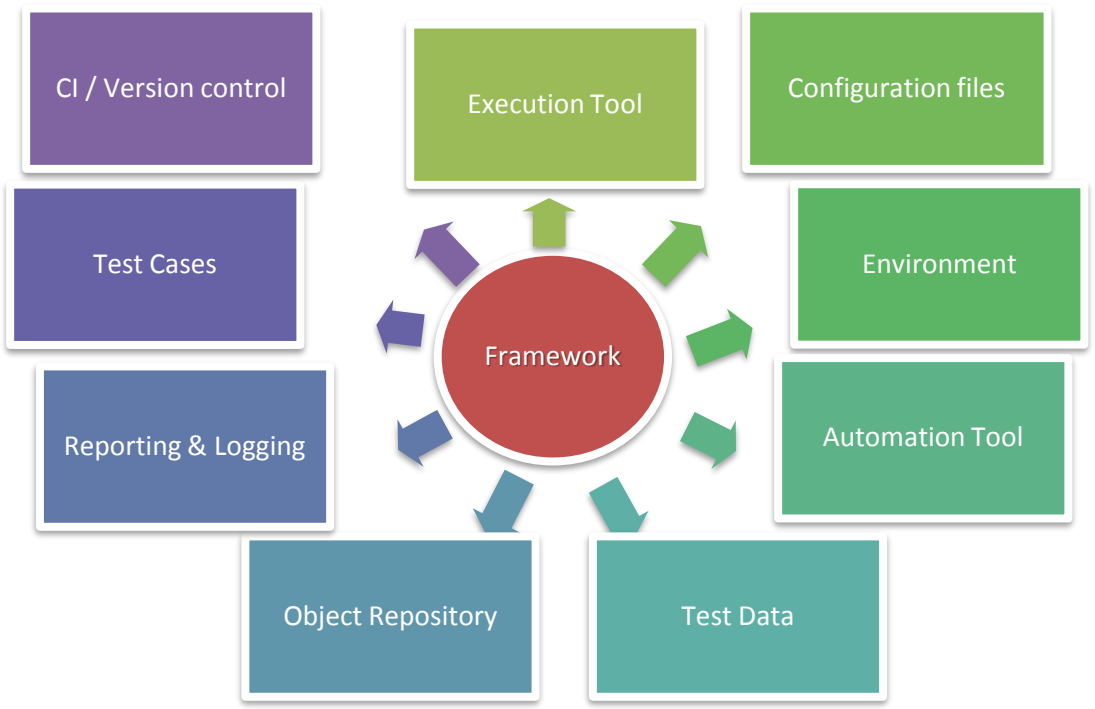


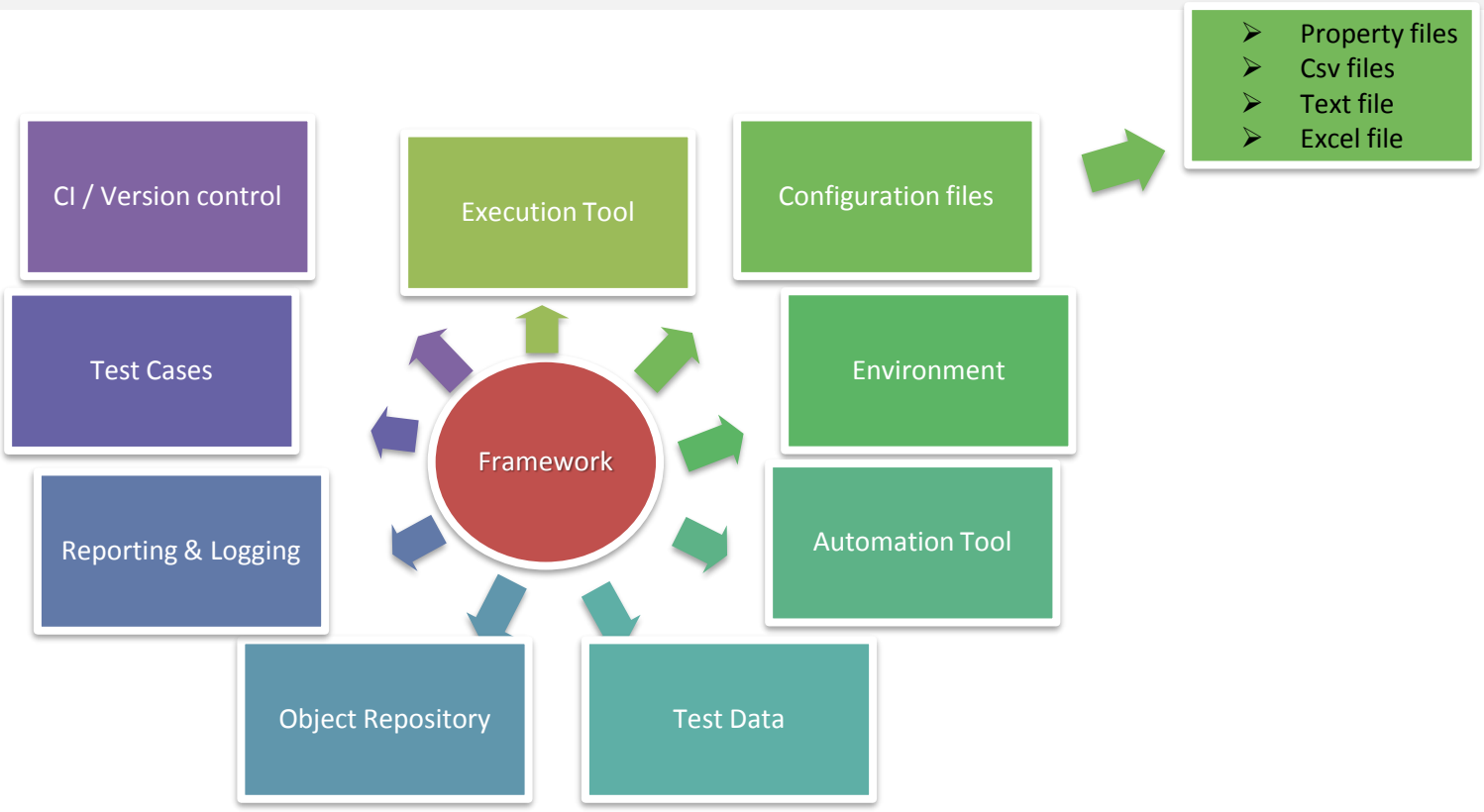


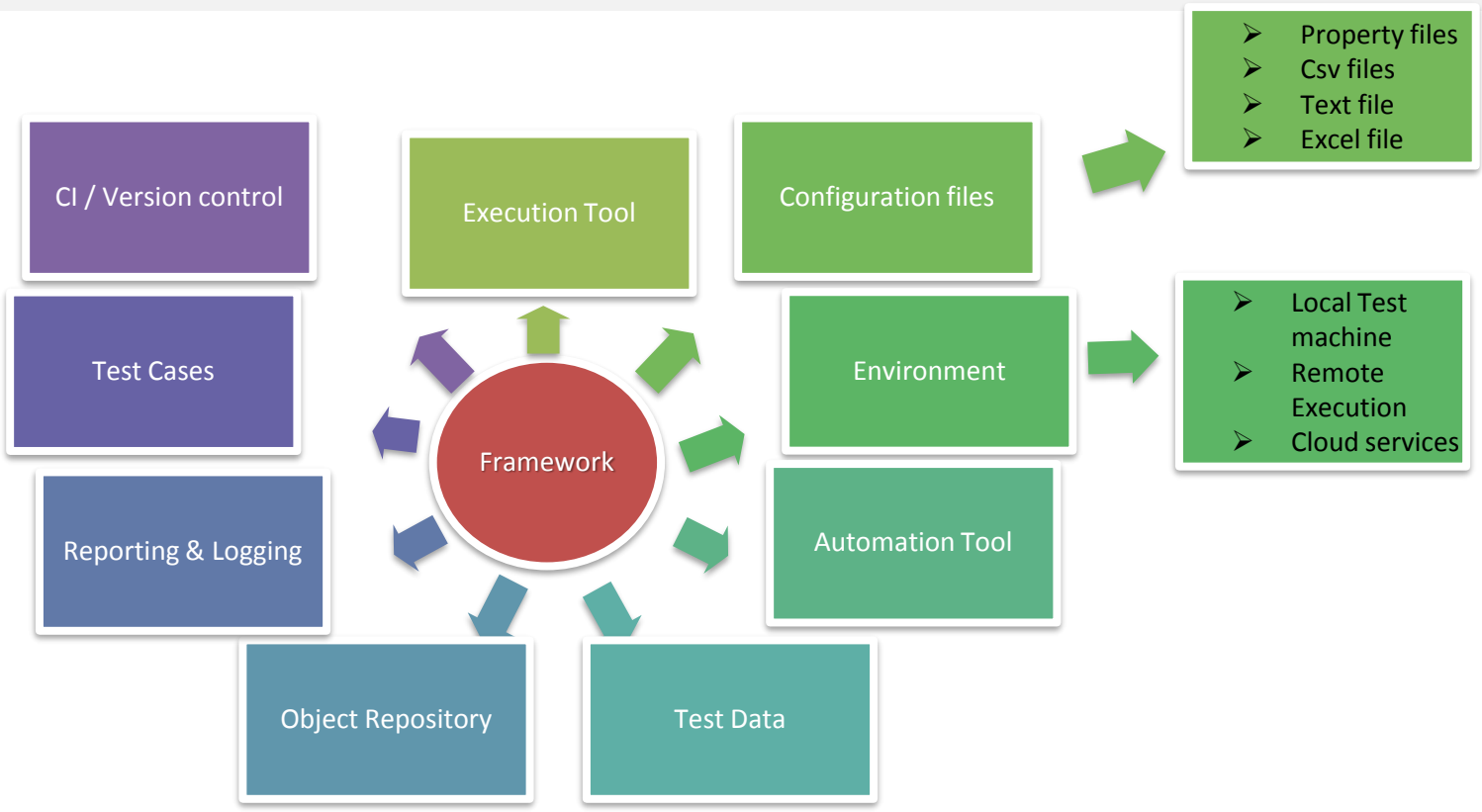


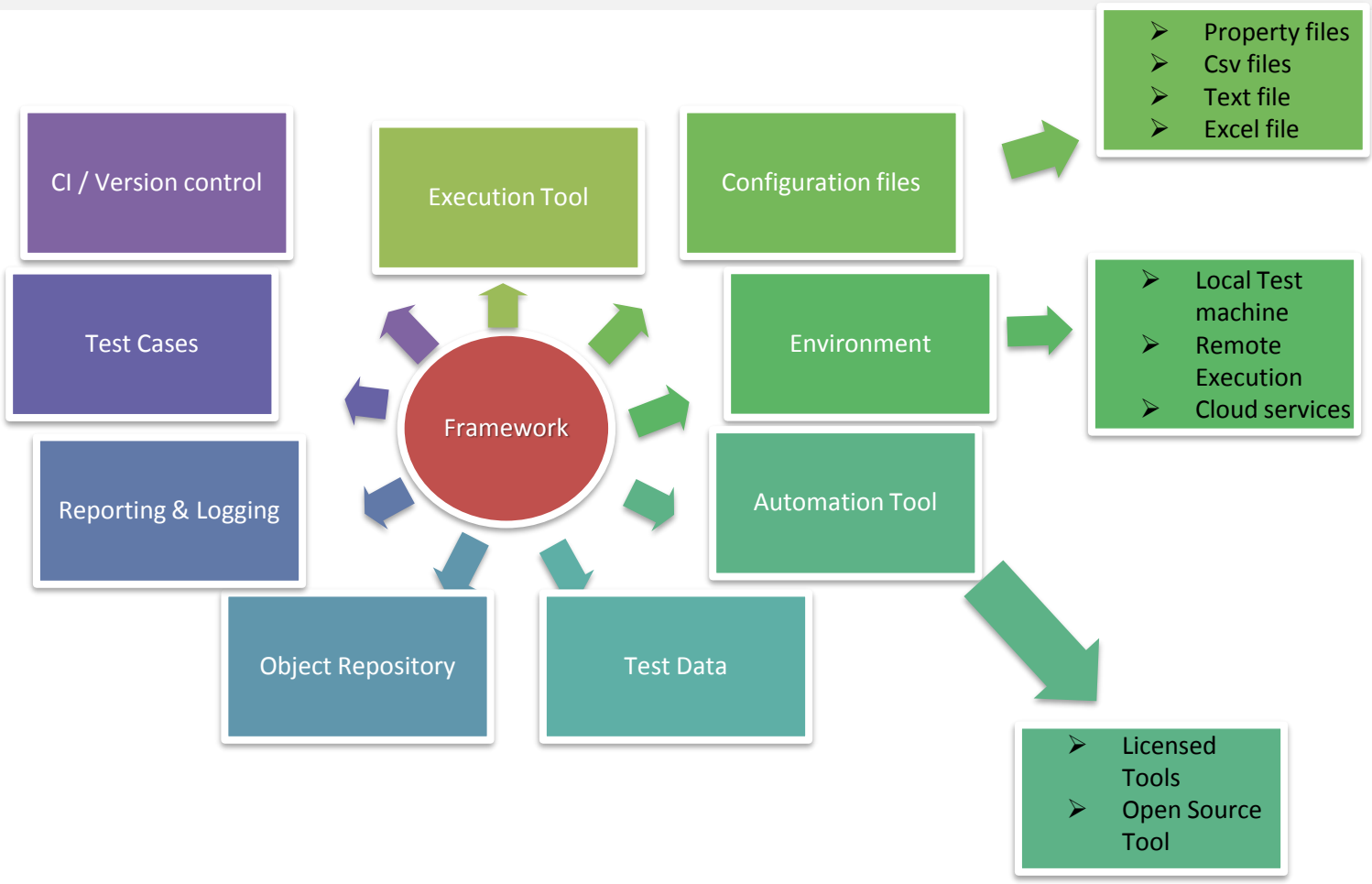


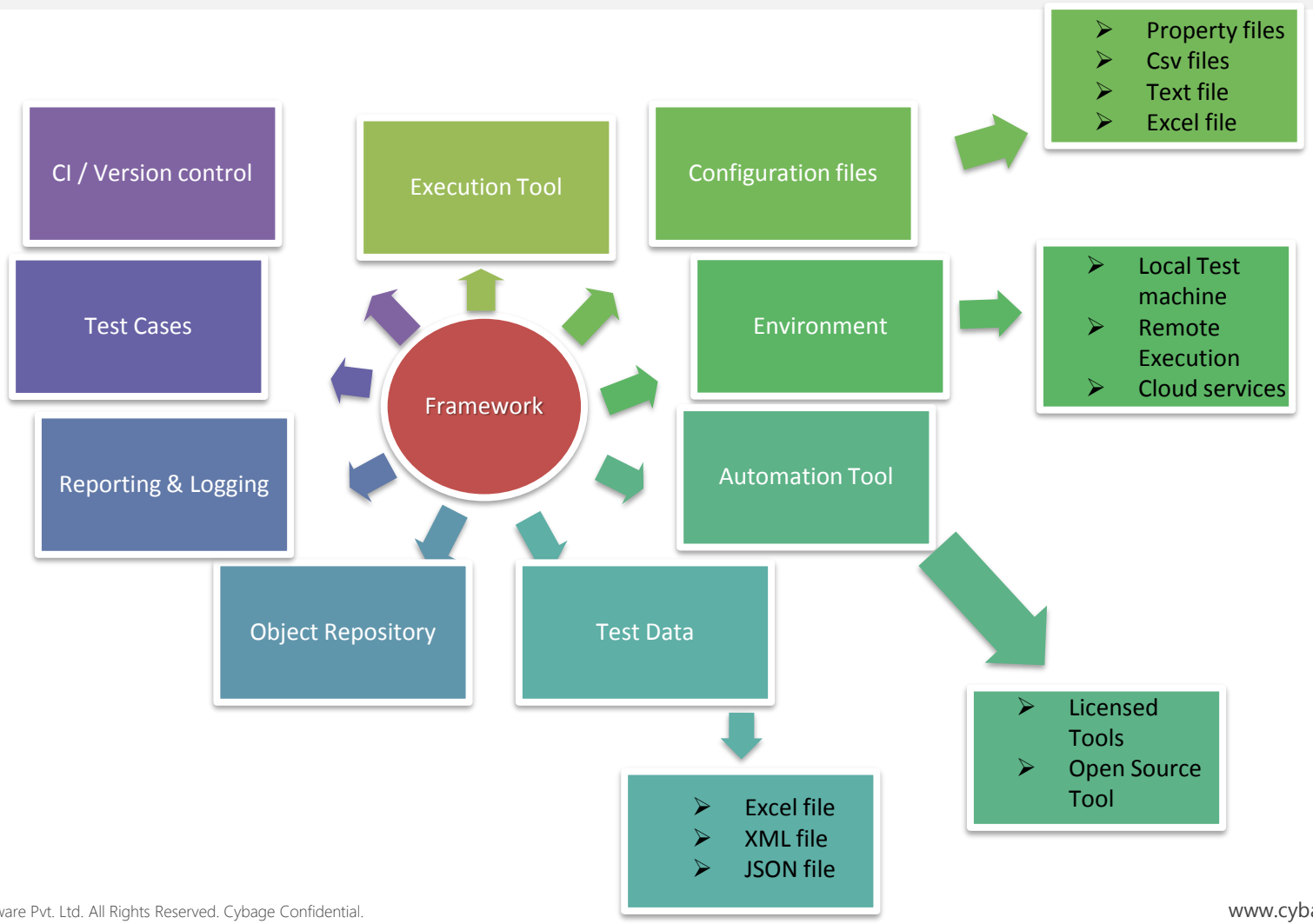


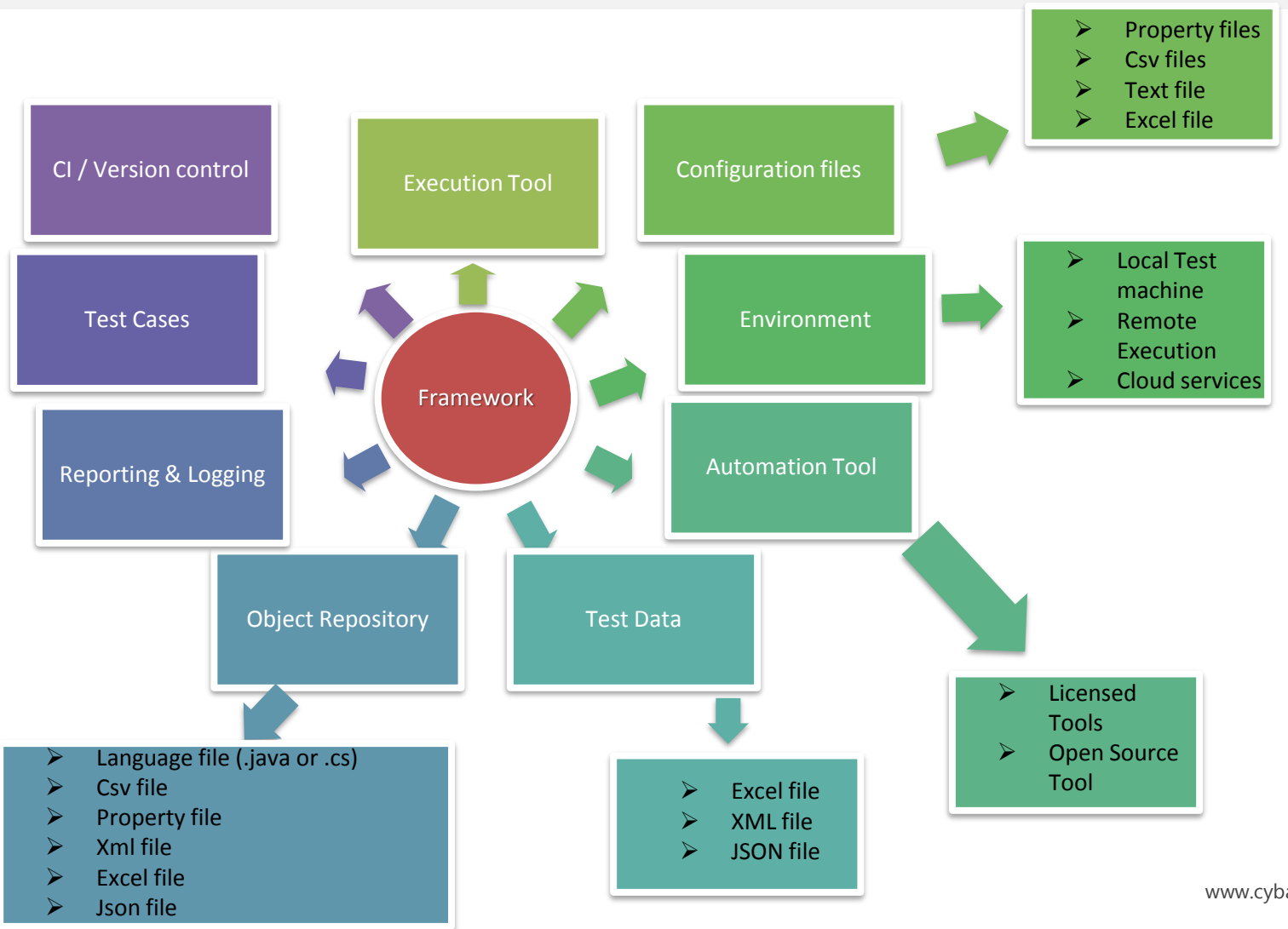


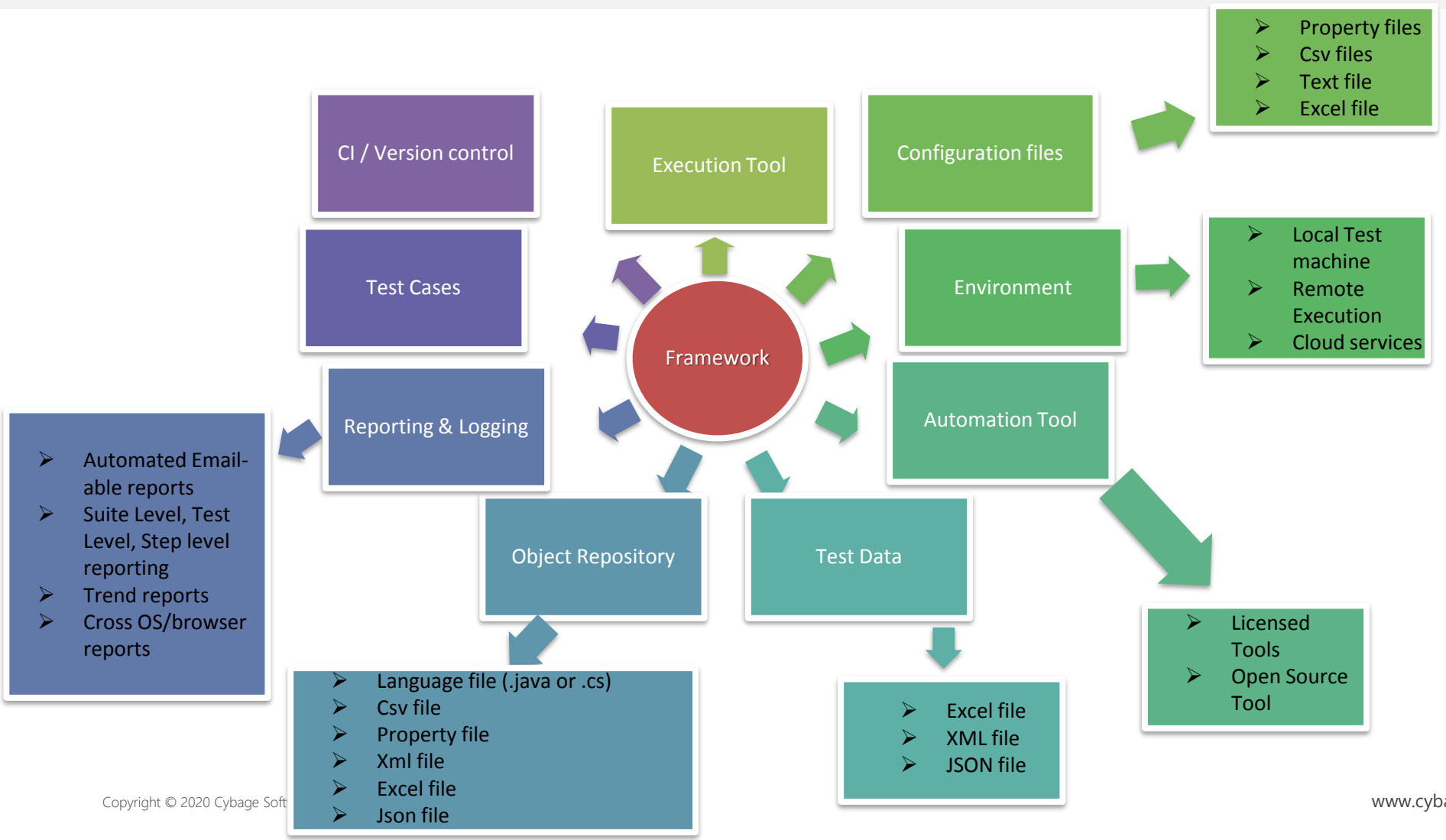


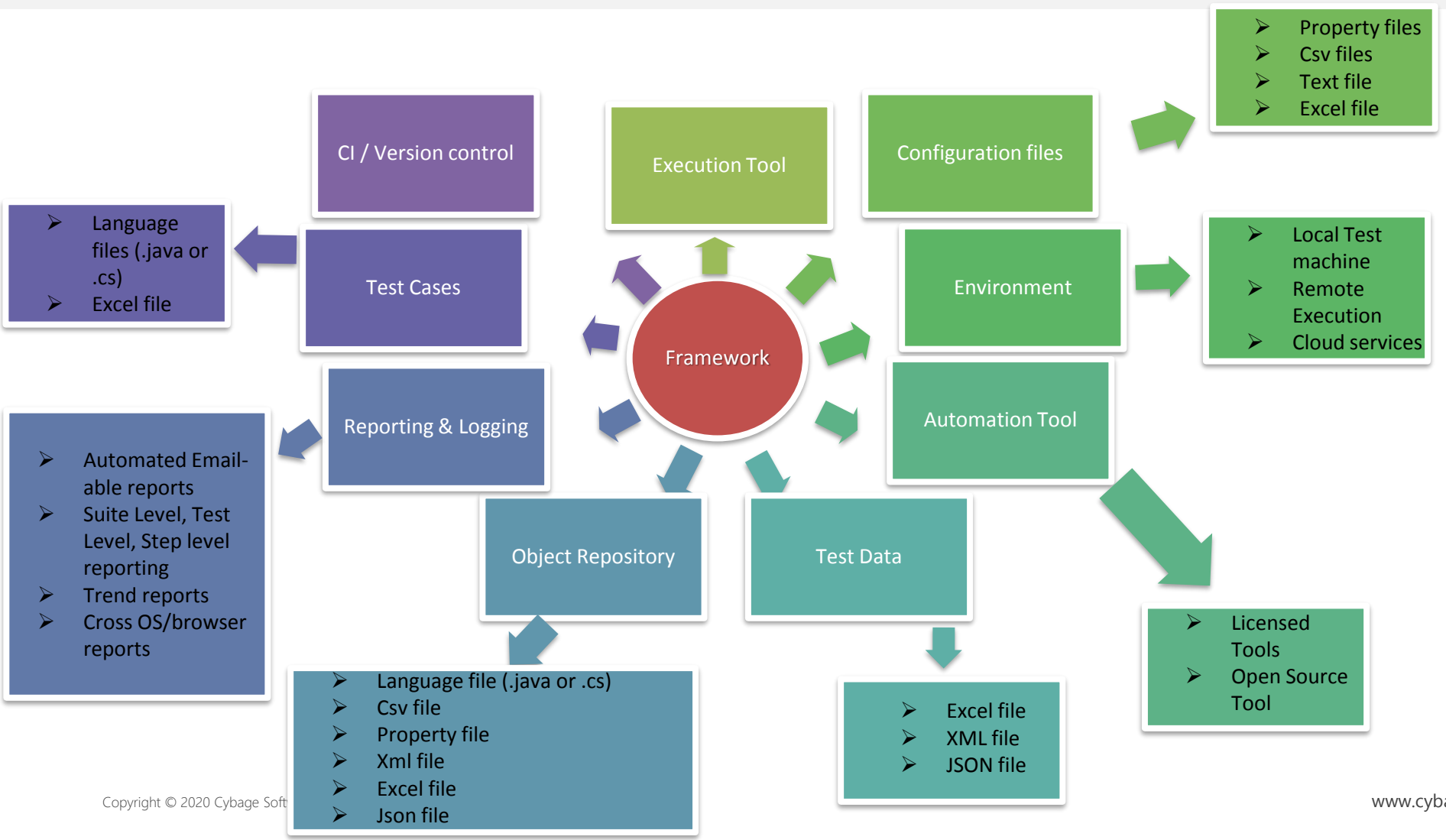


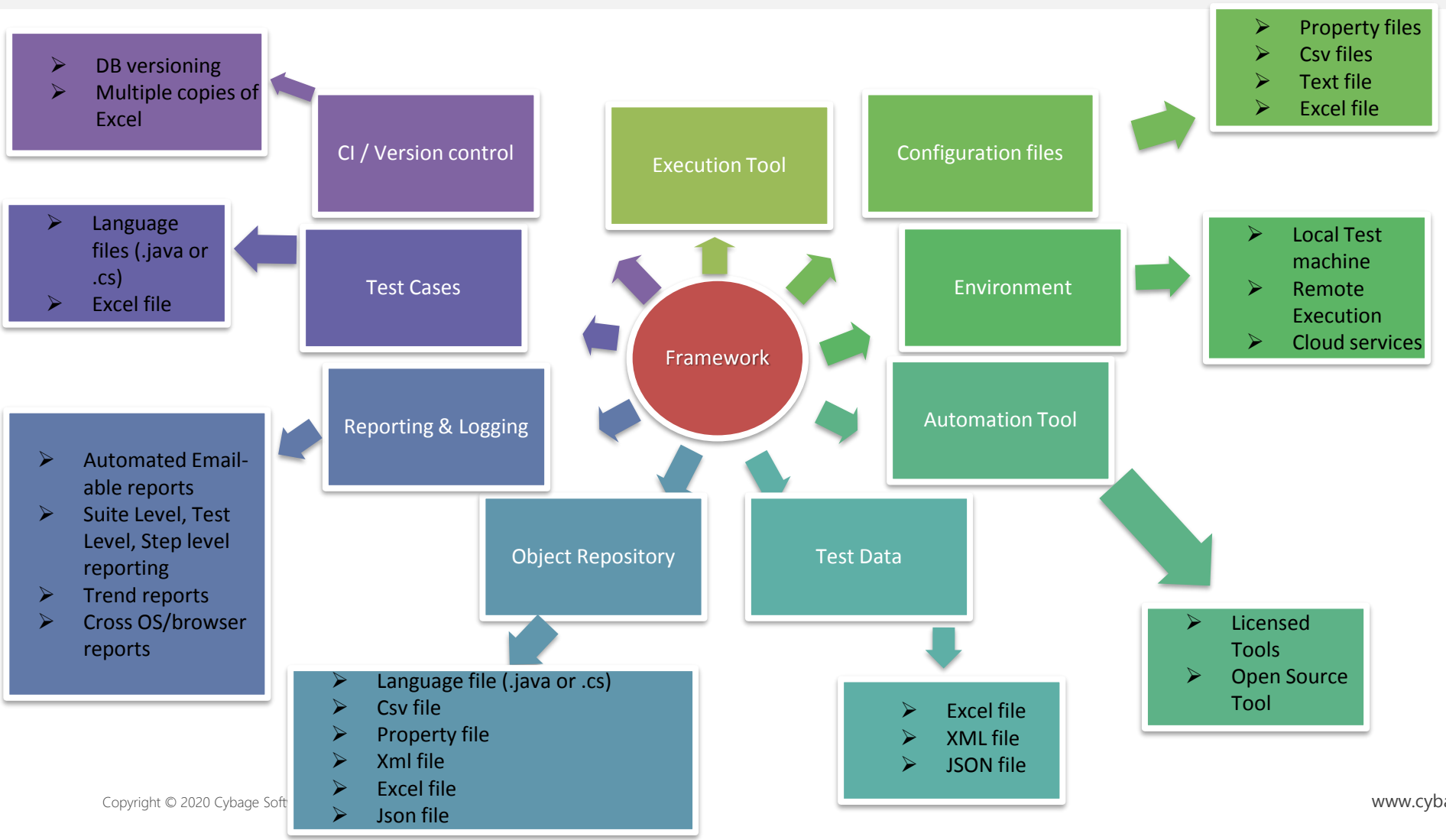


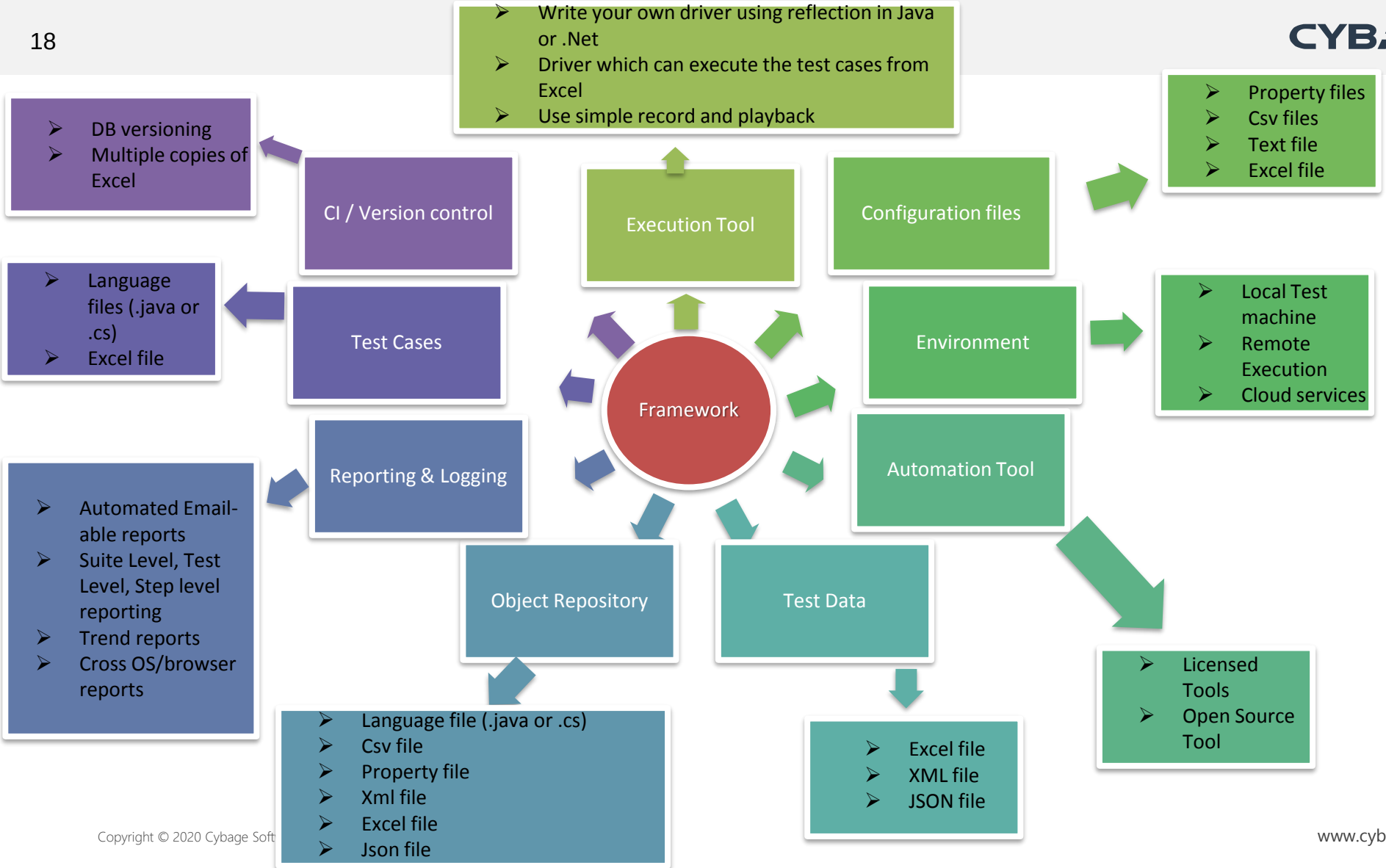


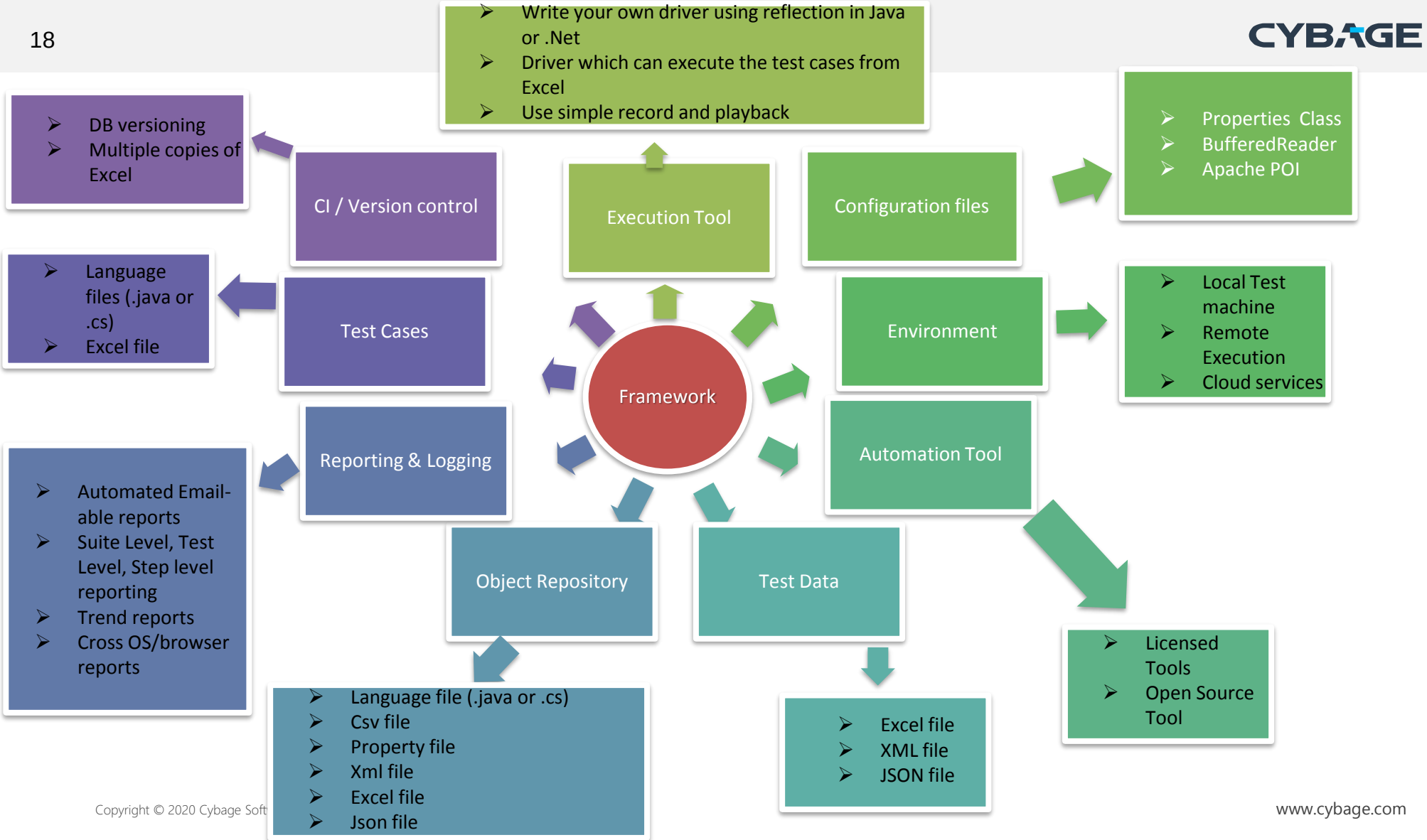


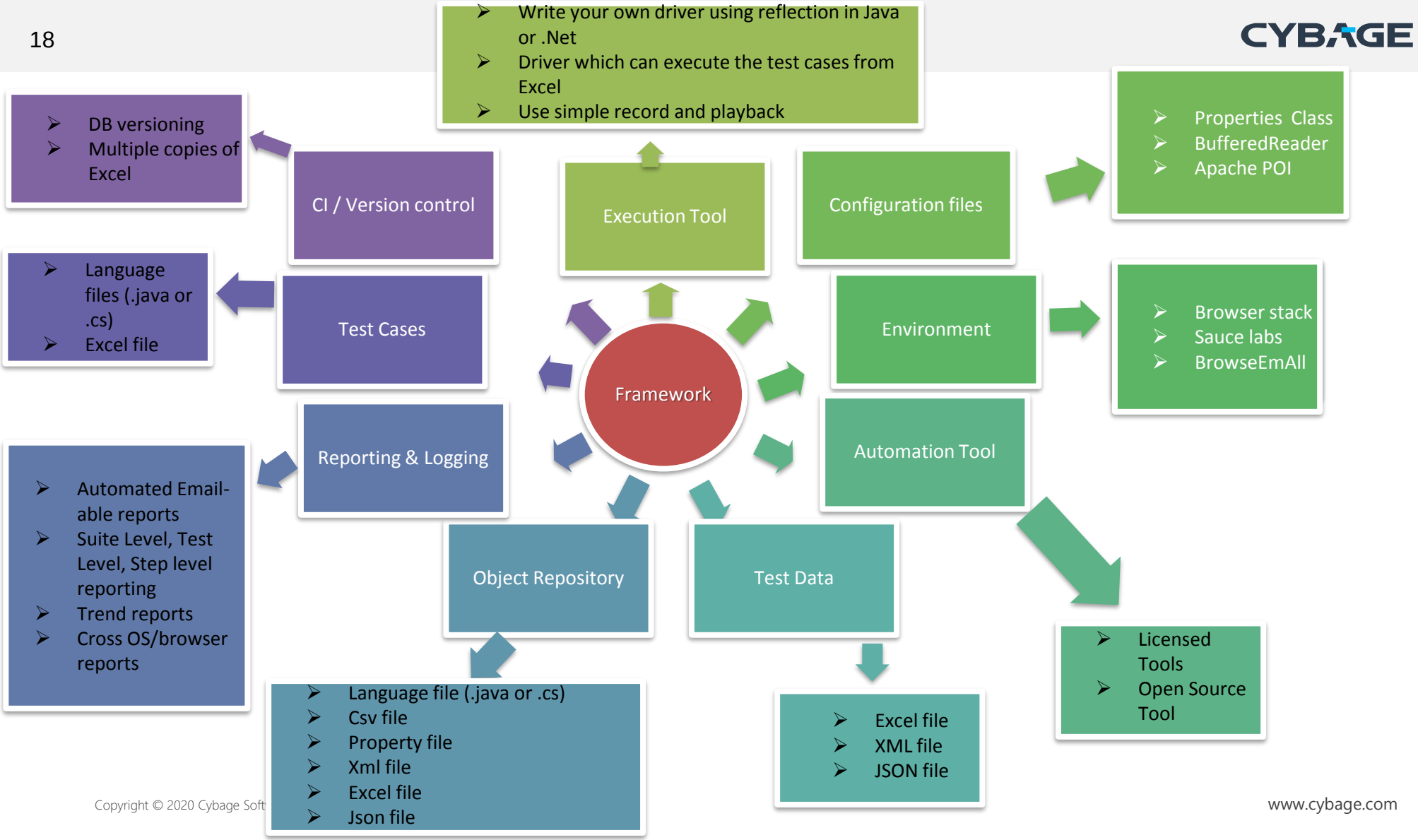


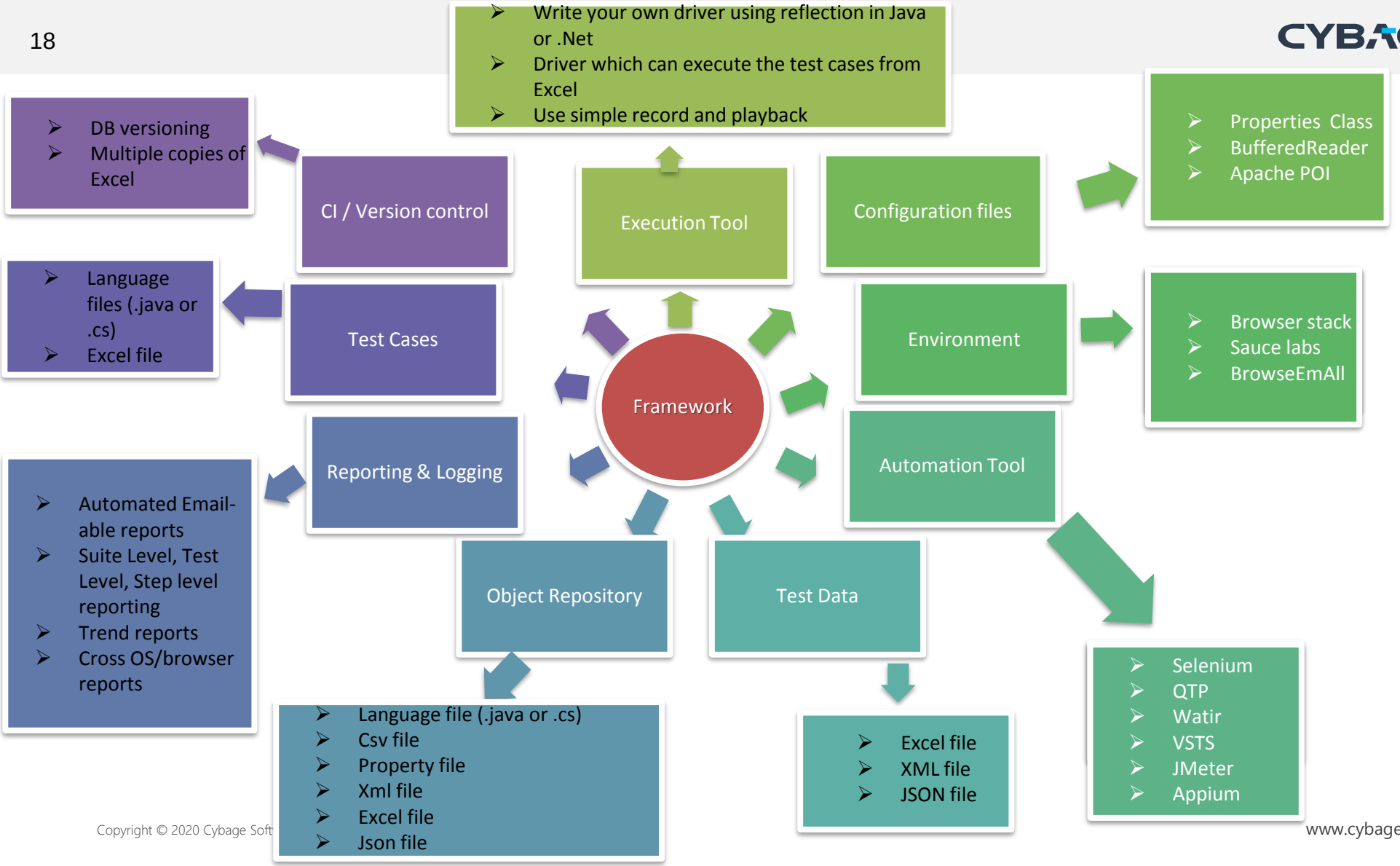


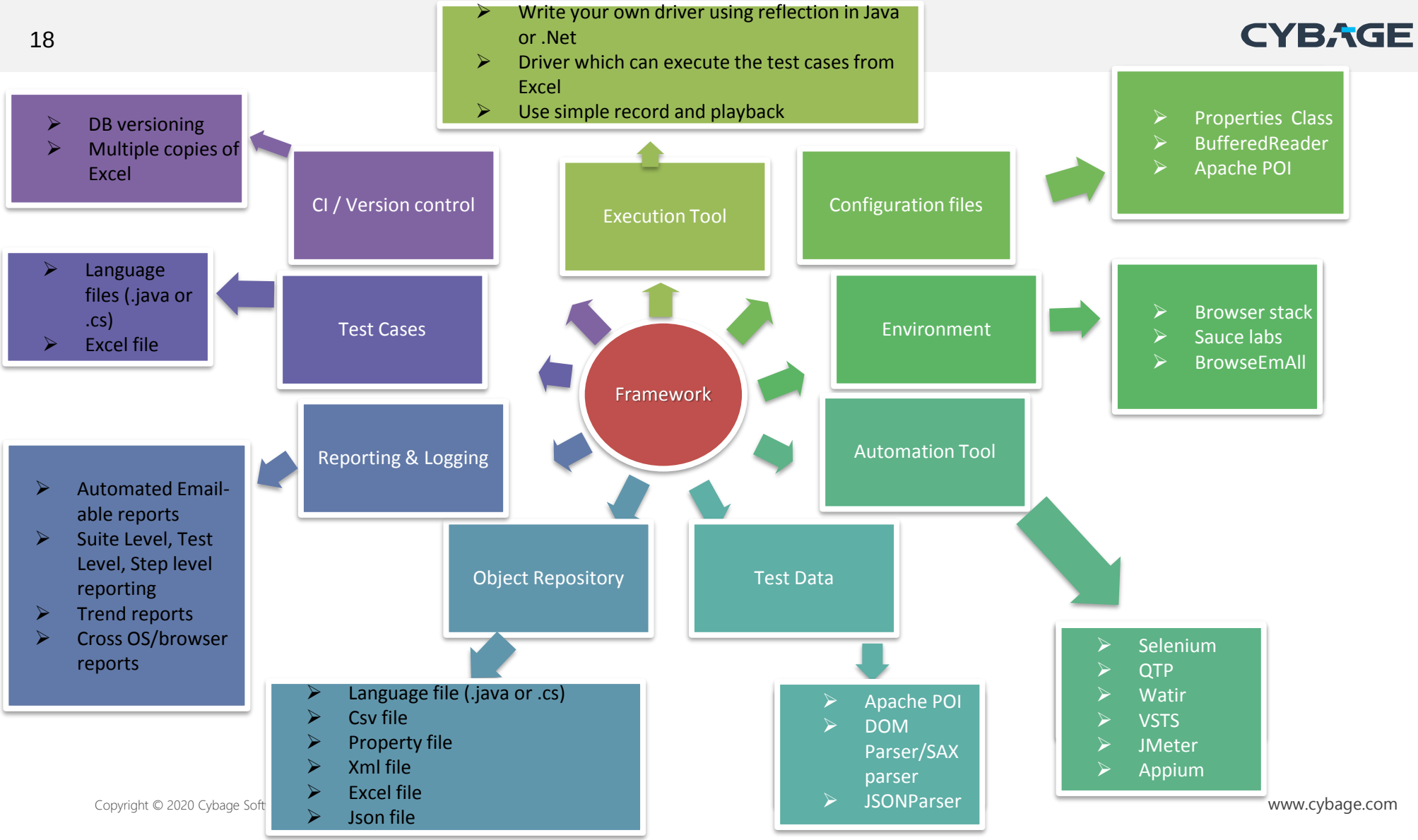


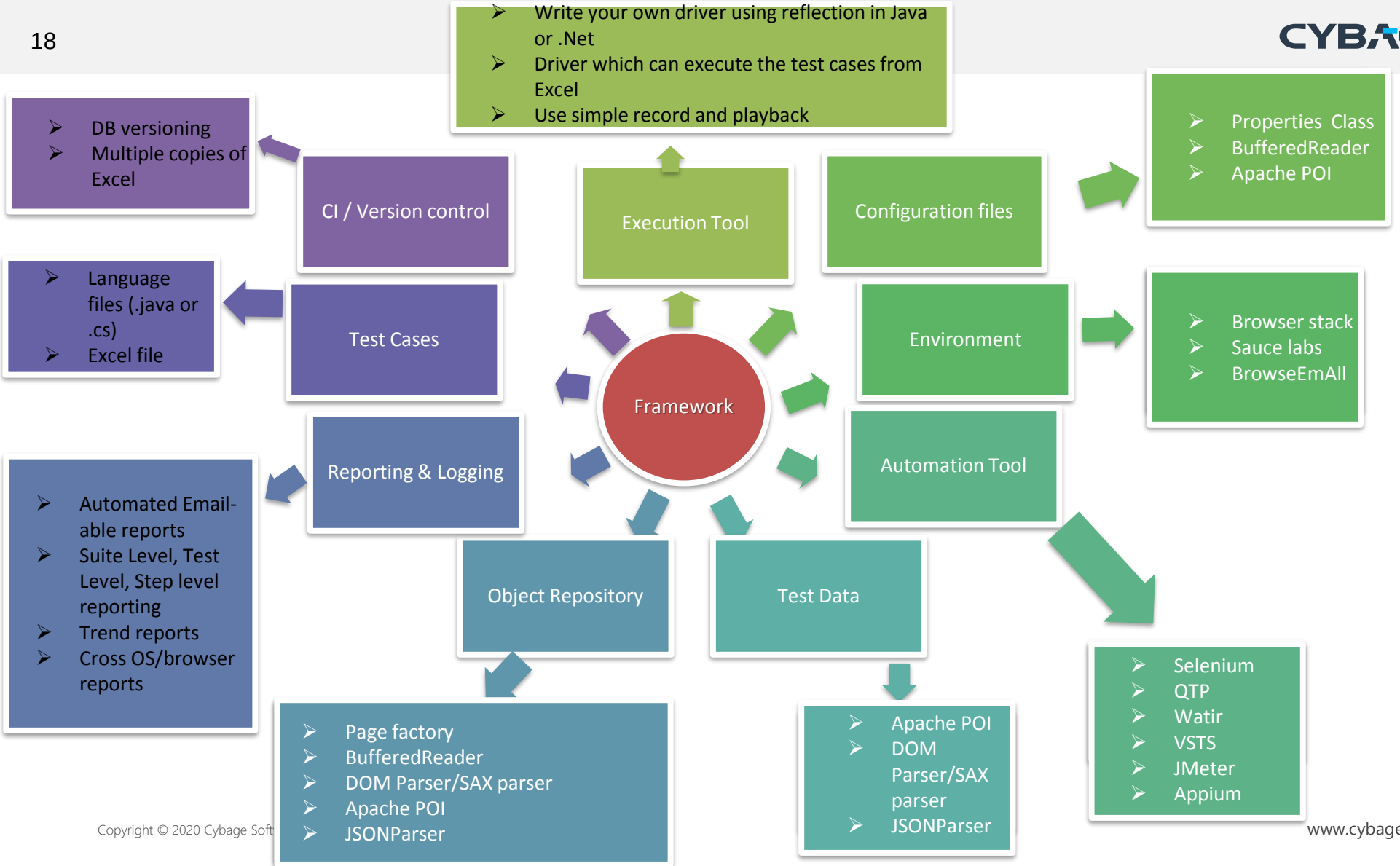


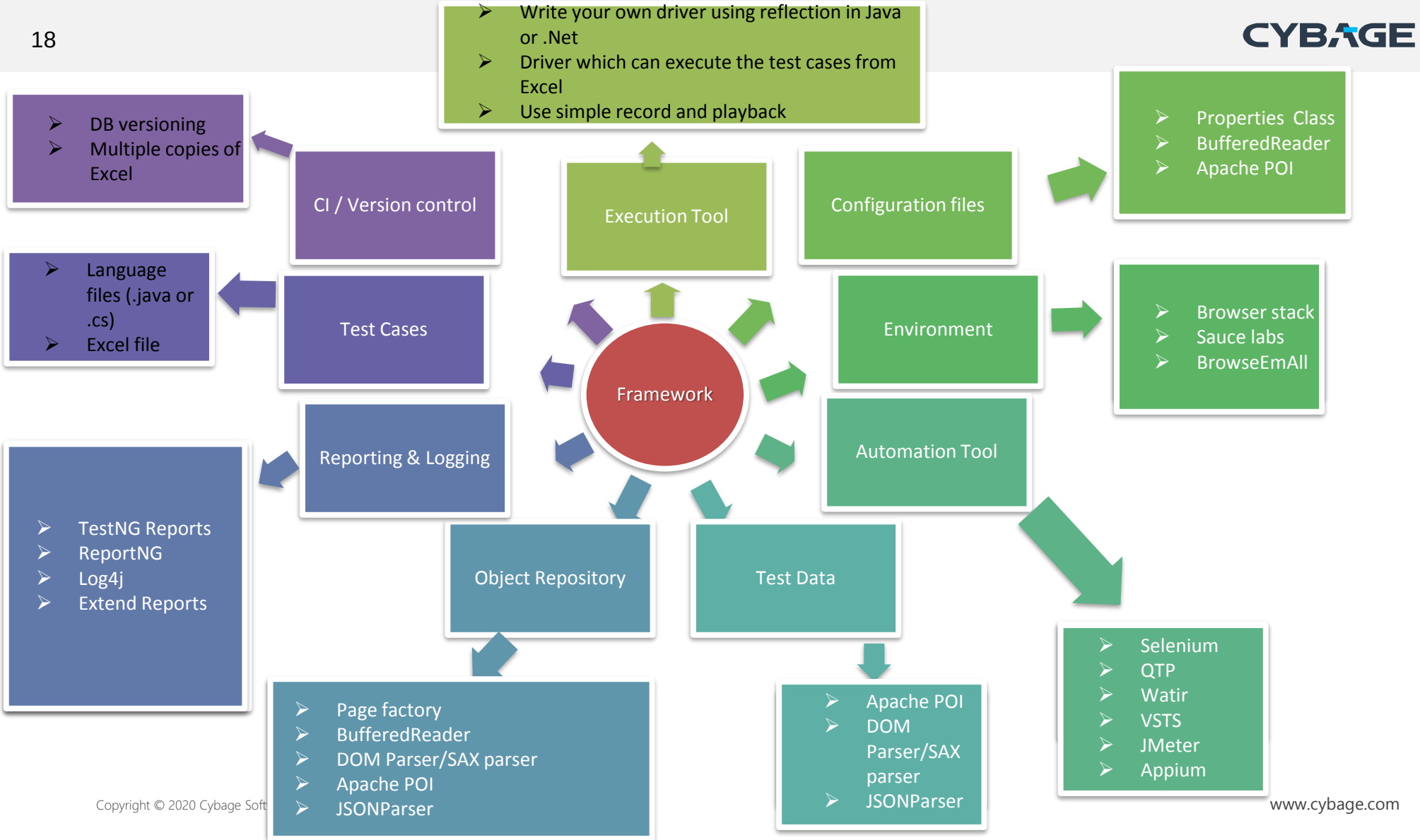


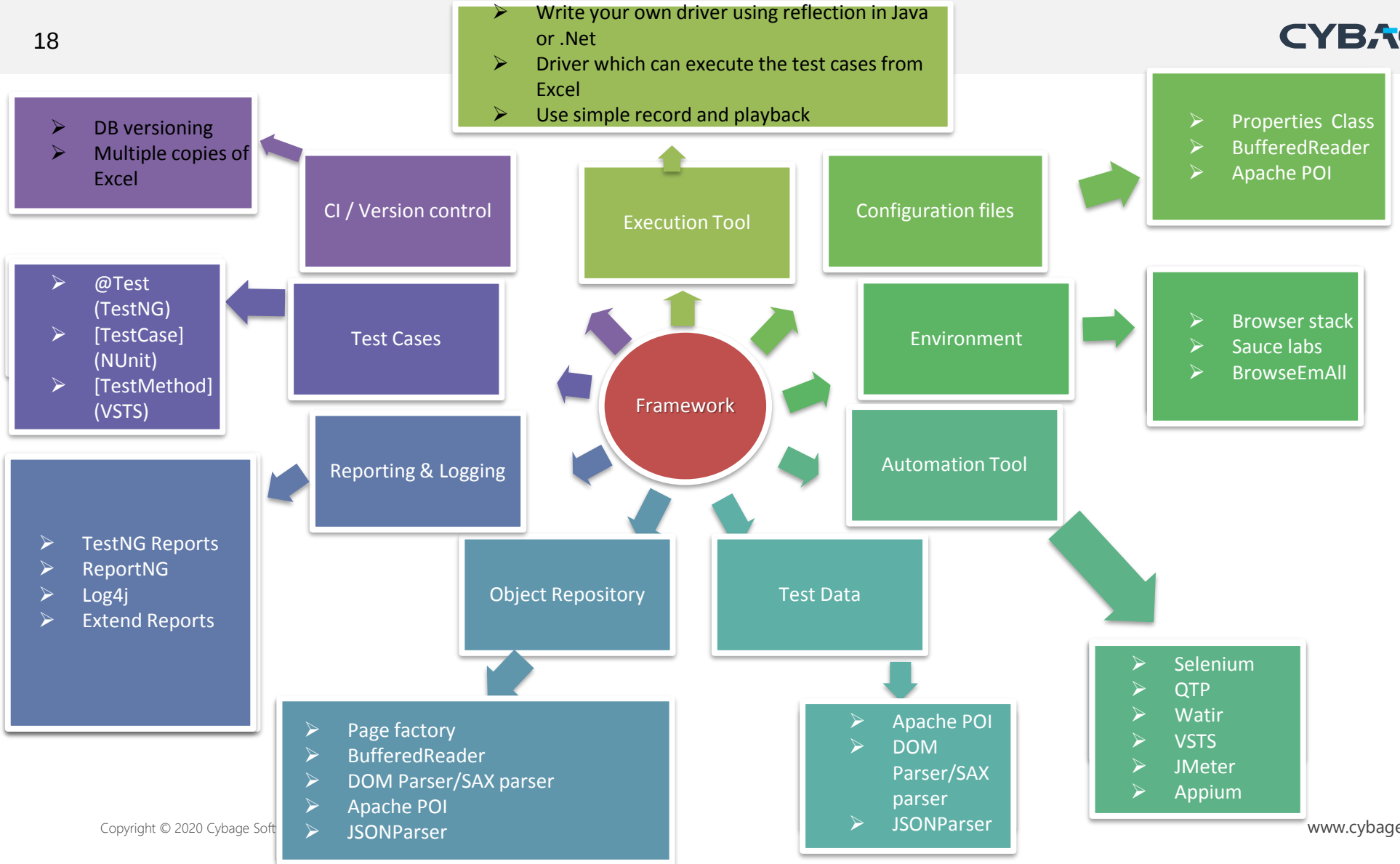


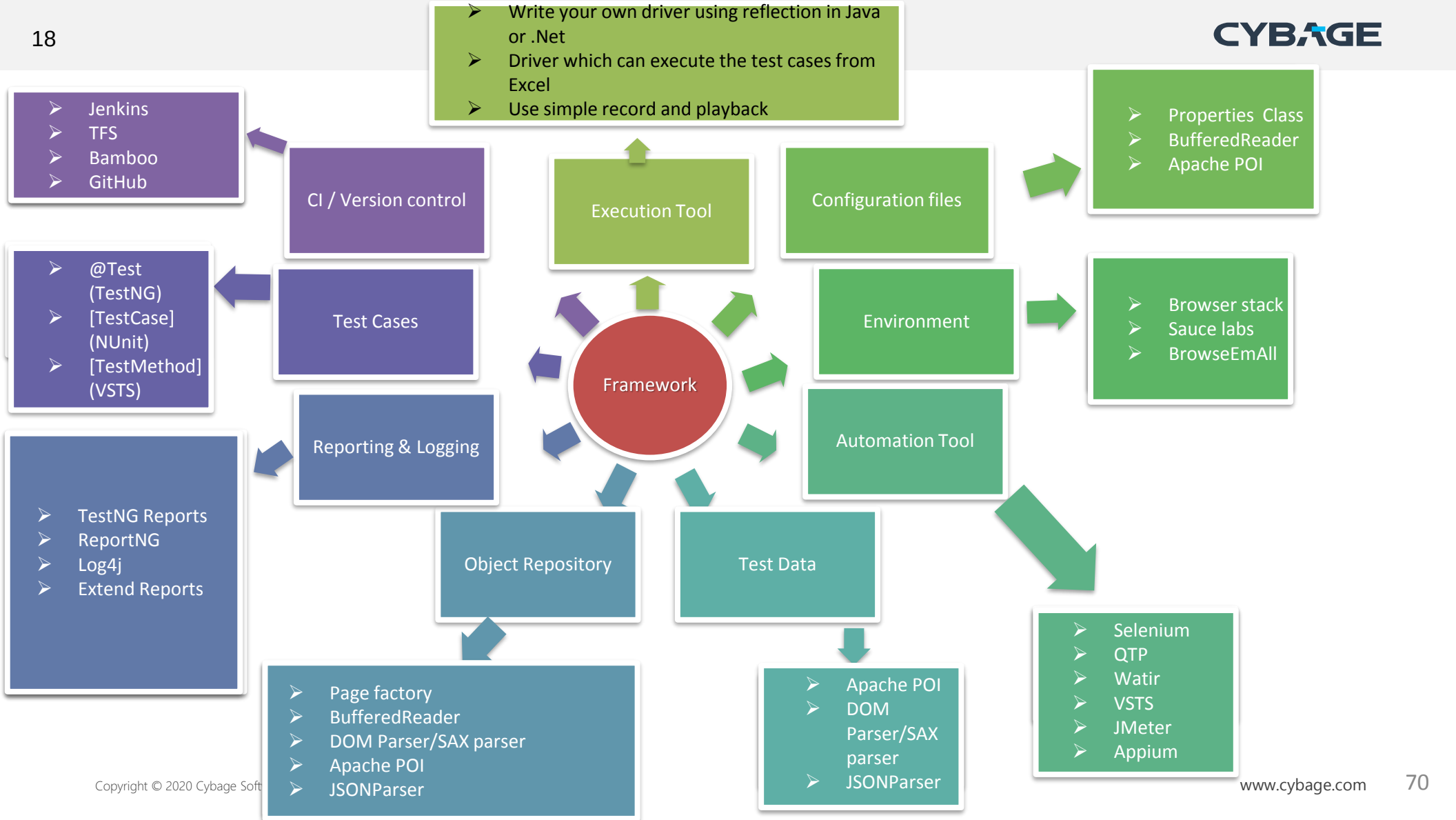


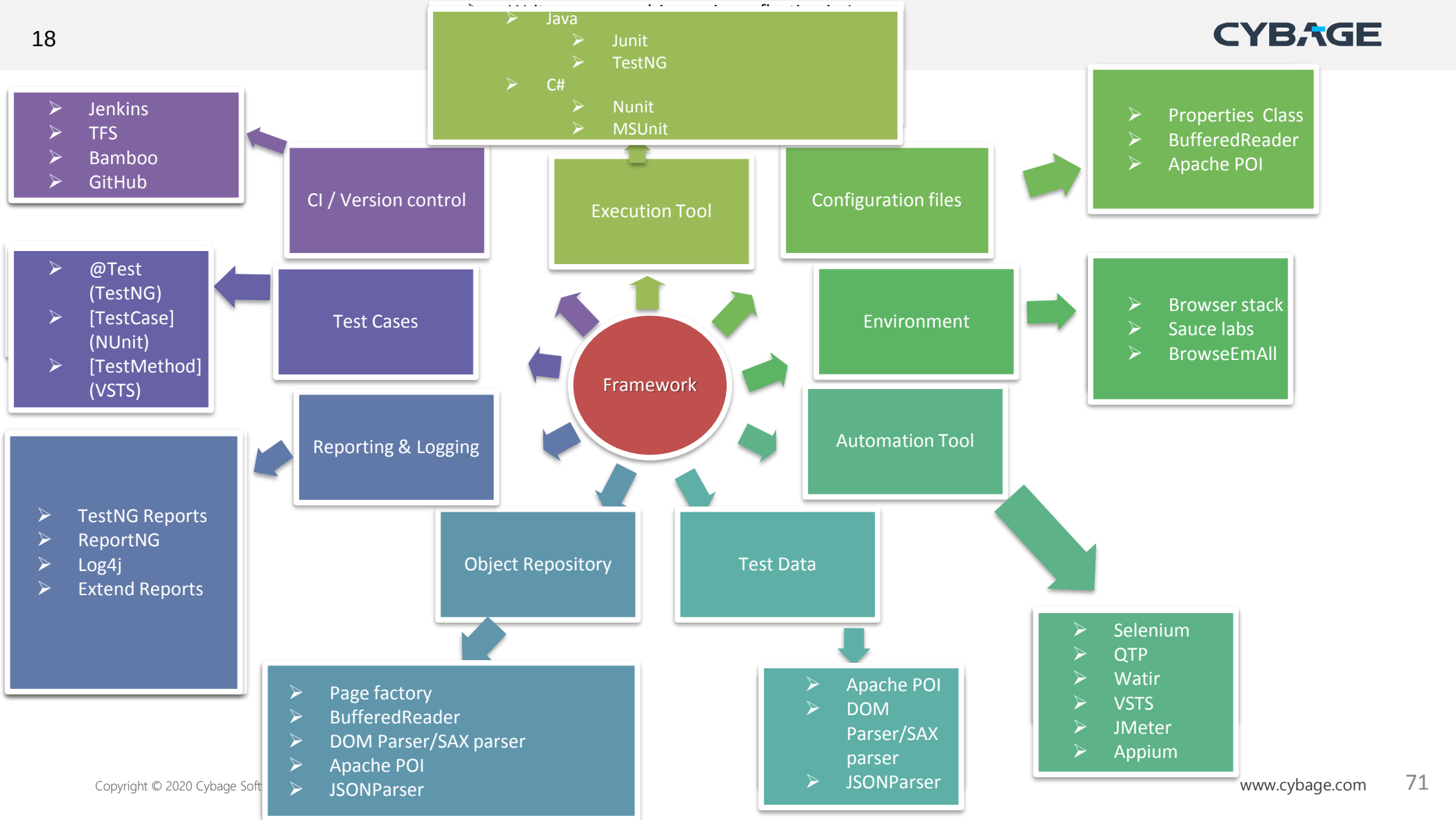


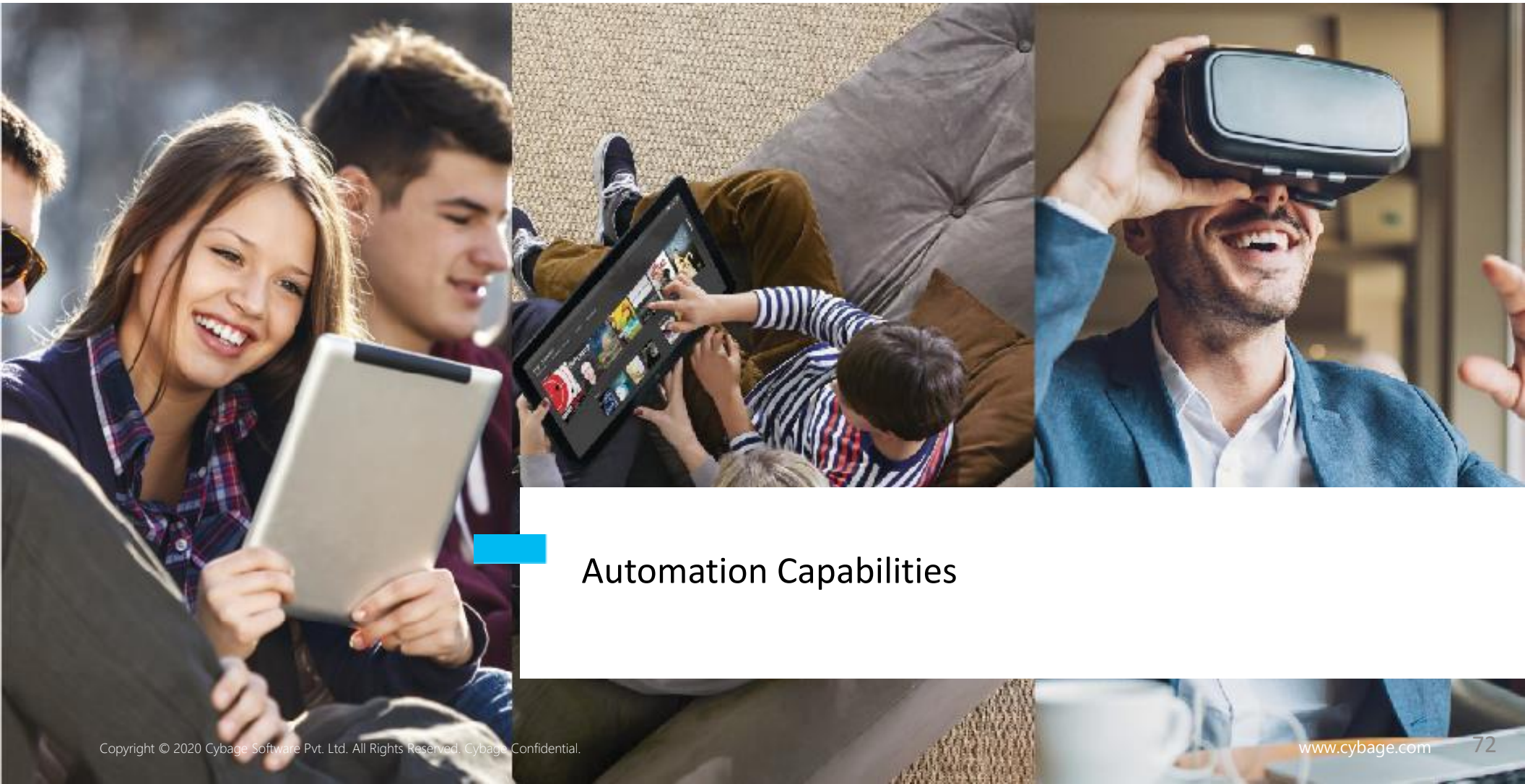












Automation Capabilities

Automation Testing | Capabilities and Tools

Coverage Across Layers	Types of Framework	Next Gen Technologies	Business Technology Assimilation	Accelerating Edge
End-to-end automation services across different layers : UI, Middleware & Database	Experience in designing and implementing test automation frameworks (modular, data-driven, keyword-driven and hybrid)	Strong competencies in test automation for modern front end technology based applications and mobile applications	Strong skills in utilizing contemporary BDT frameworks	Sophisticated in-house automation frameworks and tools Continuous capability building in industry leading & emerging open source tools

Licensed	Open-Source	Frameworks	Programming languages	Reporting
Visual Studio	SeleniumHQ, WATIR	Cucumber	Scala	Allure
QuickTest Professional	appium	RSpec	Java	Extent Report
riatest	Protractor	specflow	JavaScript, RUBY	ReportPortal.io
Test Studio	CALABASH	Coypu	Microsoft .net	
TestComplete	Jasmine	Capybara	perl	
Ranorex	KARMA	robotframework	python	
	sahi open source, mocha	CYBAGEFUSION TEST AUTOMATION FRAMEWORK		
		TestNG		

API Testing | Capabilities and Tools

Group Expertise	Technology Exposure	Domain Coverage	Accelerating Edge
Dedicated group of **Architects** and Expertise on executing wide spectrum of testing for SOA and API based technologies.	Expertise in tools and frameworks on different technologies like **Java , .Net , Python , Scala , Javascript etc.**	Experience of providing solutions for different business domains like **M&E, T&H , eCom and Retail** .	**Accelerators** and **enablers** providing better requirement analysis and defining best practices for test design and execution

Licensed

- PARASOFT SOAtest
- SoapUI NG Pro by SMARTBEAR
- LoadUI NG Pro
- Ready! API

Open-Source

- SoapUI by SMARTBEAR
- Apache JMeter
- POSTMAN
- Runscope
- WebInject

Frameworks

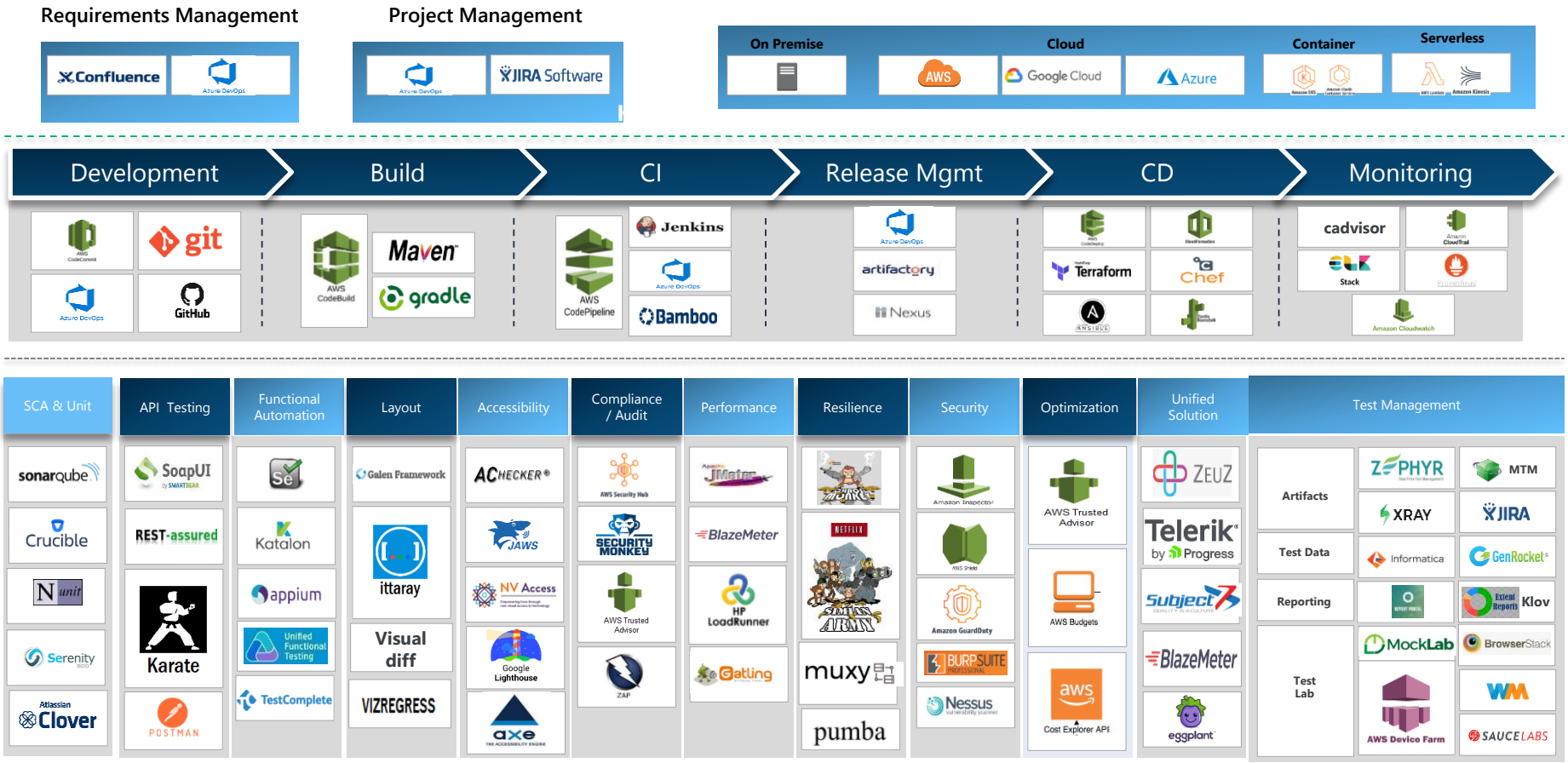
- Jersey – RESTful Web Services in Java.
- REST-assured
- frisby.js
- mocha · chai · Super test Sinon.JS
- Chakram

Programming Languages

- Java
- JavaScript
- Microsoft .net
- Scala

CYBAGE

Typical Test Engineering Landscape



Facts about Automation

- Achieving 100% test automation is unrealistic goal
- No immediate payback on the investments
- Role of manual testers can not be eliminated with test automation
- Do not expect defect count to increase drastically and automation to find some hidden defects
- Team needs ramp-up time to learn the tool, create a framework
- No available tool in the market supports all the systems and GUI objects
- Automation is not a secondary job

Thank You!