# Automation Testing - Project Based Answers

## 1. What is the use of Automation Testing?

**Automation testing is used to reduce manual effort, increase test coverage, and improve accuracy in testing.  
In projects, automation helps to:  
- Run repetitive test cases like regression, smoke, and sanity tests.  
- Save time and cost compared to manual testing.  
- Execute tests across multiple browsers, devices, and environments.  
- Improve reliability by eliminating human errors.  
- Support continuous integration and continuous delivery (CI/CD).**

## 2. What do we need to Automate?

**In a project, we generally automate:  
- Regression test cases (repeated after every build).  
- Smoke/Sanity test cases (basic functionality checks).  
- Cross-browser testing (Chrome, Firefox, Edge, etc.).  
- Data-driven test cases (where same test runs with multiple inputs).  
- Repetitive test cases (login, form submission, search, checkout, etc.).  
- Critical business flows that must work without fail.  
  
We avoid automating one-time or frequently changing test cases.**

## 3. What is Selenium?

**Selenium is a popular open-source automation testing tool used for automating web applications.  
- It supports multiple programming languages (Java, Python, C#, etc.).  
- Works across different browsers (Chrome, Firefox, Safari, Edge).  
- Provides flexibility to integrate with TestNG, Maven, Jenkins, etc. for CI/CD.**

## 4. Advantages of Selenium

**- Open Source → No license cost.  
- Supports multiple browsers (cross-browser testing).  
- Supports multiple languages (Java, Python, C#, etc.).  
- Integration friendly (Jenkins, Maven, TestNG, Docker, Git).  
- Parallel execution using Selenium Grid.  
- Large community support for troubleshooting.**

## 5. Difference between Selenium and QTP (UFT)

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| **Feature** | **Selenium** | **QTP (UFT)** |
| **License** | **Open source (Free)** | **Commercial (Paid)** |
| **Application Support** | **Web applications only** | **Web + Desktop applications** |
| **Language Support** | **Multiple (Java, Python, C#, etc.)** | **Only VBScript** |
| **Browser Support** | **Wide (Chrome, Firefox, Safari, Edge)** | **Limited** |
| **Community Support** | **Very large** | **Smaller compared to Selenium** |
| **Flexibility** | **Highly customizable with frameworks** | **Less flexible** |