**Testing**

Designing an automaton Frameworks from Scratch

phases of the Software Testing Life Cycle  
components of the Test Plan?  
AWS Eco system  
What is Equivalence Partitioning?

**What are the different components of a test plan?**

Design an Automation framework for testing REST APIs?  
Explain and design components of the automation framework for a web application?  
AWS Elastic Search  
hashtag maps in Java  
**Selenium Web Drivers suite components**

**Coding**

Remove duplicates from a string.  
Swap values of two variables  
Sort array without built-in sort methods.

sorting of arrays

Program to swap two numbers.

Write a program to check whether a given string has balanced parentheses?

**JAVA**

1.What is the difference between a while statement and a do statement?  
2. data encapsulation  
3. Encapsulation principle?  
4. Polymorphism principle. Explain the different forms of Polymorphism.

5. creation of classes & Objects

6. OOP's concepts in Java

**Selenium**

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**1.What is the difference between a while statement and a do statement?**

* While loop checks **the condition first and then executes the statement**(s), whereas do while loop will **execute the statement(s) at least once**, then the condition is checked.
* While loop is entry-controlled loop, whereas do while is exit controlled loop.
* In the while loop, we do not need to add a semicolon at the end of a while condition, but we need to add a semicolon at the end of the while condition in the do-while loop.

**2. What is data Encapsulation?**

**Data Encapsulation:**  
Encapsulation is the process of adding additional information when data is traveling in OSI or TCP/IP model. The additional information has been added on sender’s side, starting from Application layer to Physical layer.

**Example**

Containers are just one example of encapsulation in coding where data and methods are bundled together into a single package.

**SELENIUM**

**1. Components of Selenium Web driver?**

| **Component** | **Description** | **Major Differences** |
| --- | --- | --- |
| Selenium IDE | A browser extension for recording, editing, and replaying automated tests directly within the browser. | - Provides a simple, record-and-playback interface for creating test cases without writing code. - Ideal for beginners and quick tests during development. |
| Selenium RC | An older version of Selenium, now deprecated in favor of Selenium WebDriver. | - Used JavaScript functions injected into the browser to interact with web elements. - Slower execution and complex setup compared to WebDriver. |
| Selenium WebDriver | A powerful tool for automating web browsers, providing a programming interface for interacting with web elements. | - Supports multiple programming languages (Java, Python, JavaScript, etc.) and browsers (Chrome, Firefox, Edge, etc.). - Allows more sophisticated interactions and assertions compared to Selenium IDE and RC. - Offers better performance, stability, and support for modern web technologies. - Preferred choice for professional test automation due to its flexibility, scalability, and maintainability. |
| Selenium Grid | A tool for running multiple tests across different browsers, operating systems, and machines in parallel. | - Enables distributed test execution by creating a grid of interconnected nodes (Hub and Nodes). - Allows tests to run concurrently across various environments to reduce execution time. - Facilitates cross-browser testing and scalability by leveraging parallel execution. - Enhances test coverage and real-world simulation by testing applications in diverse user environments. |

**2. What are the different components of a test plan?**

**What are the test plan and their types?**

A test plan is a comprehensive document that lists the test strategy, goals, timetable, projections, deadlines, and resources needed to complete that specific project. The sorts of test plans are as follows: Master Test Plan, Test phase plan, and Specific test Plan.

**What is a Test Plan with an example?**

A test plan is a detailed document that outlines the testing methodology, objectives, schedule, forecasts, due dates, and resources required to finish that project. To finish the wishlist function on an e-commerce website by a certain date and to include the test cases that would be used to test the feature, for instance, a team might develop a test plan.

**What is included in the test plan?**

The test approach, goals, timetable, projections, deadlines, and resources needed to complete that specific project are all included in the test plan.

**What is the difference between a test case and a test plan?**

The test plan contains the goals, test approach, and resources for completing a task, while the test case is the input on which the project is tested.

**What are the five most important components in a test plan?**

A test plan’s five most crucial elements are the test strategy, objectives, schedule, estimates, and deadlines.

**AWS Elastic Search**

Elasticsearch is a distributed search and analytics engine built on Apache Lucene. Since its release in 2010, Elasticsearch has quickly become the most popular search engine and is commonly used for log analytics, full-text search, security intelligence, business analytics, and operational intelligence use cases.

Elasticsearch provides near real-time search and analytics for all types of data. Whether you have structured or unstructured text, numerical data, or geospatial data, Elasticsearch can efficiently store and index it in a way that supports fast searches.