**Task 14**

1. What is the difference between automated and manual testing in software development?

**Automation Testing**

Automation Testing uses automation tools to execute test cases.

Automated testing is significantly faster than a manual approach.

Automation does not allow random testing

The initial investment in the automated testing is higher

Automated testing is a reliable method, as it is performed by tools and scripts. There is no testing Fatigue.

**Manual Testing**

In manual testing, test cases are executed by a human tester and software.

Manual testing is time-consuming.

Exploratory testing is possible in Manual Testing.

Investment is needed for human resources.

Manual Testing is suitable for Exploratory, Usability and Adhoc Testing. It should also be used where the AUT changes frequently.

2.Explore some of the most common automation testing tools available on the market?

Selenium:

Selenium is one of the most, if not the most, popular open-source frameworks for web testing automation. Its suite of software consists of Selenium WebDriver, Selenium Grid, and Selenium IDE.

* Supported programming languages: Java, C#, Python, JavaScript, Ruby, PHP, etc.
* Supported browsers: Chrome, Firefox, IE, Microsoft Edge, Opera, Safari, etc.
* Testing on local or remote machines via the Selenium server

Integrations with other testing frameworks (e.g., TestNG for reporting) and CI/CD tools

Appium

Appium is also an open-source automation testing tool, but for mobile applications.

* Supported programming languages: Java, C#, Python, JavaScript, Ruby, PHP, Perl
* Cross-platform testing with reusable test scripts and the same APIs

Test complete

TestComplete can automate functional UI testing for desktop, mobile, and web applications.

* Supported programming languages: JavaScript, Python, VBScript, JScript, Delphi, C++, C#
* Flexible methods for test design: record & playback, manual and scripting modes with built-in keywords
* Parallel, cross-browser, and cross-device testing

Cypress

supporting JavaScript frameworks, Cypress is a developer-centric automation tool for end-to-end web testing.

* Supported programming language: JavaScript
* Snapshots of test step execution and debuggability from familiar developer tools
* Control over function behavior, server response, timers, and network traffic

3.What is Cross Browser Testing ?

Cross-browser testing is the practice of ensuring that a website works across various browsers and devices. Web developers should consider:

* Different browsers, including slightly older ones that don't support all the latest JS/CSS features.
* Different devices, from desktops and laptops to tablets and smartphones, to smart TVs, with varying hardware capabilities.

4.Write a Blog on TDD and BDD ?

Test-driven development (TDD) is a [software development process](https://phoenixnap.com/blog/software-development-life-cycle) that relies on the repetition of a short development cycle: requirements turn into very specific test cases. The code is written to make the test pass. Finally, the code is refactored and improved to ensure code quality and eliminate any [technical debt](https://phoenixnap.com/blog/technical-debt). This cycle is well-known as the Red-Green-Refactor cycle.

Behavior-driven development (BDD) is a software development process that encourages collaboration among all parties involved in a project’s delivery. It encourages the definition and formalization of a system’s behavior in a common language understood by all parties and uses this definition as the seed for a TDD based process.