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APPOINTING THE BEST TOOLS FOR SOFTWARE TESTING

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Introduction: Testing is an integral part of any successful software project. It also includes the main part of Quality Assurance (QA). The testing process detects bugs in the product and tries to make it according to requirements and validates and verifies a software product's functioning. It has 2 types: Manual and Automation testing. In manual testing, test cases are executed manually without any assistance from tools or scripts. However, with automated testing, test cases are executed with tools and scripts. This process itself is divided into sub-processes. This division makes it more productive. These are the following.

Software Testing Life Cycle (STLC)

1. Requirement analysis
2. Test planning
3. Test cases creation
4. Test environment setup
5. Test execution
6. Test closer

Between these phases, one phase is the key moment for appointing the test tools. It is a Test planning. Because it includes the process, which makes the testing more productive. It is a selection Testing tool. Tool assistance to the testing process for promptly finding defects that make it easier Regression testing. Regression is a type of testing that engage testing changes to the software or environment to keep the operating system functioning. This testing type helps us avoid the butterfly effects. However, it takes more time for checking the old and new functionalities of a software product. That is why regression testing usually doing automated for the economy of time and money. Considering that testing arranges half of the product budget. It means automated testing plays a key role in the testing phase.

Analyzing tools: There are a lot of different tools for automating with different testing types and functionalities. Therefore, testers have to analyze and select the right tool. For this, testers should detect the testing type and the devices where is a product run. However, this analyzing process is very difficult, because testers also should research tools that may do this testing. Tools have several features: Pricing, Open Source, Supporting Platforms (Web, Desktop, Mobile), Programming skills, recording, and Playback, etc. After the results, they may choose tools and start automation tests. Sometimes testers may not have enough time for choosing the right tool. There may be many reasons, for example, lack of time or the company's fraction of money for the purchasing license of the selected tool. If he has not had sufficient time or finance which the company promotes this can result in the product will not prepare to release and deploy until the deadline.

Selenium: Selenium is a stand-out automated tool in the world. This tool is an option for several companies such as Google, Netflix, HubSpot, Fitbit, etc. It is an open-source and free tool that supports different browsers (Google Chrome, Internet Explorer, Safari, Opera, Microsoft Edge) and platforms like Windows, Mac, and Linux. Selenium also has a wide range of maintained programming languages such as Python, Java, C#, Ruby, JavaScript, etc. Selenium has 4 sections in its suit. They are Selenium Remote Control, Selenium WebDriver, Selenium IDE, and Selenium Grid.

Pros of Selenium

- Free
- Connect with Agile, DevOps, and Continuous Delivery workflow
- Support mobile testing
- Extensive range of supported languages, platforms, and browsers
- Huge community
- Large library of plugins and extensions

Cons of Selenium

- Steep learning curve
- Only used for web-based apps
- No built-in image comparison
- No tech support
- No reporting capabilities

TestComplete: Test Complete is a GUI testing tool that uses automation testers. In this tool, You may test functional UI and this platform created by SmartBear. If you write one of these languages Javascript, C#, C++, Python, and VBScript then you easily use this tool because these programming languages are supported by this tool. It has record and playback features which make it comfortable who use a plugin for websites and this tool can test desktop, mobile, and web applications. It supports Windows Operating System.

Pros of TestComplete

- Multiprogramming and codeless test creation
- AI and ML - Recognition object
- Cross-devices, Cross-browser, and Parallel
- Integration with JIRA

Cons of TestComplete

- It does not support documents (like Word documents)
- High price for the license
- Only Windows
- Low-level Python interpretation

Postman: Postman is a famous API testing tool. You easily test RESTful APIs. Because this tool will save you from writing code and checking apps. You will save time with this. You will be able to download CSV and JSON files easily and conduct your tests. It supports both the desktop app and the website for free. Installing is able on Mac Windows and Linux Operating Systems.

Pros of Postman

- User-Friendly interface
- Multiple HTML methods, Swagger, and RAML formats
- Understandable UI
- Free and Open Source

Cons of Postman

- Only Desktop
- Extremely high disc's usage

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HORIZONTAL LİFT PRİNSİPİ ƏSASINDA İŞLƏYƏN PİLOTSUZ METROPOLİTEN NƏQLİYYAT VASİTƏLƏRİNİN LAYİHƏLƏNDİRİLMƏSİ MƏSƏLƏLƏRİ

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Metropoliten nəqliyyatının istisnalarına qoyulan tələblər sırasında sərnəşinlərin təhlükəsizliyin təmin edilməsi hər zaman aktuallığı ilə seçilən tələblərdən biridir. Müasir günümüzdə sərnəşinlərin təhlükəsiyi məsələsi problematik bir səviyyədə daha da aktual olduğu:

- dünyanın kiçik və iri meqapolis şəhərləndə əhali artımının sürətinin müsbət dinamikası;
- ümumdünya terror təşkilatlarının paylanmış qruplaşmalar formasında yayılması;
- əhali arasında gündəlik həyatlarının psixoloji gərginlik şəraitində keçdiyi ayrı-ayrı insanların say etibarlı ilə durmadan artması və s. bu kimi digər amillərlə təsbit edilməkdədir.

Bu mənada, sosial-oqotosadi həyatın hər bir sahəsi üzrə yüksək inkişaf dinamikasına malik olan Bakı şəhərində istismarda olan metropoliten nəqliyyatında sərnəşinlərin təhlükəsizliyi məsələlərinin bu amillərlə bağlı olaraq, araşdırılması, tədqiqi, onların əsasında yeni təkliflərin, realizasiya üsullarının və vasitələrinin hazırlanması aktualdır, müasirdir.

Horizontal lift prinsipi hələ keçən əsrdən metropoliten sistemində tətbiq edilən prinsiplərdən biridir [1,2]. İndiki MDB məkanında Rusiya Federasiyasının Sankt-