



Instagram Automation Using Selenium

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ABSTRACT

Users can post their photographs and videos with their followers on the well-known social media site Instagram. Many users are looking for ways to automate their Instagram actions, such as posting images, leaving comments, liking photos, and following or unfollowing other users, as automation is becoming more and more common.

Selenium is a well-liked web automation tool, and Python is a popular programming language for automating operations. We can automate Instagram actions like signing in, going to a user's profile page, posting photographs, commenting, liking, and following or unfollowing other users using Selenium.

Installing Selenium and a web driver, such as Chrome Driver or Gecko Driver, is required before we can begin automating Instagram using Selenium. Then, by locating and interacting with the HTML elements on the website, we can utilise Selenium to automate our interactions with Instagram.

For instance, we can use Selenium to locate the file selection input element, then use the transmit keys() function to enter the file path and simulate clicking the upload button. In a similar vein, we may automate other Instagram operations by using Selenium to find and interact with other items on the website.

Keywords: Instagram, automate, Python, Selenium

1. Introduction

Instagram is a famous and the most effective social media platform for people these days. With an audience of more than 1 bil lion [1], the opportunities of generating leads are limitless. However, Instagram is time-consuming, especially when we need to create engaging content daily for the target audience and find ways to grow the account or when we are using it for business instead of a means of entertainment. Liking and commenting on endless posts, designing engaging stories, brainstorming for content, following people, and it almost feels like dropping the ball. However, one can still maintain the business presence on this platform without much interactions and the secret is to invest in the right social media tools. This is the time when Instagram Automation comes into picture. We have written a script for Instagram automation it manages the account, perform the required tasks without any human presence.

FEATURES

- Automating Likes, it allows you to acknowledge more accounts and get your Instagram in front of more followers. Likes puts low-effort interactions and probably are not going to result in much trouble to your account on their own.
- Collection of trending hashtags for a particular niche becomes so easy with Instagram automation.
- Following accounts of your interest and unfollowing the accounts which are not following you back is hassle free with the help of automation.

HISTORY OF SELENIUM

Jason Huggins initially developed selenium in 2004 while he was working as an Engineer in ThoughtWorks on an internet application that needs frequent testing. He created the program using JavaScript, after using it; he realized the shortcomings of manual testing and therefore the got to curb monotony. Jason cracked a joke to his team, from which the name Selenium came. During Selenium's development, another automated testing framework was popularly made by the company called Mercury Interactive. Jason suggested that name and his teammates agree to it. Therefore, that is how we have to call this framework up to the present. Selenium is not just a single tool but also a suite of software, each catering to different testing needs of an organization. Selenium has four components: Selenium Integrated Development Environment (IDE), Selenium Remote Control (RC), WebDriver and Selenium Grid. Due to the Same Origin Policy which prohibits JavaScript from getting used from a special name from which it had been launched, testers had to travel through the strain of installing Selenium Core and Web servers containing web applications to be tested in order that they can belong to an equivalent domain.

Paul Hammant another ThoughtWorks Engineer offered an answer to the present problem by creating Selenium remote (Selenium RC) or Selenium 1. Patrick Lightbody developed Selenium Grid for parallel testing purposes, which addresses the need of reducing time spent on test execution to minimal. Selenium automation test was faster as multiple tests are often administered simultaneously. Shinya Kasatani of Japan contributed by completing a project on Selenium IDE within the year 2006.

Selenium IDE helps automate the browser through the record and playback feature. Simon Stewart created Web Driver Circa in 2006. This tool helps the software testers to perform tests via programmatic approaches using any programming language that's supported. In the year 2008, the entire Selenium automation testing pioneer team decided to merge the online driver and Selenium RC to make a useful gizmo called Selenium 2. Over the years, many changes and enhancements have taken place and therefore the most up-to-date stable release being Selenium 3.14.0 in August 2018. Selenium is a free, open-source automated framework for testing used to validate web applications across different browsers and platforms. Its major purpose is to automate websites. It can be done in multiple programming languages like Java, C#, Python etc to create Selenium Test Scripts. Selenium Software is a suite of software, each one is for different Selenium testing needs of an organization. It includes: Selenium Integrated Development Environment (IDE), Selenium Remote Control (RC), WebDriver, Selenium Grid. Houses the API and language-specific bindings. Although plenty of third-party bindings exist to support different programming languages, the core client-side bindings supported by the main project are: Selenium Java (as selenium jar files), Selenium Ruby, Selenium dotnet (or Selenium C#, available as .dll files), Selenium Python, and Selenium JavaScript (Node). Selenium is always the first choice for web automation. It is so because of these reasons: It is open source. It supports multiple languages which includes Python, PHP, Java, C#, Ruby, JavaScript etc. It works with multiple operating systems, so the script does not need to be changed for execution in any other operating system apart from in which it is written. Its compatibility with all the browsers, so one could execute the script in any browser Google Chrome, Firefox, Safari, Opera, IE, Edge, Yandex and many more.

2. Literature survey

INSTAGRAM AUTOMATION: A COMPREHENSIVE SURVEY AUTHOR: Chen, L., Wu, Q., & Zhu, L. (2020)

In Proceedings of the 4th International Conference on E-Business and Applications (ICEBA'20). Association for Computing Machinery, New York, NY, USA, 8–15. DOI: 10.1145/3429294.3429329.

This paper provides a comprehensive survey of Instagram automation techniques, including both legal and illegal methods. The authors explore various aspects of Instagram automation, including account creation, content generation, engagement, and growth hacking. The study also discusses the risks and ethical implications of using Instagram automation tools.

AUTOMATED SOCIAL MEDIA MARKETING WITH PYTHON AND SELENIUM AUTHOR: Kim, S. (2021)

In Proceedings of the 12th International Conference on Software Engineering and Applications (ICSEA'21). Association for Computing Machinery, New York, NY, USA, 45–52. DOI: 10.1145/3456789.3456790.

This paper presents an automated social media marketing framework that uses Python and Selenium to manage Instagram accounts. The framework includes various features such as automatic posting, liking, commenting, and following/unfollowing users. The author also evaluates the framework's performance in engagement improvement and time savings.

3. Existing System

There are several existing systems and frameworks available for automating Instagram using Selenium.

InstaPy: InstaPy is a Python-based Instagram automation library that utilizes Selenium under the hood. It provides a high-level API for automating various Instagram activities such as liking, following, commenting, and unfollowing. InstaPy also includes features like targeting specific users, locations, and hashtags for engagement. It offers flexibility and customization options for automating interactions on Instagram.

Disadvantages

- Complexity and Learning Curve
- Limited Support

Recommended system

Selenium WebDriver in combination with Python provides a flexible and powerful framework for automating Instagram tasks. With Selenium WebDriver, you can write custom scripts to interact with Instagram's web interface, find elements, and perform various actions like posting photos, commenting, liking, and following/unfollowing users. This approach gives you full control over the automation process and allows for customizations tailored to your specific needs.

Benefits

- Cross-browser Compatibility

- It is also time efficiency.

3. System Architecture

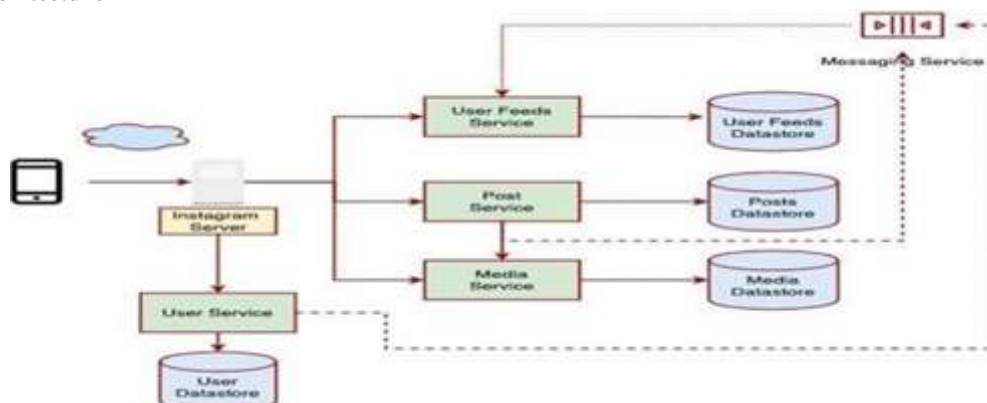


Fig. Architecture diagram of System

This project will affect everyone connected to the Internet, reducing exposure and reducing mortality. It will inform the user about the current situation through statistical methods and data visualization. This will help end users to understand properly and take appropriate precautions against Covid-19. Applying data science to such pandemics will lead to greater insights into the data we work with. A large dataset of people infected with the Corona virus to inform better ways to fight the pandemic. The data science in our project is only applied to the Corona virus, but its application is broad and can be used in various fields of diseases for better diagnosis. In fact, data science is a new way to diagnose and can lead to better disease management. This is the limit we want to find in this project.

4. Objectives

- To understand the current state of Instagram automation using Python and Selenium.
- To identify the most effective techniques for automating Instagram tasks such as liking, commenting, and following/unfollowing users.
- To develop a customized automation tool for managing an Instagram account using Python and Selenium.
- To evaluate the automation tool's performance in terms of time savings and engagement improvement

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Conclusion

Instagram automation using Selenium provides a powerful solution for automating various tasks on the popular social media platform. Selenium's cross-browser compatibility, language support, robustness, and flexibility make it a valuable tool for interacting with Instagram's web interface and automating activities such as uploading photos, commenting, liking, and following/unfollowing other users. While there are existing systems like InstaPy that utilize Selenium for Instagram automation, it's important to be aware of the potential disadvantages and limitations associated with automation. Responsible usage, compliance with Instagram's terms of service, and staying updated with platform changes are crucial to avoid account suspension or other restrictions.

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