

Project Description

I recently worked on a personal project to address a need for myself and others for the automation of securing a driver exam booking slot.

Background

I am from Alberta, and during COVID, the provincial government cancelled all driving exams due to legitimate health and safety concerns. However, this caused a significant backlog of people who had been previously scheduled to take the driving exams, as well as new people, like myself, who wanted to schedule their driving exam. In addition to the high demand for available booking slots, the system for scheduling driving exams was not very user-friendly. The government would also only release a limited number of driving exam spots periodically. The frustrating part was that the booking website required you to fill out and navigate several steps before discovering that no booking slots were available.

Problem (What, When, Impact)

The Alberta driving exam booking system requires a significant number of steps and the manual entry of information for each of the steps to get to the point to access a booking slot if available. To secure a booking slot, the website must be checked periodically throughout the day and every day until a driver exam booking slot can be obtained.

This approach for booking caused frustration for the users because of the time and effort to enter data and navigate several steps before finding out that no booking slots were available.

Brainstorm Solutions

I raised a ticket with the Alberta government website administrator to see if the process could be improved, but I didn't get any response.

I considered writing my own javascript or another scripting language to fill in and navigate the steps.

I looked into solutions that may already be available to autofill information to improve the process. Reading through the forums, I found that AutoHotkey was one open-source tool that was mentioned to help automate the entry of data and navigation of website inputs.

Of all of the options, AutoHotkey was the most promising scripting tool to use for automation.

Prototyping

I downloaded AutoHotkey and started prototyping a script to navigate and populate the data. I encountered a few problems and constraints. One of the constraints was that AutoHotkey had examples and libraries that worked well with Internet Explorer rather than any other web browsers. Although I am a Chrome user, this wasn't a significant issue. I could use the Internet Explorer browser natively installed with Windows. A second problem I encountered was that it was relatively easy to populate the data and navigate to the next step. However, I had to find a way for the script to wait for the next step to complete and the following resultant next step webpage to load. I researched and

prototyped a few ways to recognize the successful load of the following step webpage and settled on a combination of a timer and a check of the webpage's characteristics.

Design & Implementation

Once I had proven that all of the needed steps were technically feasible and that there was nothing to prevent the implementation, I designed the script so that all the variables could be defined in one place at the beginning of the script. Then I modified the prototype script to be more robust and to handle varying response times of the government website and my own network performance. I then implemented all of the logic to address the steps needed to get to either a successful booking or to see that no booking slots were available.

Continuous Testing / Build On Successful Tests

I started using the script manually, looking for cases where the script would not succeed and addressing those corner cases that needed some adjustment or some additional logic to address. After using the script manually several times for a day and having no further issues, I added the script logic to check if a booking slot could be obtained periodically and bring the web browser to the foreground if a booking slot was obtained. This approach would allow me to go through the final booking steps manually.

Outcome

I secured a booking slot within a few days of using this script. In comparison, there were news articles about how people had been trying to obtain a booking slot for several weeks. I also shared this with friends and family who were in similar situations, and they were able to modify it for other types of driving exams to suit their needs.