GuideAutomator: Continuous Delivery of End User Documentation

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Abstract. User guides, also known as user manuals, are a type of documentation aimed at helping a user operate a specific system. For software systems, user guides usually include screenshots that show users how to interact with the user interface. Because creating such screenshots is a slow, manual process, keeping the user guide up-to-date with changes in the user interface is challenging. We propose an approach in which the documentation writer interleaves the user guide text with source code that automates screen capturing. As a result, screenshots always reflect the latest software version, which makes the approach suitable for a project that uses continuous delivery. The approach was implemented as a prototype, called GuideAutomator.
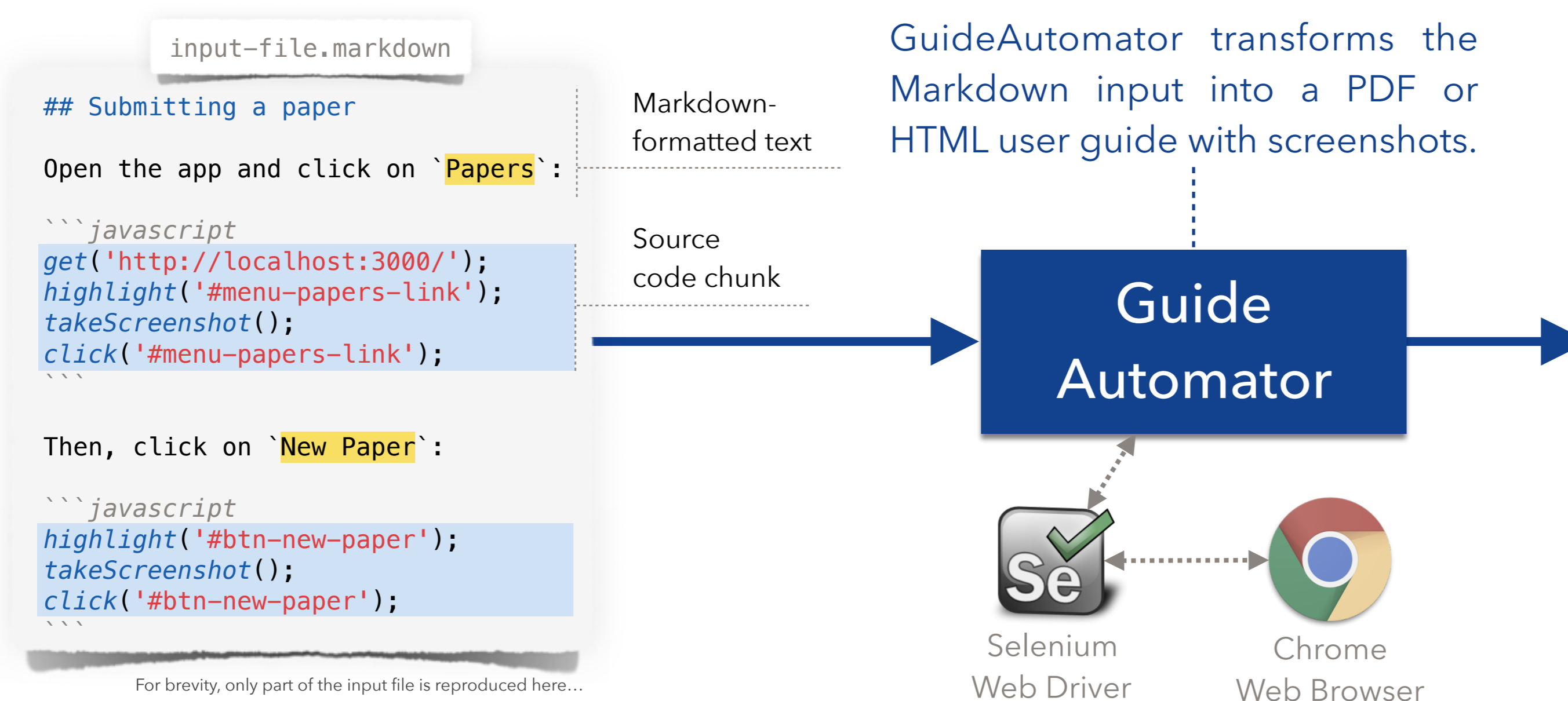
Creating screenshots for a user guide is a lot of work. Updating them after a UI change is a lot of rework.

	Create Screenshots	Update Screenshots
Traditional approach	5 min	5 min
Guide Automator	10 min	**25 s**

Table 1. Time spent to capture and edit 4 screenshots for the sample user guide on the right.

After automating screenshots with GuideAutomator, updating screenshots takes a few seconds.

With GuideAutomator, you write the user guide in the **Markdown** syntax interleaved with **source code chunks** that interact with a **web browser** to **capture** and **edit screenshots**. The source code is written in JavaScript using GuideAutomator's API, which relies on Selenium Web Driver to control a Chrome web browser window.

```
input-file.markdown

## Submitting a paper

Open the app and click on `Papers`:

```javascript
get('http://localhost:3000/');
highlight('#menu-papers-link');
takeScreenshot();
click('#menu-papers-link');
```

Then, click on `New Paper`:

```javascript
highlight('#btn-new-paper');
takeScreenshot();
click('#btn-new-paper');
```
```

Markdown-formatted text

Source code chunk

For brevity, only part of the input file is reproduced here…

GuideAutomator transforms the Markdown input into a PDF or HTML user guide with screenshots.

Guide Automator

Selenium Web Driver

Chrome Web Browser

What's in a user guide?

A user guide shows users how to accomplish **tasks** by following a sequence of **steps**, often illustrated by **screenshots**. Screenshots may require the creation of **sample data**, and may need to be **cropped** or edited to add **highlights**.

Submitting a paper — task

Open the app and click on `Papers`:

Then, click on `New Paper`: — step

— screenshot

Fill in the `title`, `authors`, and `abstract`, and click on `Create Paper`:

And that's it! Your paper should appear on the top of the list:

— highlight

Other benefits

- User guides can be integrated in the build process in a continuous integration server
- The build can break because of a user guide that needs to be updated

Future work

- Browser plugin (write code as you interact)
- Other output formats (slides, videos)
- Adapt for desktop and mobile apps
- Empirical studies

https://github.com/aside-ufba/guide-automator