

# PIXIES : A Front-End Monkey Testing Tool (Based on Python Webdriver)





# Related Work



- ▶ Gremlins
- ▶ A monkey testing library written in JavaScript
- ▶ For Node.js and the browser
- ▶ Updated on 20 Nov 2020
- ▶ 8.6K stars in Github



# Differences and Upgrades



- ▶ Use Python instead of JS
  - ▶ Easier for people to get started
  - ▶ More libraries to import
- ▶ Analyse the DOM Tree to simulate real scenes
- ▶ Prevent clicking on hyperlinks
  - ▶ For a more continuous testing process
- ▶ Bypass the security configuration of the browser
- ▶ Dynamically adjust the size of window

**Mentioned in Opening Report**

Disposed in python class "Resizer"



# Our Work



## ▶ Clicker

- ▶ Randomly click on the page visible area
- ▶ Prevent navigation automatically
- ▶ Switch back immediately when new pages are opened
- ▶ Identify clickable objects and focus on them

## ▶ Scroller

- ▶ Randomly scroll to different places of the main page



# Our Work



## ▶ Resizer

- ▶ Resize the page randomly
- ▶ Identify the max and min size of the page automatically

## ▶ Typer

- ▶ Generates random UTF-8 BMP characters and control keys (such as Shift, Enter, ESC etc.) and send them to the currently active element
- ▶ Prevent the page from navigating away
- ▶ Identify input objects and send keys to them

## ▶ Toucher

- ▶ Imitate touch events, supporting path touching



# Usage



- ▶ 1. \$ pip install pixies
- ▶ 2. Download chrome webdriver and add to the System Path

```
import pixies
cage = pixies.Cage('https://news.baidu.com')
cage.release()
```



# Params

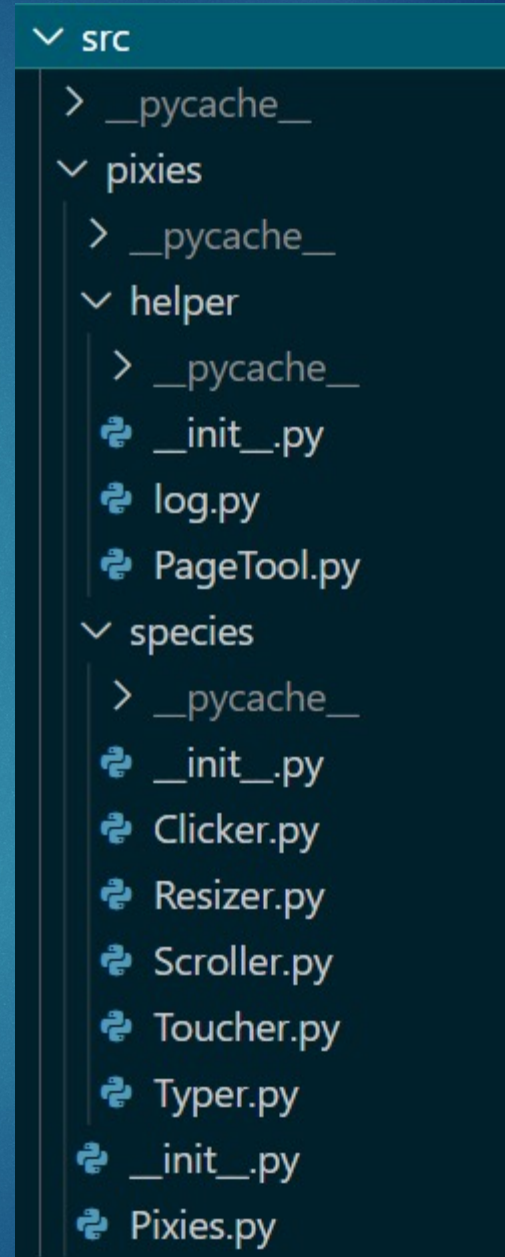


```
class pixies.Cage(  
    url, # necessary  
    pixieList = [  
        Clicker, Scroller, Toucher, Typer, Resizer  
    ], # optional, all pixie species by default  
    weightList = [], # optional, equal weight by default  
    browser = 'chrome', # optional, 'safari'|'chrome'|'firefox'  
    stopAtError = True, # optional  
)  
  
method pixies.Cage.release(  
    length = 100 # optional, times to run pixies  
)
```



# Code Structure

- ▶ Different species have different behaviors
- ▶ PageTool: used to communicate with the controlled page.

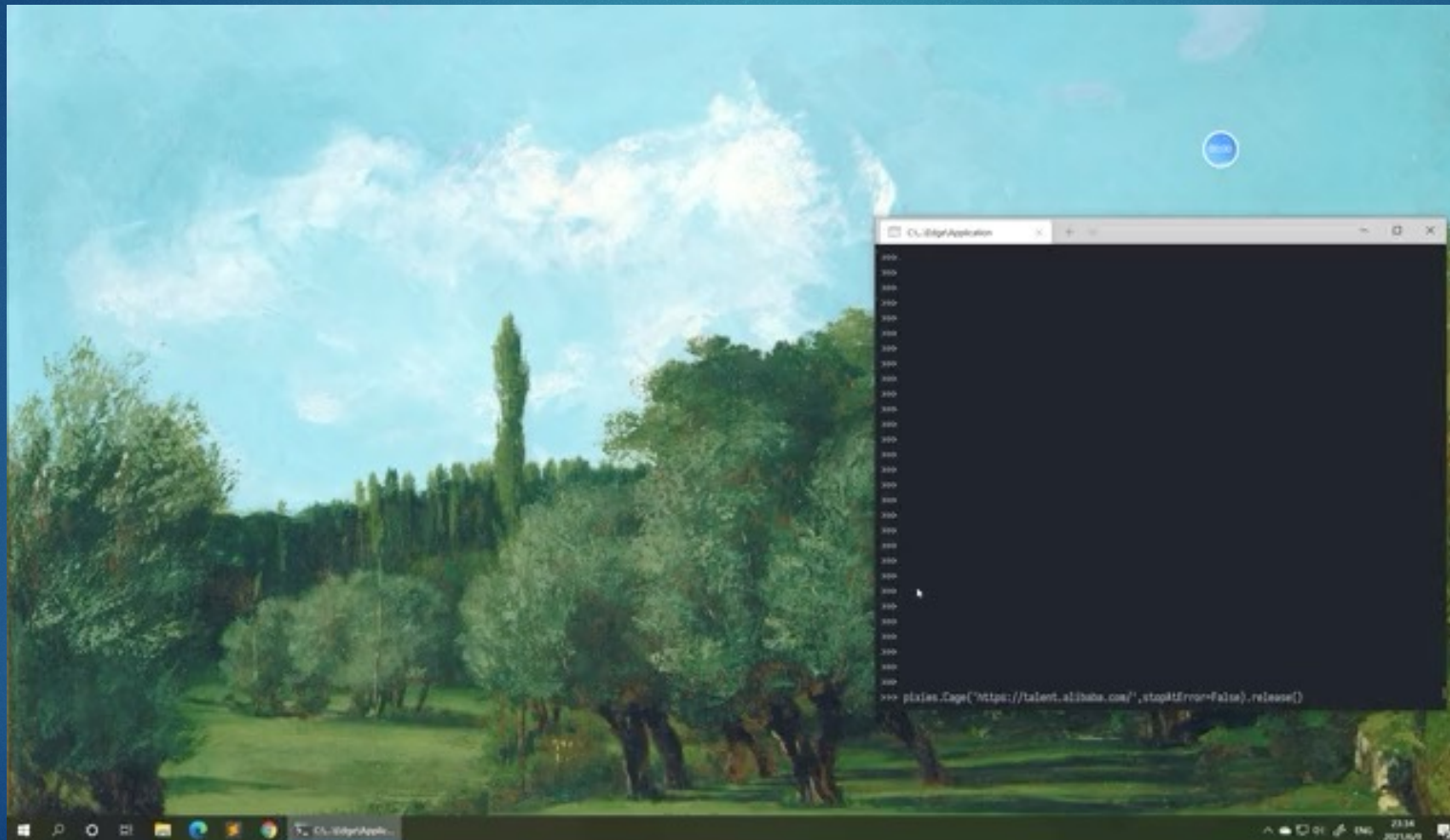




# A Testing Example



- Use Our Pixie to crash Alibaba recruitment site







喔唷，崩溃啦！

显示此网页时出了点问题。

错误代码：Out of Memory

[了解详情](#)