

# Test Automation Tool Using Image Processing

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# Why do we need it ?

- `find_element_by_id`
- `find_element_by_class_name`
- `find_element_by_css_selector`
- `find_element_by_xpath`

```
</div>
  <div class="gb_Id" id="gba"></div>
  <script>document.body.className=document.body.className.replace('nj','');
</script>
  ▼ <div id="gt-c" class="g-section">
    ▶ <div id="gt-bbar-c">...</div>
    ▶ <script>...</script>
    ▼ <div id="gt-form-c">
      ▼ <form id="gt-form" action="/" name="text_form" method="post" enctype=
        "application/x-www-form-urlencoded">
        ▼ <div id="gt-appbar">
          ▶ <div id="gt-apb-c">...</div>
        </div>
      ... ▼ <div id="gt-text-all"> == $0
        ▼ <div id="gt-main">
          ▼ <div id="gt-text-c">
            ▶ <div id="gt-langs">...</div>
            ▼ <div id="gt-text-top">
              ▶ <div id="gt-src-c" class="g-unit">...</div>
              ▶ <div id="gt-res-c" class="g-unit">...</div>
              ▶ <div id="gt-promo-lr">...</div>
              ▼ <div id="gt-lc" style>
                .
              </div>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
```

Not enough to test a game in Facebook...

# Why do we need it ?

The image shows a screenshot of a game interface on the left and its browser developer tools on the right. The game interface displays a grid of player avatars with names like 'TC-Bülent Y.', 'TC-Sual R.', and 'Mehmet Ö.', along with betting amounts and a 'Bahis' section. Below this is a 'Günün İyileri' (Today's Best) section with a list of players and their scores. The developer tools on the right show the DOM tree with an `iframe` element selected, which is the source of the game content. The `iframe` has attributes like `id="banner_frame"` and `src=".../html/dyn-banner.html?game=okey"`. The `Styles` pane shows the default `display: block` and `width: 100%` styles for the `iframe`.

- In `iframe`, it is not possible to find or to click images. So, image processing is used to find images, to score them and to click on them.

# Test Automation Tool

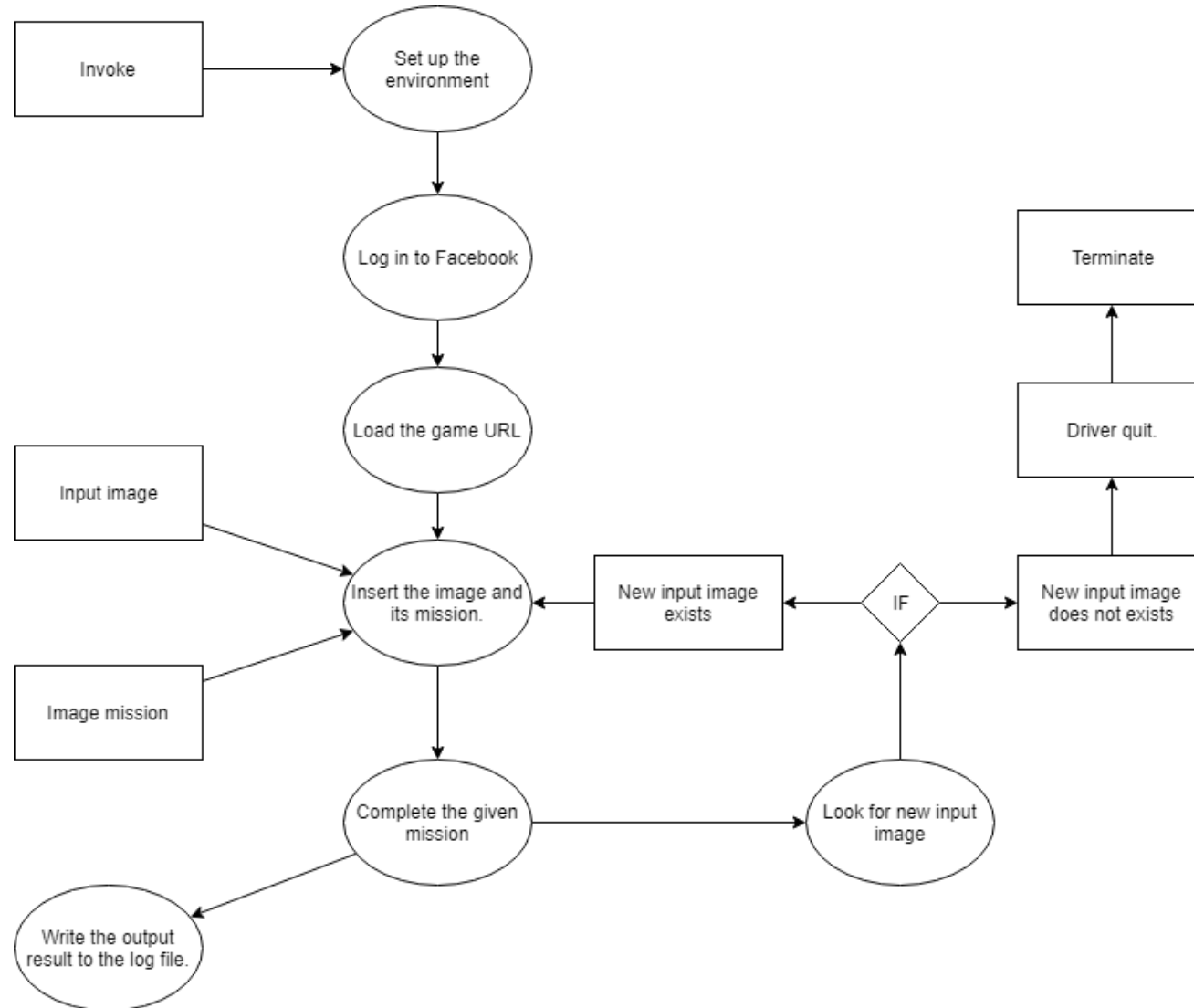
Necessary methods:

- Set up the environment.
- Log in to Facebook.
- Check if the image exists.
- Find the location of image.
- Click on image.
- Test the image detailed.
- Automate the process of asset preparation.

# Libraries

- `numpy`
- `sys`
- `pillow`
- `os`
- `fractions`
- `scipy`
- `selenium`

# Algorithm



# Methods

- `login_facebook(driver)`
- `browserstack_specific_test(browser, browser_version, os, os_version, game_type, game, register = False)`
- `clickToCoordinate(xloc,yloc)`
- `moveToCoordinate(xloc,yloc)`
- `uninstall(uninstallDirectory,ssDirectory,checkValue)`
- `testTheWebsite(websiteDirectory,ssDirectory,checkValue )`
- `findMatch(directoryOfElement, directoryOfScreen)`

# Methods

- `findMultipliers(value)`
- `cutTOpieces(undertest_directory,expected_directory,element_directory,how_detailed = None)`
- `compare(directory,directory1,c1,c2)`
- `runDetailedTest(undertest_directory,expected_directory,element_directory,how_detailed = None)`
- `checkIfExists(expected, undertest, checkValue)`
- `writeToTxt(directory, text, additionalText)`
- `log_transformation(text)`



# Asset Automation

- `clickToElement(expected, undertest, checkValue)`
- `moveToElement(expected, undertest, checkValue)`
- `assetsArray(assetDirectory)`
- `assetsMission(assetDirectory)`
- `assetException(exceptionArray,assetDirectory)`
- `timeException(exceptionArray,assetDirectory)`
- `smoke_test(registerException = [], dailyBonusException = [],waitTimeException = [])`

# What can be done in addition ?

- Improve the image processing algorithms.(Using Sift for finding the coordinates of images for down-scaled or upscaled assets.)
- Make the code object-oriented for a better structure.
- Creating a system to take assets from the sets of specific URLs as it is made for product.
- Make the system also for mobile-platform.

# Finish

Thank you all...

Tekin Evrim Özmermer