Test Approaches

For the Buggy Car Rating website, I did both manual and automation testing. The listed defects have been found by both testing approaches. I chose Playwright testing framework as it is a very powerful tool even though it's relatively new.In this case, I have executed test cases on desktop browsers - chrome, firefox, safari and mobile browsers - iphone(IOS) 12 safari, Pixel 5 (Android) chrome to cover most of the real scenarios.

The Pros of Playwright automation tool

- In Playwright, I can run test cases on multiple platforms, devices and browsers at the same time by using the same code.
- More importantly, test execution is implemented faster than other tools.

Functional testing by automation and manually

- Register users
- Login (did in api on postman as well)
- Browse different pages
- Vote (did in api on postman as well)
- Total votes and individual votes
- Profile page
- Other details can be seen from the bug report

Non-functional testing

- Usability and exploratory testing
- Performance testing - with Chrome dev tool and Jmeter
- Load testing - Jmeter
- Security testing

Deployment of the test framework

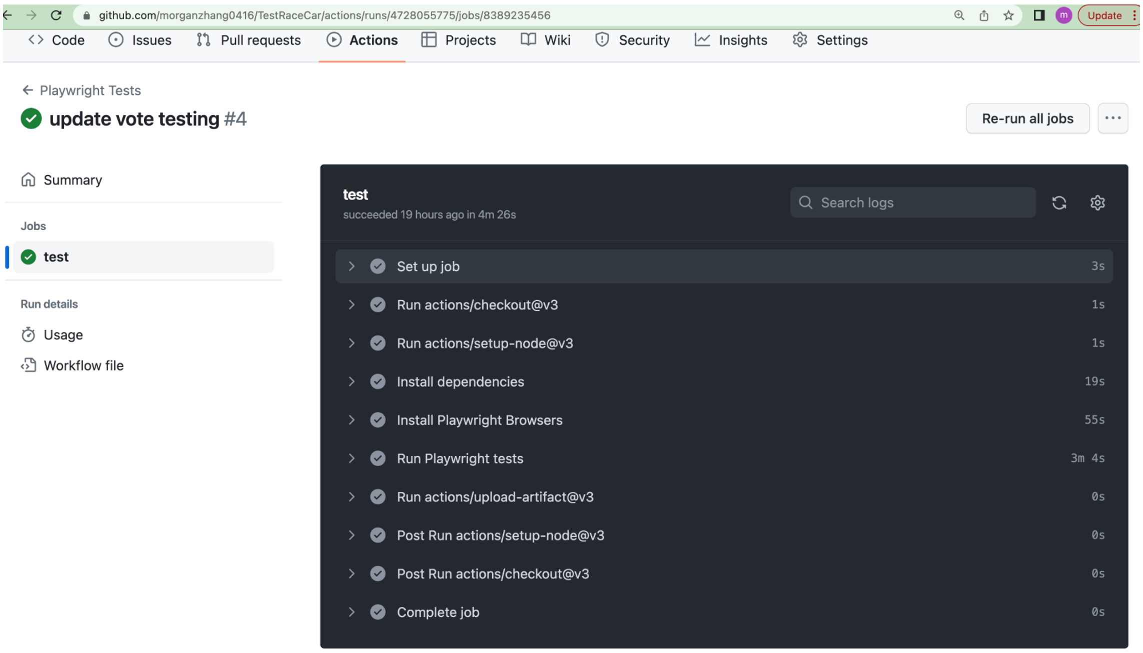
- Playwright framework

- Nodejs runtime environment
- Typescript
- Tests running on 5 workers parallelly with 3 retires
- All the browsers run the tests at the same time
  - Desktop (chromium, firefox and webkit)
  - Mobile (Pixel 5 chrome and iphone 12 safari)

  (Running performance: 60 test cases done within 1 minutes locally and 5 minutes via CI/CI Github Actions)
- Test report is available to download and view in html format after each run
- Errors are recorded on test report
- Every pull & push will trigger to run tests automatically by Github Actions

Test Results

CI/CI test result - Snapshot from Github Actions



← Playwright Tests

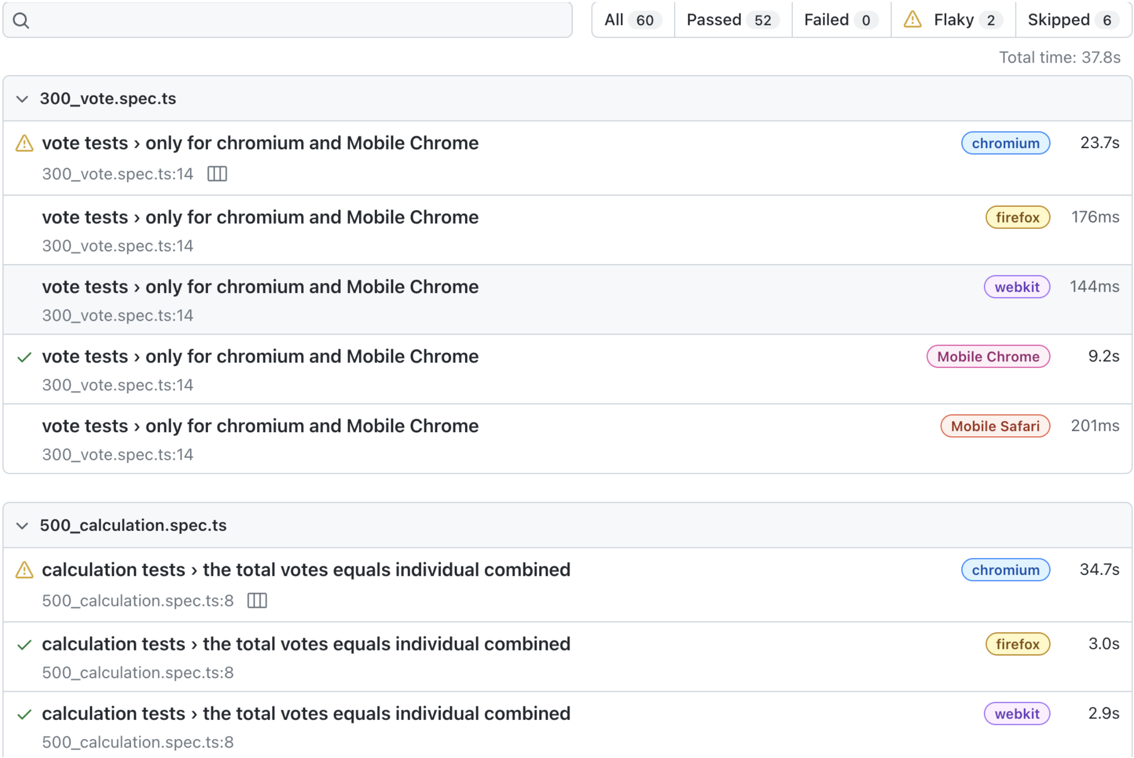
update vote testing #4

test

succeeded 19 hours ago in 4m 26s

```
Set up job                          3s
Run actions/checkout@v3             1s
Run actions/setup-node@v3           1s
Install dependencies               19s
Install Playwright Browsers        55s
Run Playwright tests            3m 4s
Run actions/upload-artifact@v3      0s
Post Run actions/setup-node@v3      0s
Post Run actions/checkout@v3        0s
Complete job                        0s
```

Local test result - Snapshot from Mac OS



All 60 | Passed 52 | Failed 0 | ⚠ Flaky 2 | Skipped 6

Total time: 37.8s

300_vote.spec.ts

⚠ vote tests › only for chromium and Mobile Chrome — chromium — 23.7s
300_vote.spec.ts:14

vote tests › only for chromium and Mobile Chrome — firefox — 176ms
300_vote.spec.ts:14

vote tests › only for chromium and Mobile Chrome — webkit — 144ms
300_vote.spec.ts:14

✓ vote tests › only for chromium and Mobile Chrome — Mobile Chrome — 9.2s
300_vote.spec.ts:14

vote tests › only for chromium and Mobile Chrome — Mobile Safari — 201ms
300_vote.spec.ts:14

500_calculation.spec.ts

⚠ calculation tests › the total votes equals individual combined — chromium — 34.7s
500_calculation.spec.ts:8

✓ calculation tests › the total votes equals individual combined — firefox — 3.0s
500_calculation.spec.ts:8

✓ calculation tests › the total votes equals individual combined — webkit — 2.9s
500_calculation.spec.ts:8

Future work

Some automation cases such as Voting might be flaky as I observed. I’m going to investigate and fix it in the next step.