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*3<sup>rd</sup> Year (6<sup>th</sup> semester)*

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## Experiment No: 11

**AIM:** To use Google Lighthouse PWA Analysis Tool to test the PWA functioning

### THEORY:

#### Lighthouse

Lighthouse is an open-source, automated tool for improving the quality of web pages. You can run it against any web page, public or requiring authentication. It has audits for performance, accessibility, progressive web apps, SEO and more.

You can run Lighthouse in Chrome DevTools, from the command line, or as a Node module. You give Lighthouse a URL to audit, it runs a series of audits against the page, and then it generates a report on how well the page did. From there, use the failing audits as indicators on how to improve the page. Each audit has a reference doc explaining why the audit is important, as well as how to fix it. You can also use Lighthouse CI to prevent regressions on your sites.

#### Lighthouse workflow:

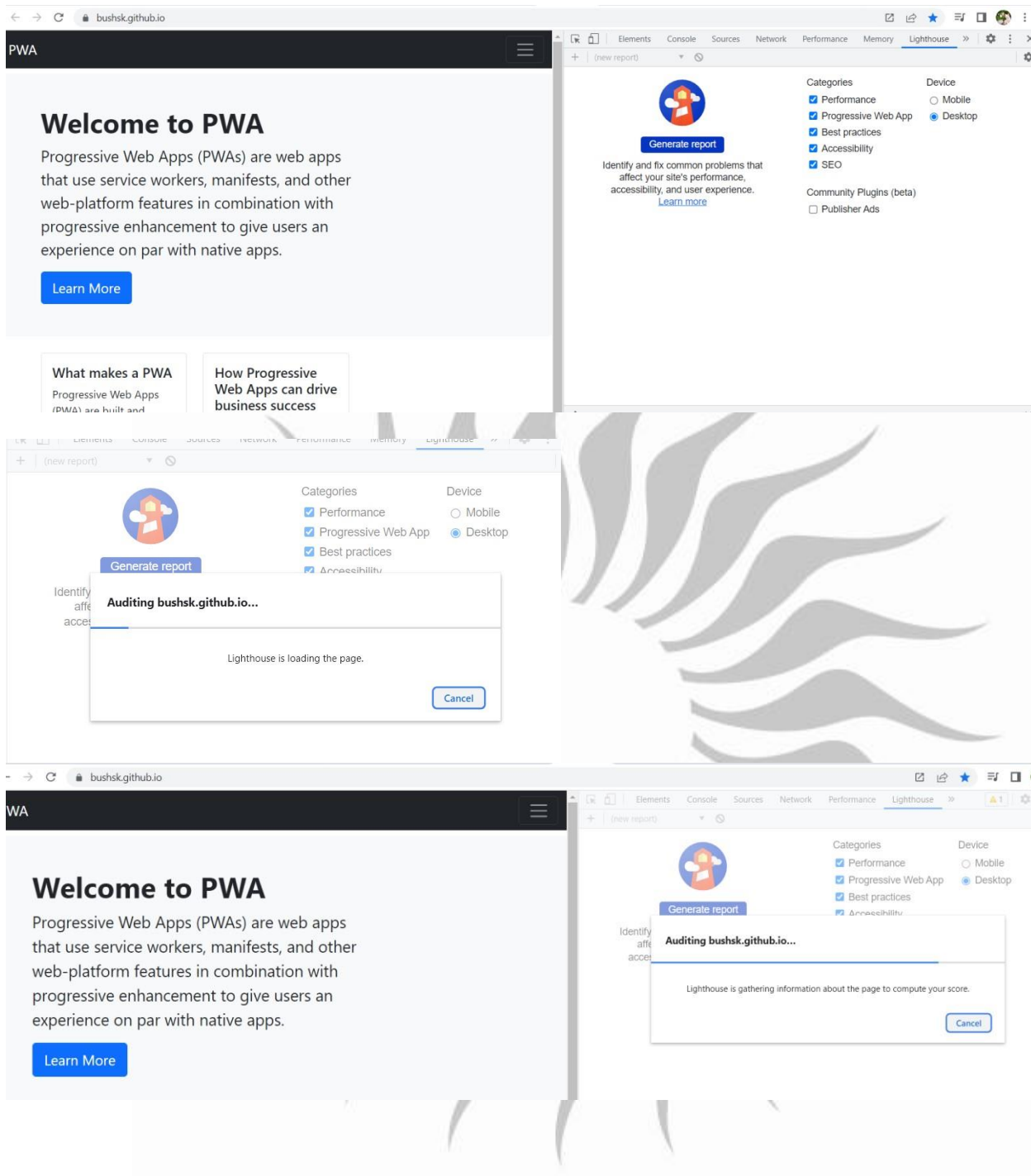
- In Chrome DevTools: Easily audit pages that require authentication, and read your reports in a userfriendly format.
- From the command line: Automate your Lighthouse runs via shell scripts.
- As a Node module: Integrate Lighthouse into your continuous integration systems. □ From a web UI: Run Lighthouse and link to reports without installing a thing.

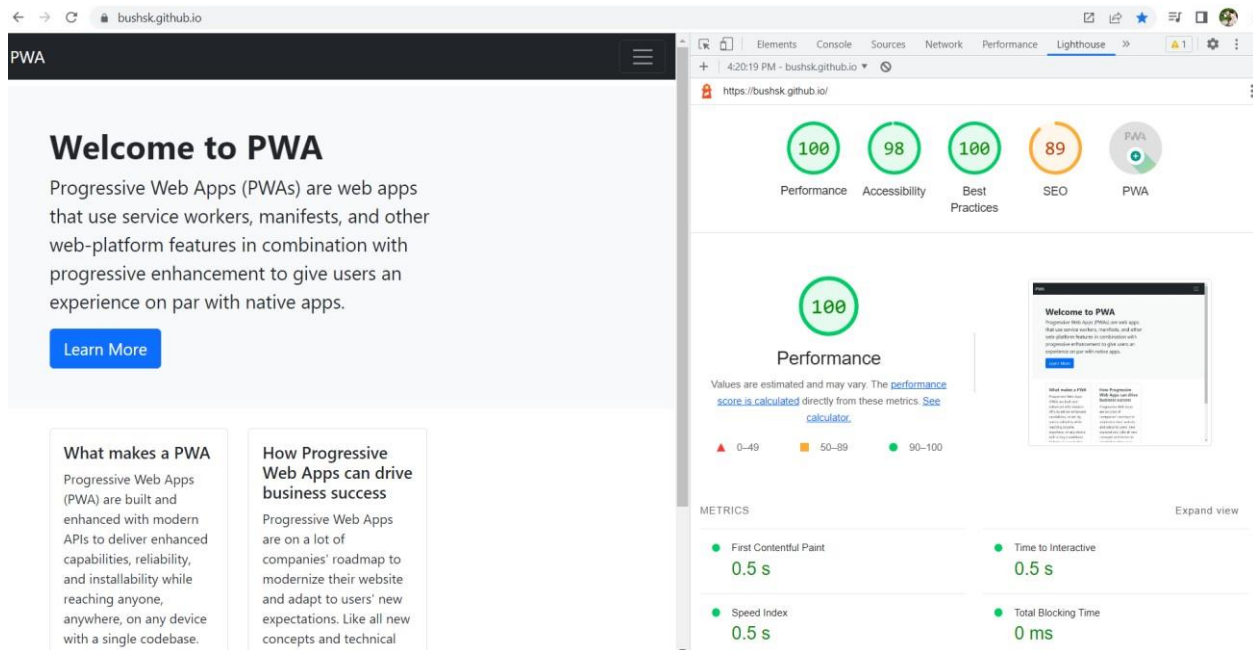
Note: The CLI and Node workflows require you to have an instance of Google Chrome installed on your machine.

#### Run Lighthouse in Chrome DevTools

Lighthouse powers the Audits panel of Chrome DevTools. To run a report:

1. Download **Google Chrome for Desktop**.
2. In Google Chrome, go to the URL you want to audit. You can audit any URL on the web.
3. **Open Chrome DevTools**.
4. Click the **Lighthouse** tab.
5. Click on **Generate Report** : Lighthouse runs its audits against the currently-focused page, then opens up a new tab with a report of the results.



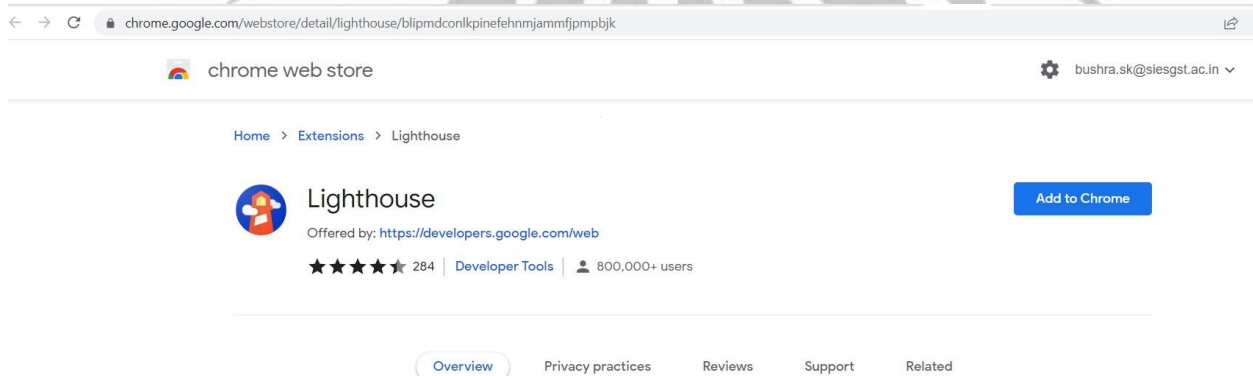


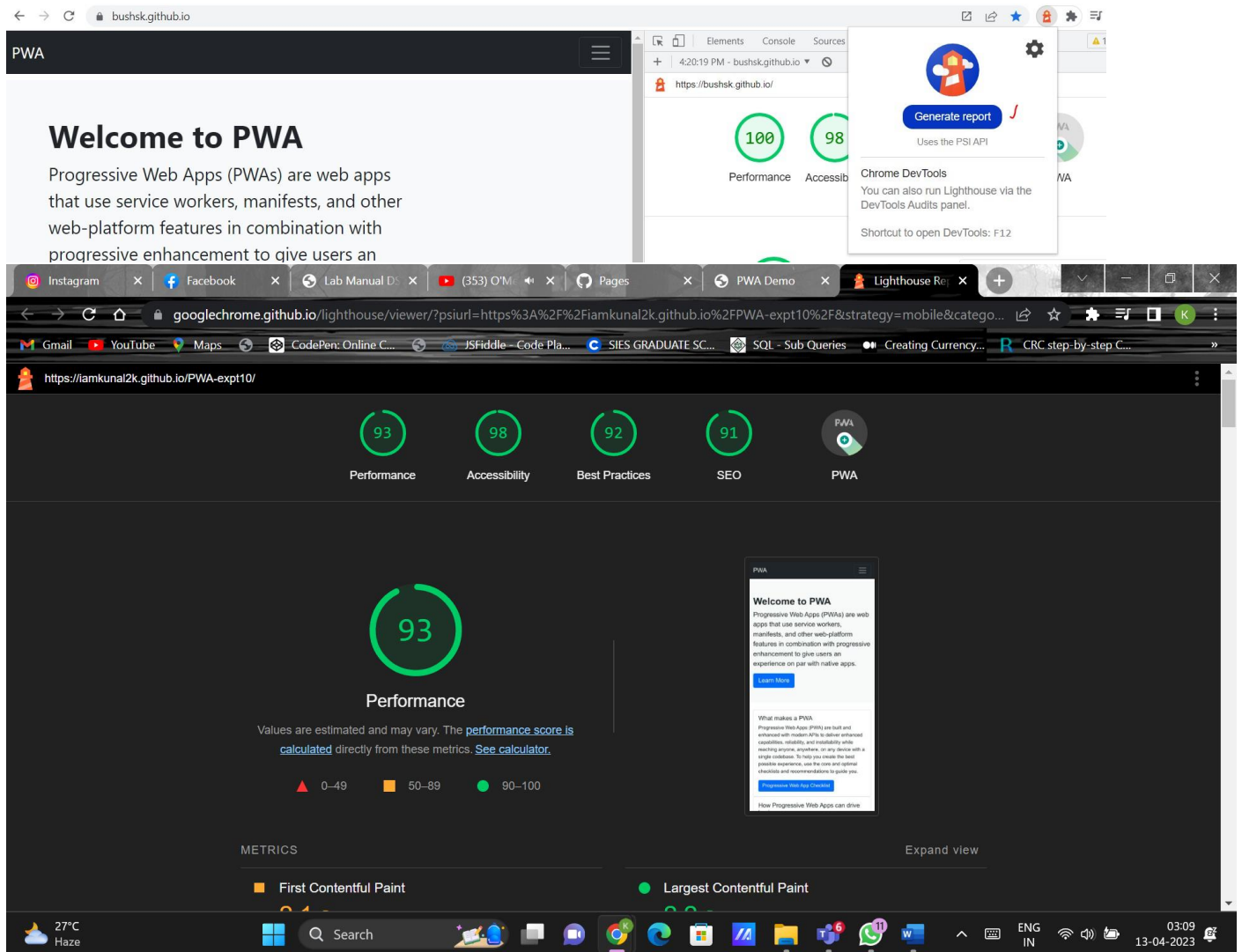
To install the extension:

1. Download Google Chrome for Desktop.
2. Install the [Lighthouse Chrome Extension](#) from the Chrome Webstore.

To run an audit:

1. In Chrome, go to the page you want to audit.
2. Click Lighthouse Lighthouse. It should be next to the Chrome address bar. If not, open Chrome's main menu and access it at the top of the menu. After clicking, the Lighthouse menu expands.





## Run PageSpeed Insights

To run Lighthouse on PageSpeed Insights:

1. Navigate to [PageSpeed Insights](#).
2. Enter a web page URL.
3. Click **Analyze**.

PageSpeed Insights

Report from Apr 13, 2023, 3:10:06 AM

<https://iamkunal2k.github.io/PWA-expt10/> [Analyze](#)

Mobile Desktop

Discover what your real users are experiencing [No Data](#)

Diagnose performance issues

Metric	Score
Performance	100
Accessibility	98
Best Practices	92
SEO	89

## Share reports as JSON

The Lighthouse Viewer needs the JSON output of a Lighthouse report. The list below explains how to get the JSON output, depending on what Lighthouse workflow you're using:

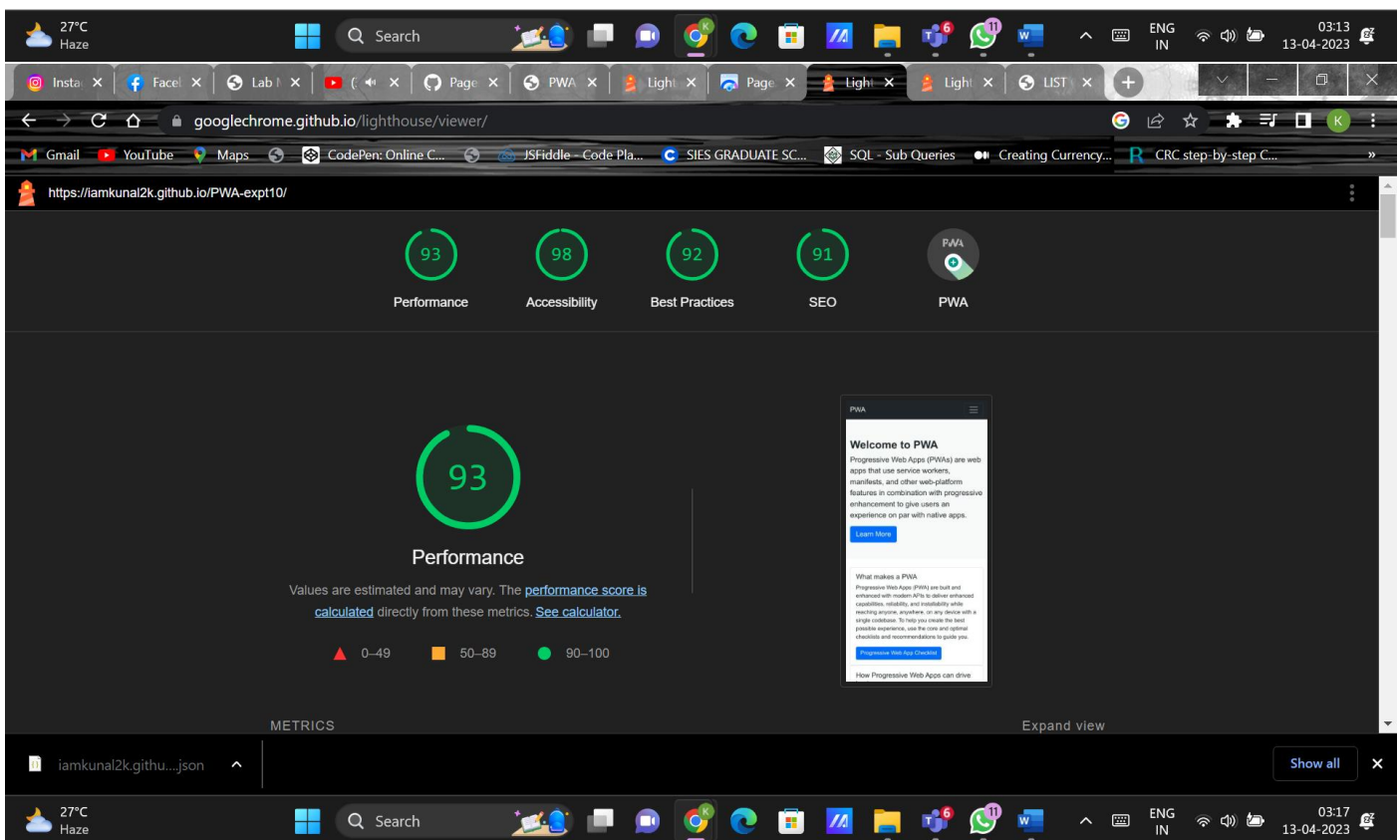
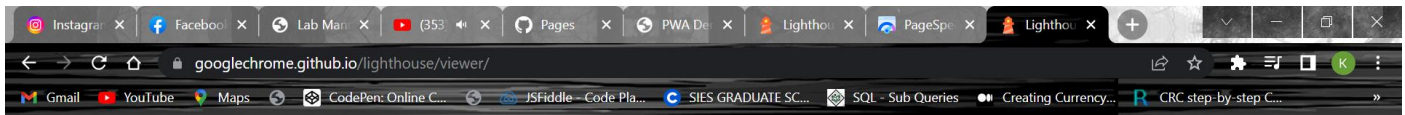
1. **Chrome DevTools.** Click **Download Report**.
2. **Command line.** Run:

`lighthouse --output json --output-path <path/for/output.json>`

3. **Lighthouse Viewer.** Click **Export > Save as JSON**.
4. **Click on**  **and save as Json** To view the report data:

1. Open the [Lighthouse Viewer](#) in Google Chrome.
2. Drag the JSON file onto the viewer, or click anywhere on the Viewer to open your file navigator and select the file.







## Share reports as GitHubGists

If you don't want to manually pass around JSON files, you can also share your reports as secret GitHubGists. One benefit of Gists is free version control.

To export a report as a Gist from the report:

1. (If already on the viewer, skip this step) Click Export > Open In Viewer. The report opens in the Viewer, located at <https://googlechrome.github.io/lighthouse/viewer/>.
2. In the Viewer, click Share . The first time you do this, a popup asks permission to access your basic GitHub data, and to read and write to your Gists.
3. To export a report as a Gist from the CLI version of Lighthouse, just manually create a Gist and copy-paste the report's JSON output into the Gist. The Gist filename containing the JSON output must end in `.lighthouse.report.json`. See Share reports as JSON for an example of how to generate JSON output from the command line tool.

To view a report that's been saved as a Gist:

1. Add `?gist=<ID>` to the Viewer's URL, where `<ID>` is the ID of the Gist. 2. <https://googlechrome.github.io/lighthouse/viewer/?gist=<ID>>
3. Open the Viewer, and paste the URL of a Gist into it.
4. **Click on  and save as Gists**
5. **Open your GitHub account and go to Your Gists to find the gisturl**



The image is a screenshot of a web browser window. The top part shows an authorization dialog for 'Lighthouse Viewer' by GoogleChrome. The dialog asks for access to the user's GitHub account, specifically for 'Gists' (Read and write access) and 'Personal user data' (Email addresses, read-only). The user is prompted to 'Authorize GoogleChrome'. Below the dialog, the browser shows the GitHub homepage for the user 'iamkunal2k'. The page displays the user's profile, top repositories, and a list of recent activity. A dropdown menu is open in the top right corner, showing options like 'Signed in as iamkunal2k', 'Your profile', 'Your repositories', 'Your organizations', 'Your projects', 'Your stars', 'Your gists' (highlighted), 'Your sponsors', 'Upgrade', 'Try Enterprise', 'Feature preview', 'Help', and 'Settings'. The browser's address bar shows the URL 'github.com/login/oauth/authorize?response\_type=code&client\_id=6fd4...'. The taskbar at the bottom shows various application icons and the system clock indicating 03:19 on 13-04-2023.

Authorize application - Google Chrome

googlechrome.github.io/lighthouse

github.com/login/oauth/authorize?response\_type=code&client\_id=6fd4...

Authorize Lighthouse Viewer

Lighthouse Viewer by GoogleChrome wants to access your iamkunal2k account

Gists Read and write access

Personal user data Email addresses (read-only)

Cancel Authorize GoogleChrome

Authorizing will redirect to https://lighthouse-chrom-1560304954232.firebaseio.com

Not owned or operated by GitHub

Created 2 years ago

27°C Haze

Search

github.com

Search or jump to...

Pull requests Issues Codespaces Marketplace Explore

iamkunal2k

Top Repositories

Find a repository...

SEM6-Mini-Project/app

iamkunal2k/Cp\_Repo

SEM5-MiniProject/Backend

internal-internship/Client

PrimaThink-Internship/python

iamkunal2k/Travell-App-Clone

iamkunal2k/flutter\_travel\_ui

Show more

Following For you (Beta)

aayyushhh starred aayyushhh/Rice-App · 7 hours ago

aayyushhh/Rice-App

C++ 1 Updated Apr 5

RuchirR02 created a repository RuchirR02/tp · 2 days ago

RuchirR02/tp

Updated Apr 11

SalmanAd01 released v1.0.12 of internal-internship/Client · 2 days ago

Signed in as iamkunal2k

Set status

Your profile

Your repositories

Your organizations

Your projects

Your stars

Your gists

Your sponsors

Upgrade

Try Enterprise

Feature preview

Help

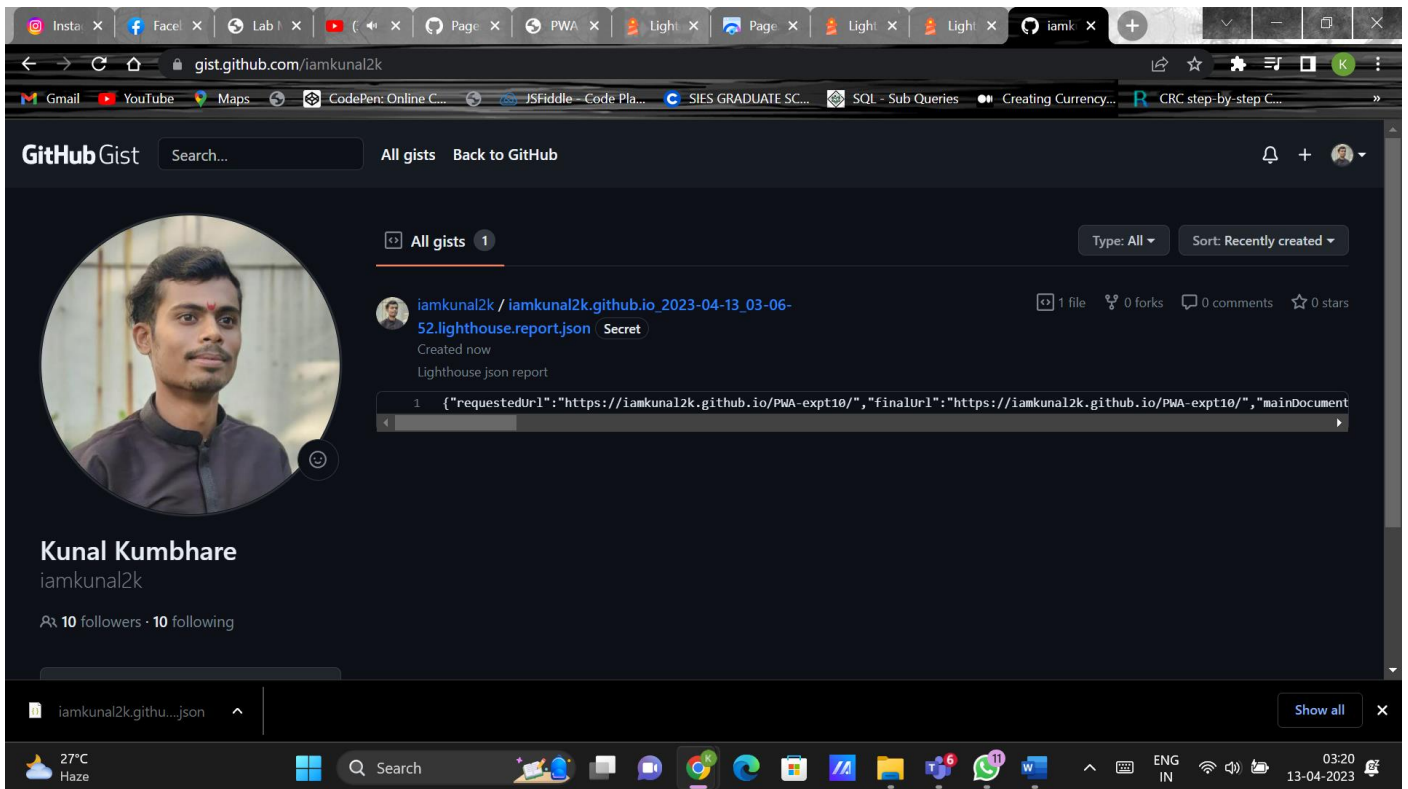
Settings

27°C Haze

Search

03:19 13-04-2023



**Conclusion: -**

Thus we have successfully able to use Google Lighthouse PWA Analysis Tool to test the PWA functioning.