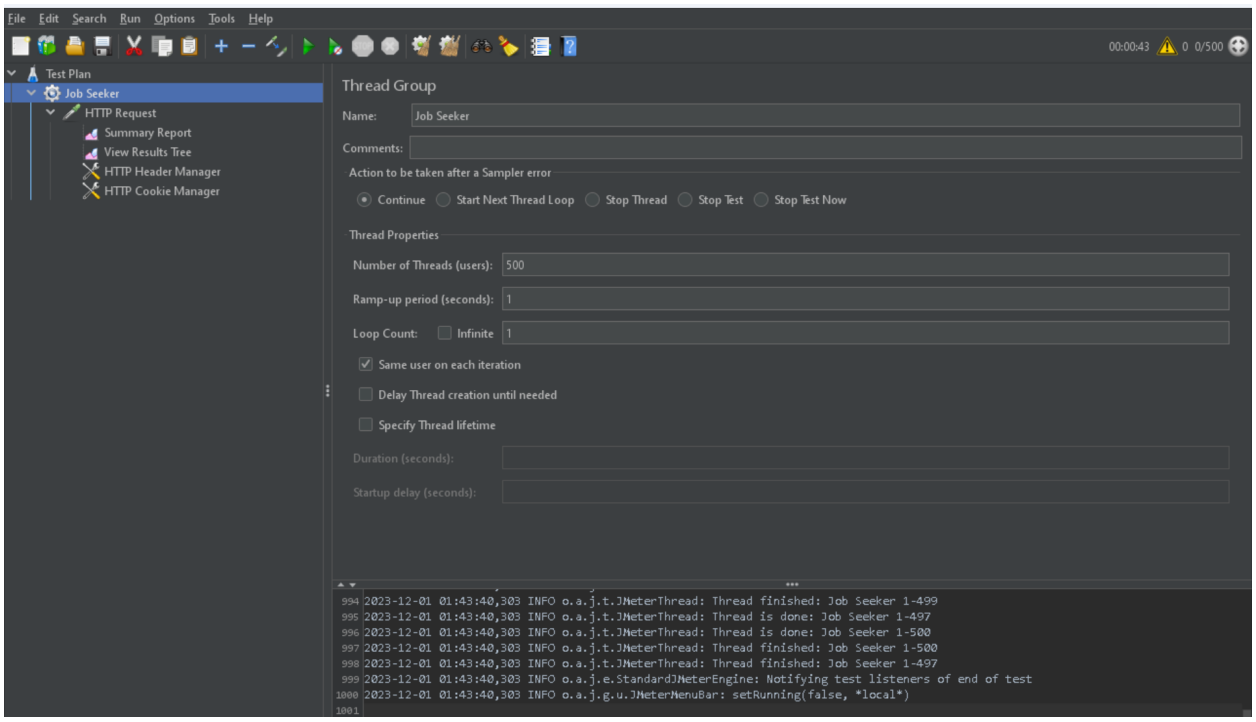
Software Engineering IT314
Final Submission
Group 17
Non-Functional Testing

We tested our system for load balance testing on JMeter which is best for non-functional testing.

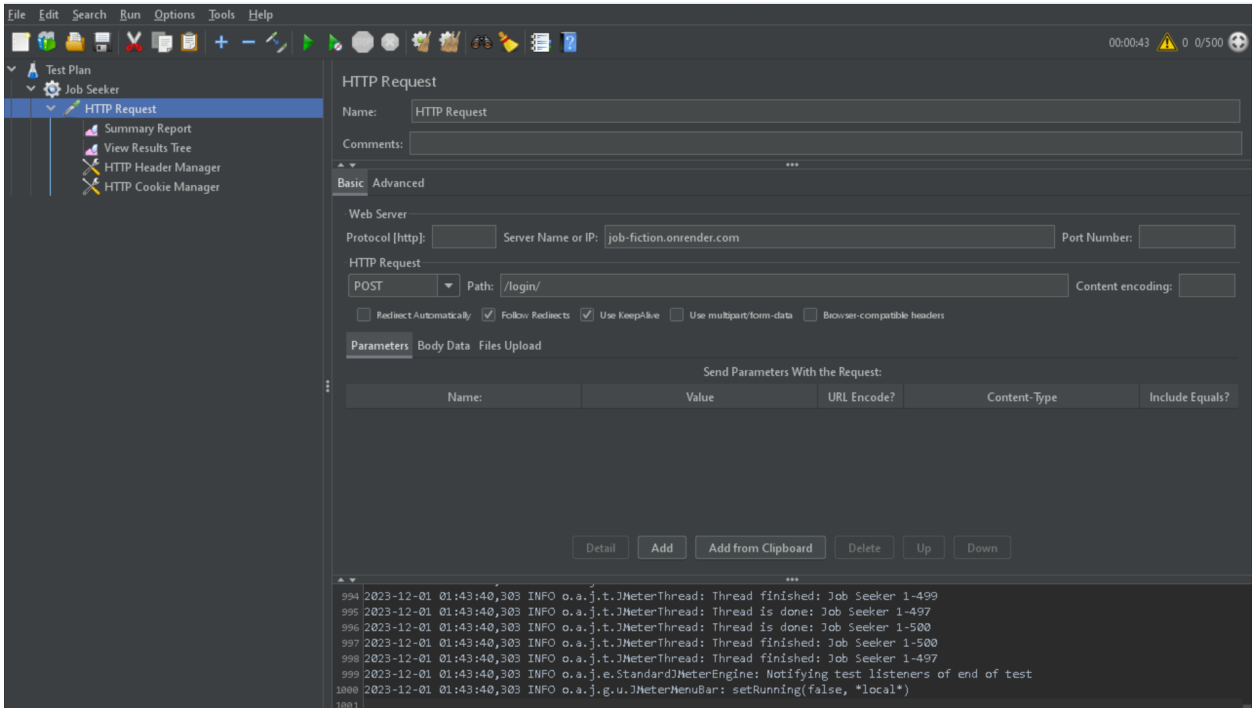
1. Load Balance Testing

- Testing Login Module (POST request to PATH ‘/login’)

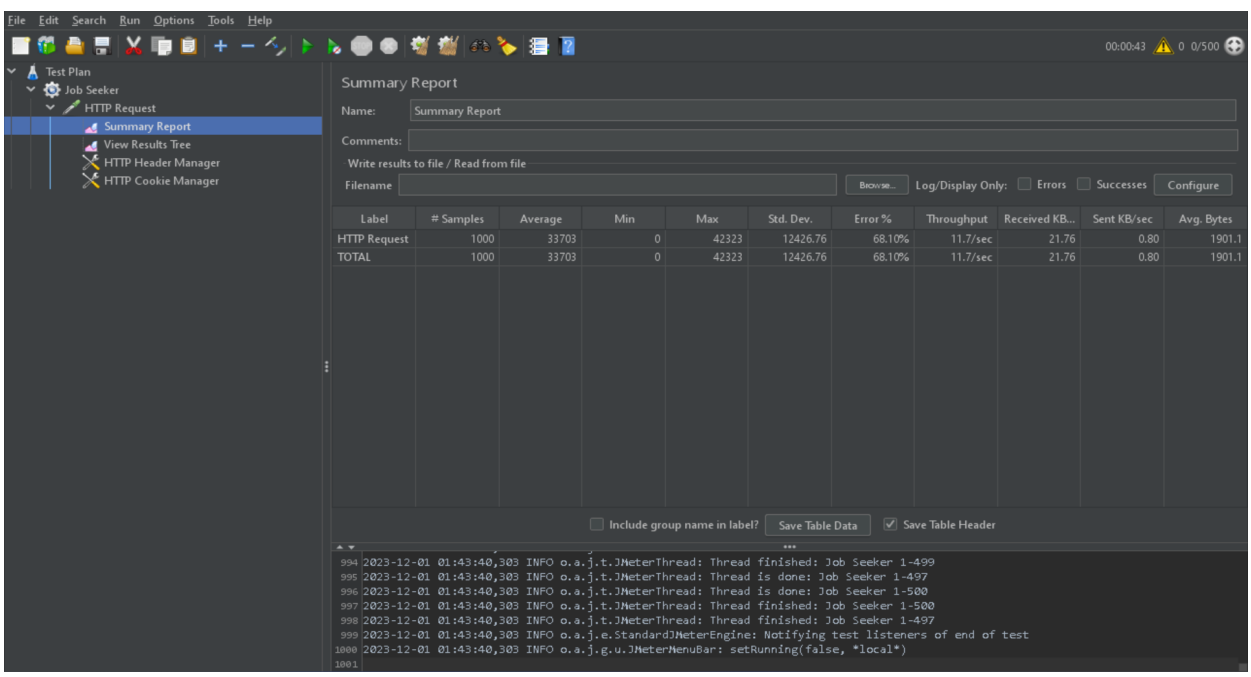
Scenario: We are going to log in with the same user from multiple hosts (500) and will be measuring the load balance and throughput of the system



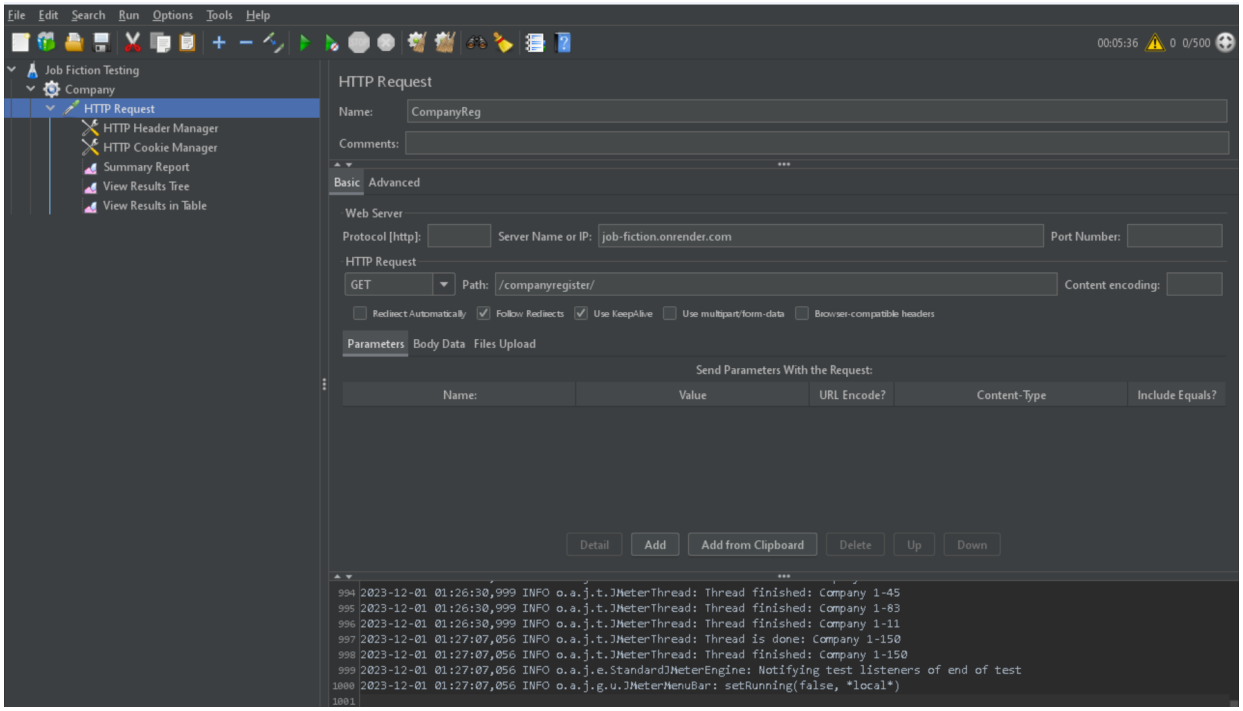
Below is a screenshot that displays the POST request to our deployed website on the JMeter screen.



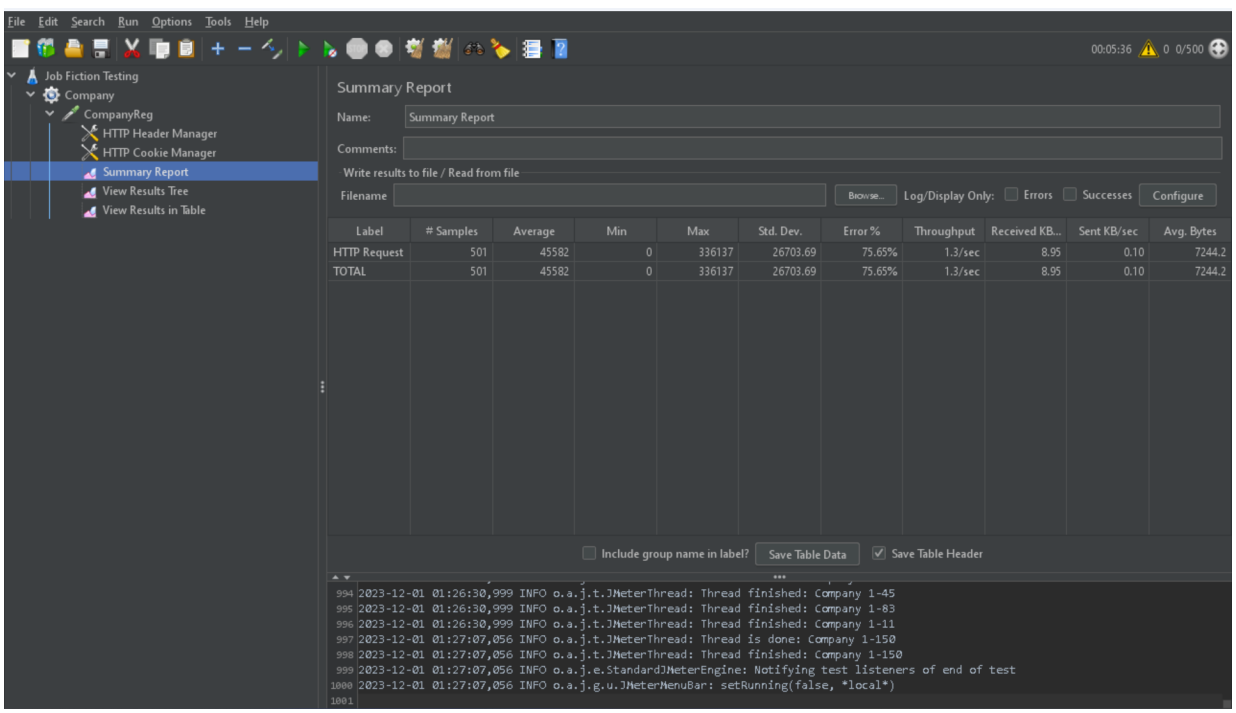
We can see in the below summary report that the throughput of the login page, while we have 500 concurrent users, is 11.7 sec.

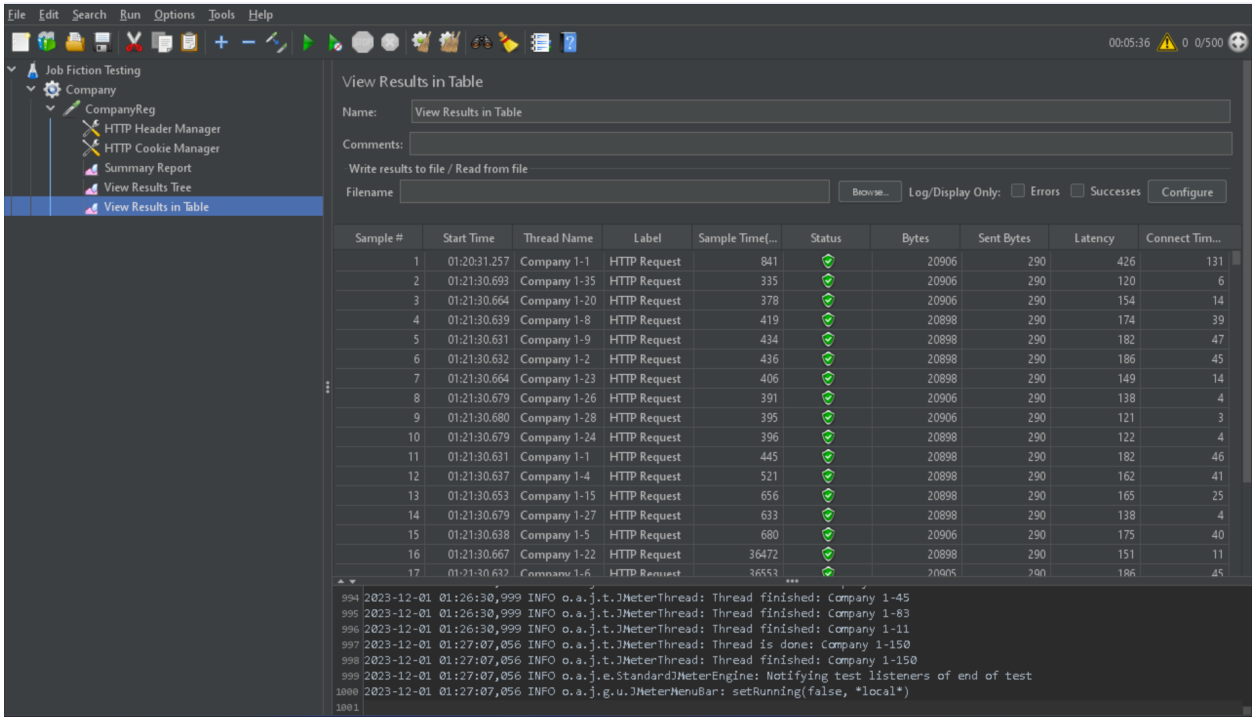


• Testing Company Registration module which allows Company employees to register on the portal.



Result of all the 500 requests.





2. Security Testing

Authentication and Authorization: For user authorization, while visiting all pathways, we have also implemented JWT authentication. Meaning that without logging into the system, nobody can view the inside details.

Data Encryption: The password has been encrypted using bcrypt. Ten more sault rounds have been added to the password's encryption. Since the password has been encrypted, the database administrator is unable to view any user's password.

Session Management: We have used cookies for session management, using this we have assured that the user can re-login within 30 minutes after logging in. This condition applies even if we close the browser.

Role-Based Access Controls: We have also ensured that Companies cannot perform the things that Admin can do.

Security Report by https://pentest-tools.com/

Website Vulnerability Scanner Result

+ New Scan Rescan Export Schedule periodic scan Report incorrect result

✓ https://job-fiction.onrender.com

Summary

Overall risk level:

Low

Risk ratings:

High:	0
Medium:	0
Low:	6
Info:	13

Scan information:

Start time:	Dec 01, 2023 / 12:42:46
Finish time:	Dec 01, 2023 / 12:43:18
Scan duration:	32 sec
Tests performed:	19/19
Scan status:	Finished

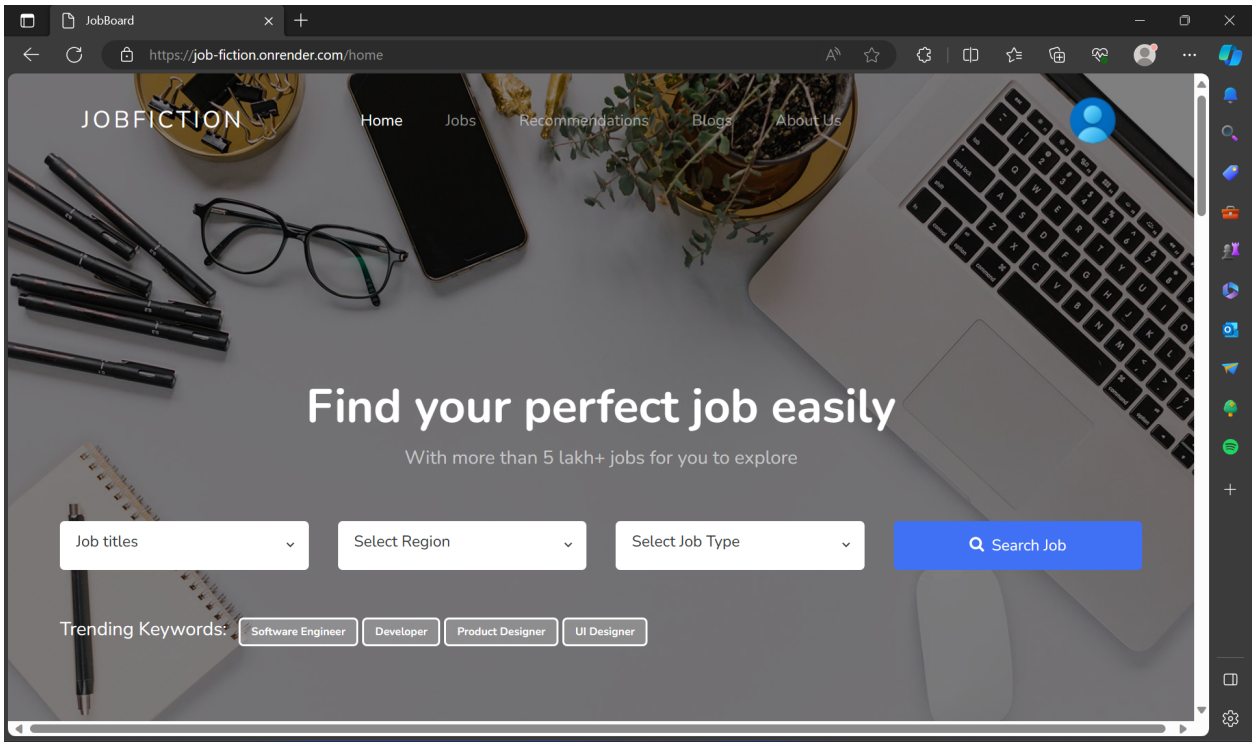
- Website is accessible.
- Nothing was found for vulnerabilities of server-side software.
- Nothing was found for client access policies.
- Nothing was found for robots.txt file.
- Nothing was found for use of untrusted certificates.
- Nothing was found for enabled HTTP debug methods.
- Nothing was found for secure communication.
- Nothing was found for directory listing.
- Nothing was found for domain too loose set for cookies.
- Nothing was found for HttpOnly flag of cookie.
- Nothing was found for Secure flag of cookie.
- Nothing was found for unsafe HTTP header Content Security Policy.

3. Compatibility Testing

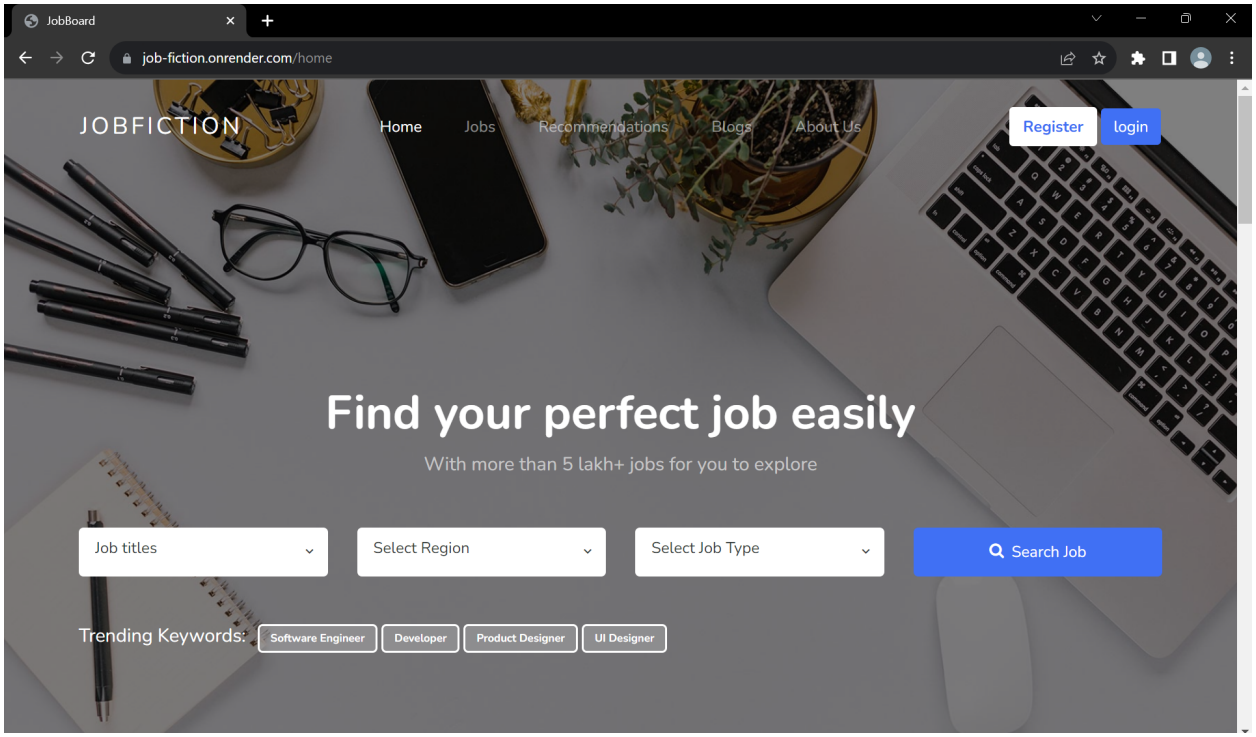
The website was thoroughly tested on a range of browsers and screen resolutions to guarantee optimal functionality and compatibility with a broad range of devices and user experiences.

We have ensured the portal runs on the most recent versions of all web browsers, such as Chrome, Microsoft Edge, and an Android Mobile interface.

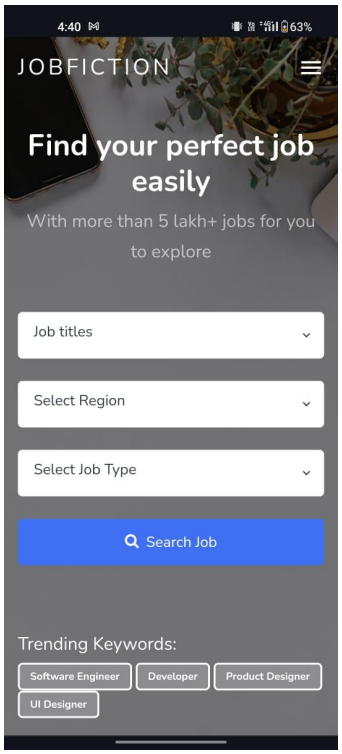
Microsoft Edge



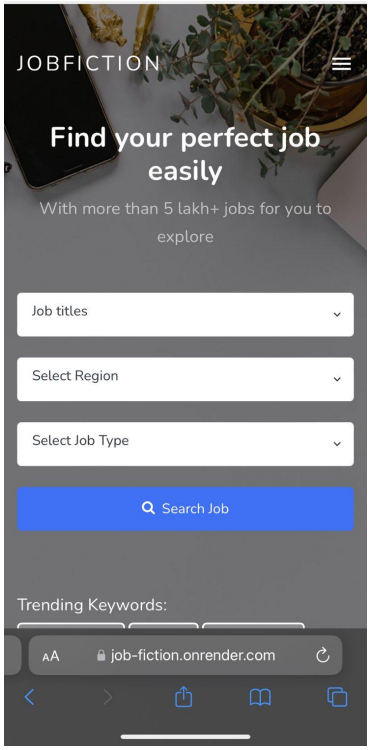
Chrome



An Android Mobile

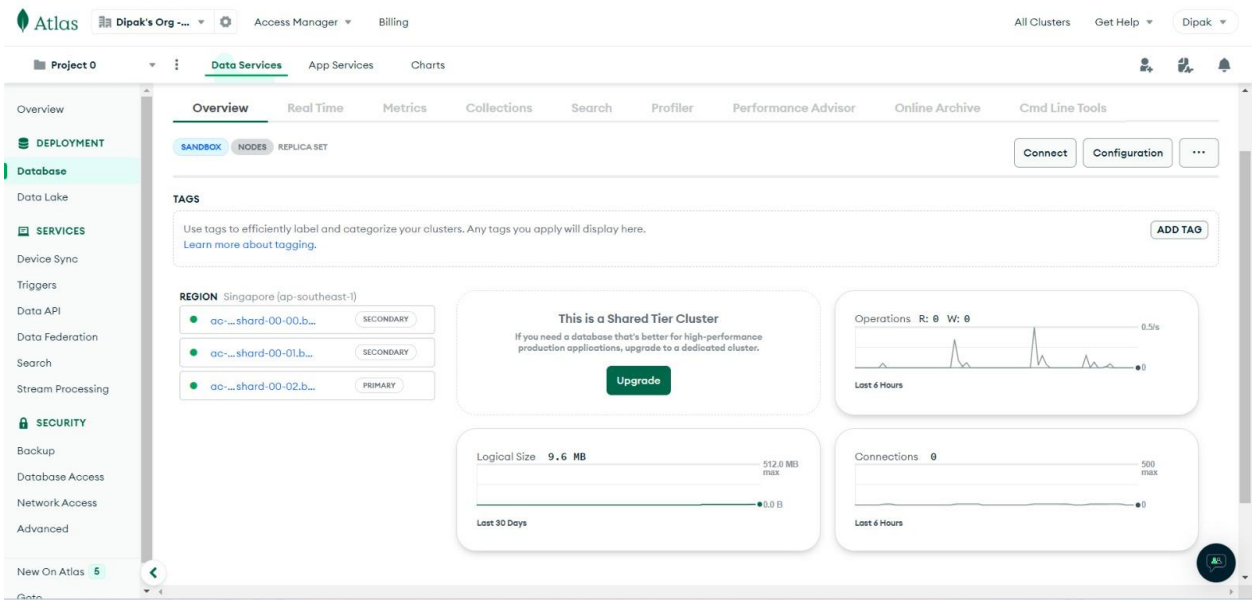


An IOS Mobile Interface



4. Reliability testing

This type of testing evaluates the software system's ability to function correctly and reliably over a specific period of time, including testing for failure recovery, fault tolerance, and stability.

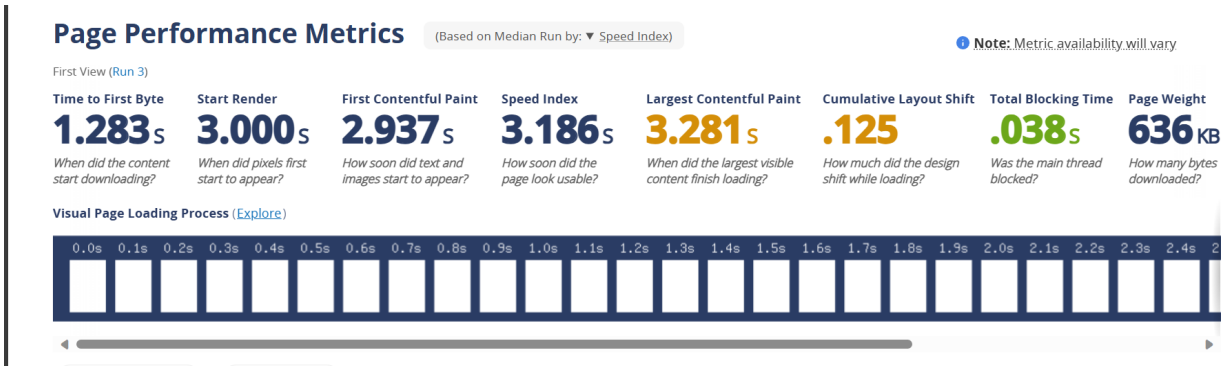


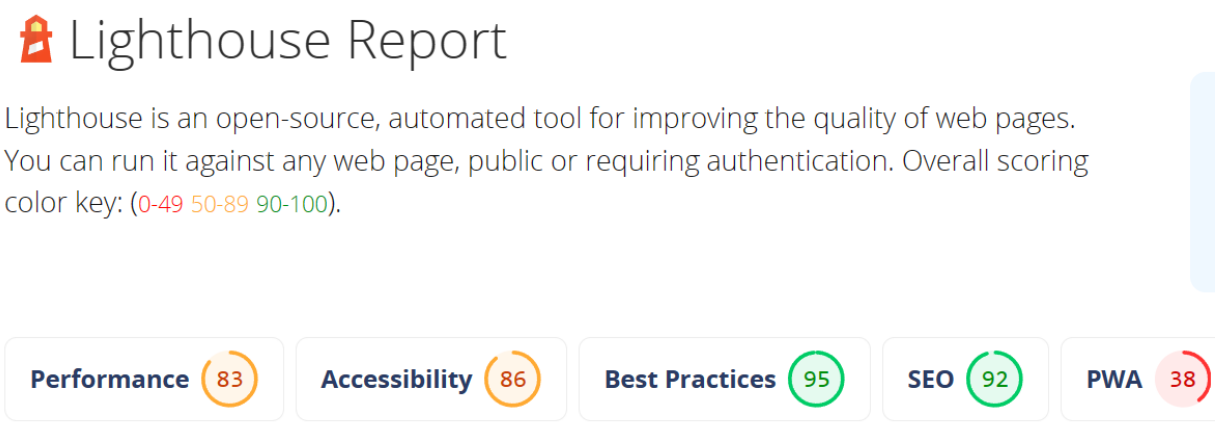
As we can see from the above screenshot, our portal database is deployed on 3 separate regions. So it gives high fault tolerance. If one of the regions fails, then we have the other 2 regions which are up and running. So we can have our updated data available at any time.

5. Usability testing

This kind of testing assesses the software system's usability, taking into account both its interface and design. Testing for internationalization, accessibility, and user experience is part of it.

This is tested with: https://www.webpagetest.org/





In our system, Job Seekers can only apply for a job once they have registered. The same goes for the Company Employees who want to post a job.