DHIRUBHAI AMBANI INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY

IT314 - SOFTWARE ENGINEERING

NON - FUNCTIONAL TESTING

CRIME AND HAZARD MANAGEMENT SYSTEM

GROUP NO: 30

GROUP MEMBERS

202001410	PATEL AYUSH SANJAYBHAI
202001447	VAKANI HETAV ABHAYBHAI
202001467	JAY GROVER
202001421	PATEL KUNJ RAKESH
202001446	GONDALIYA VENIL CHANDUBHAI
202001275	AYUSH JAIN
202001458	KRIS PATEL
202001264	HARSH SANJAY MAKWANA
202001466	KALP KINJALBHAI PANDYA
202001438	NARODIA JEET NILESHKUMAR
202001457	HITARTH VYAS

Non Functional Testing

Performance Testing

Load Testing

Load testing is a type of non-functional testing that involves measuring the performance of a software system or application under a specific load or level of user activity.

The goal of load testing is to determine how the system behaves under normal and peak usage conditions, and to identify any performance issues such as slow response times, bottlenecks, or crashes that may occur when the system is under heavy load.

In load testing, the system is subjected to a predetermined load, which may be based on the expected number of users or requests during peak usage periods. The load can be increased gradually or in steps to observe how the system responds, and the test results are analyzed to identify performance issues and bottlenecks.

Here, we used Jmeter to perform load testing.

Performed load testing for below 3 urls

1. GET request on homepage
   (crimeandhazardtracker.onrender.com/myApp/)

2. GET request on incident feed
   (crimeandhazardtracker.onrender.com/myApp/IncidentFeed/)

3. GET request on property feed
   (crimeandhazardtracker.onrender.com/myApp/PropertyFeed/)

Number of user : 100

Csv outputs

Csv* heading

timeStamp	elapsed	label	responseC	responseM	threadNar	dataType	success	failureMe	bytes	sentBytes	grpThread	allThreads	URL	Latency	IdleTime	Connect

Csv* output for homepage

1.68E+12	1103	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1093	0	108
1.68E+12	1163	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1153	0	171
1.68E+12	1609	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1609	0	588
1.68E+12	1335	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1335	0	222
1.68E+12	1944	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1944	0	840
1.68E+12	1308	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1308	0	107
1.68E+12	1761	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1760	0	557
1.68E+12	1577	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1577	0	376
1.68E+12	1861	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1860	0	657
1.68E+12	1712	homepage	200	OK	Thread Gr	text	TRUE		3648	145	100	100	https://cri	1712	0	511

Csv* output for incident feed

1.68E+12	113602	incidentfe	200	OK	Thread Gr	text	TRUE		181971	158	100	100	https://cri	113261	0	53
1.68E+12	113866	incidentfe	200	OK	Thread Gr	text	TRUE		181977	158	100	100	https://cri	113591	0	57
1.68E+12	114348	incidentfe	200	OK	Thread Gr	text	TRUE		181977	158	100	100	https://cri	114018	0	74
1.68E+12	114493	incidentfe	200	OK	Thread Gr	text	TRUE		181977	158	100	100	https://cri	114212	0	70
1.68E+12	114508	incidentfe	200	OK	Thread Gr	text	TRUE		181977	158	100	100	https://cri	114226	0	69
1.68E+12	114980	incidentfe	200	OK	Thread Gr	text	TRUE		181971	158	100	100	https://cri	114699	0	74
1.68E+12	114916	incidentfe	200	OK	Thread Gr	text	TRUE		181977	158	100	100	https://cri	114604	0	68
1.68E+12	116185	incidentfe	200	OK	Thread Gr	text	TRUE		181977	158	100	100	https://cri	115898	0	72
1.68E+12	116796	incidentfe	200	OK	Thread Gr	text	TRUE		181977	158	100	100	https://cri	116522	0	71

Csv* output for property feed

1.68E+12	82885	propertyfe	200	OK	Thread Gr	text	TRUE		186673	158	25	25	https://cri	82583	0	58
1.68E+12	83039	propertyfe	200	OK	Thread Gr	text	TRUE		186666	158	24	24	https://cri	82728	0	64
1.68E+12	82906	propertyfe	200	OK	Thread Gr	text	TRUE		186673	158	23	23	https://cri	82615	0	63
1.68E+12	82900	propertyfe	200	OK	Thread Gr	text	TRUE		186673	158	22	22	https://cri	82614	0	67
1.68E+12	82876	propertyfe	200	OK	Thread Gr	text	TRUE		186673	158	21	21	https://cri	82590	0	54
1.68E+12	82897	propertyfe	200	OK	Thread Gr	text	TRUE		186672	158	20	20	https://cri	82600	0	56
1.68E+12	82815	propertyfe	200	OK	Thread Gr	text	TRUE		186673	158	19	19	https://cri	82537	0	43
1.68E+12	82808	propertyfe	200	OK	Thread Gr	text	TRUE		186673	158	18	18	https://cri	82522	0	113
1.68E+12	82871	propertyfe	200	OK	Thread Gr	text	TRUE		186666	158	17	17	https://cri	82577	0	66

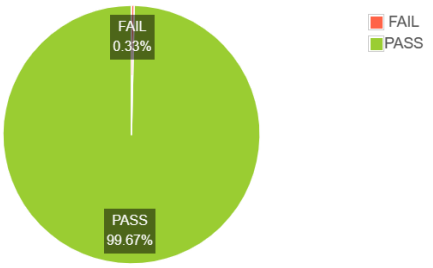
Csv* - Detailed log can seen in loadtest.csv

Application performance index and request summary(combined for all 3 requests)

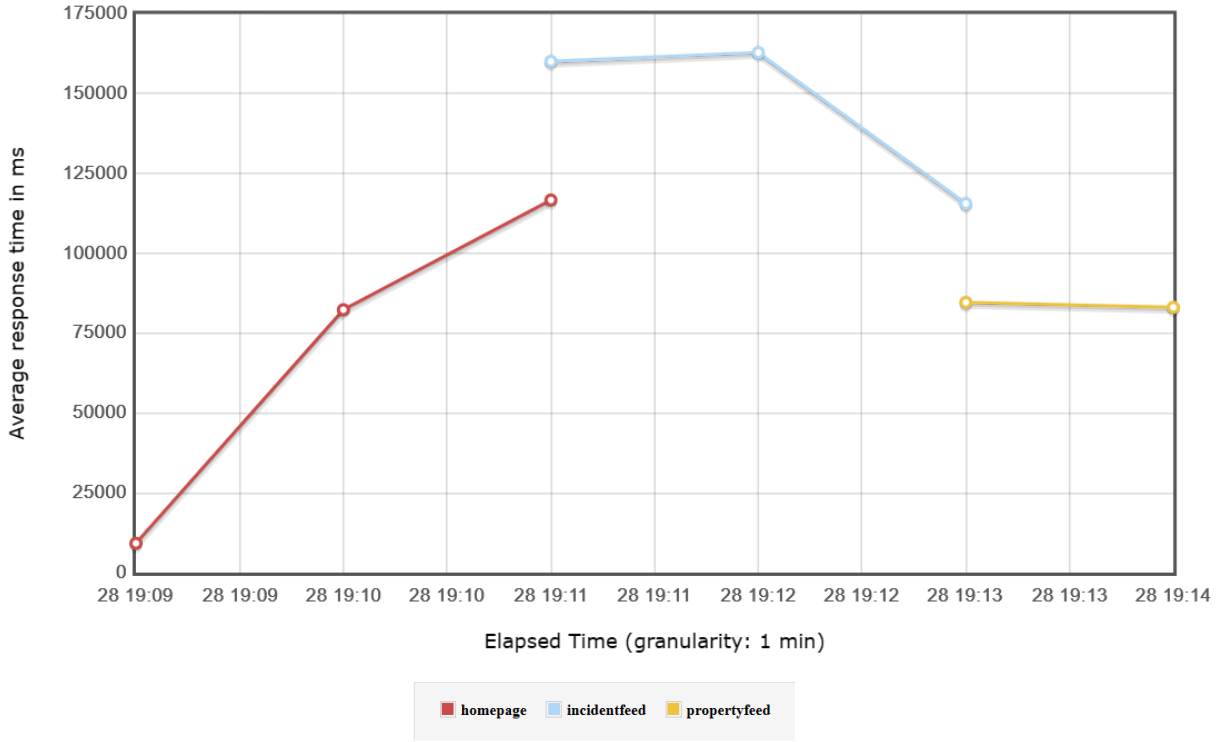
APDEX (Application Performance Index)

Apdex	T (Toleration threshold)	F (Frustration threshold)	Label
0.010	**500 ms**	**1 sec 500 ms**	**Total**
0.000	500 ms	1 sec 500 ms	propertyfeed
0.000	500 ms	1 sec 500 ms	incidentfeed
0.030	500 ms	1 sec 500 ms	homepage

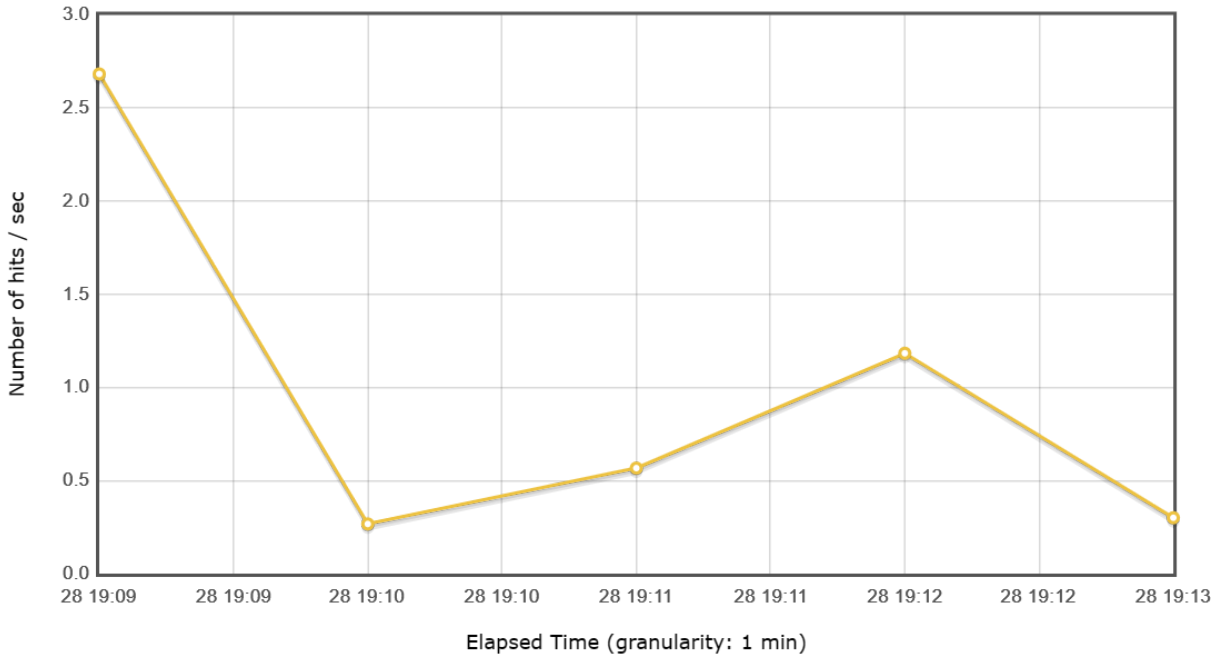
Requests Summary



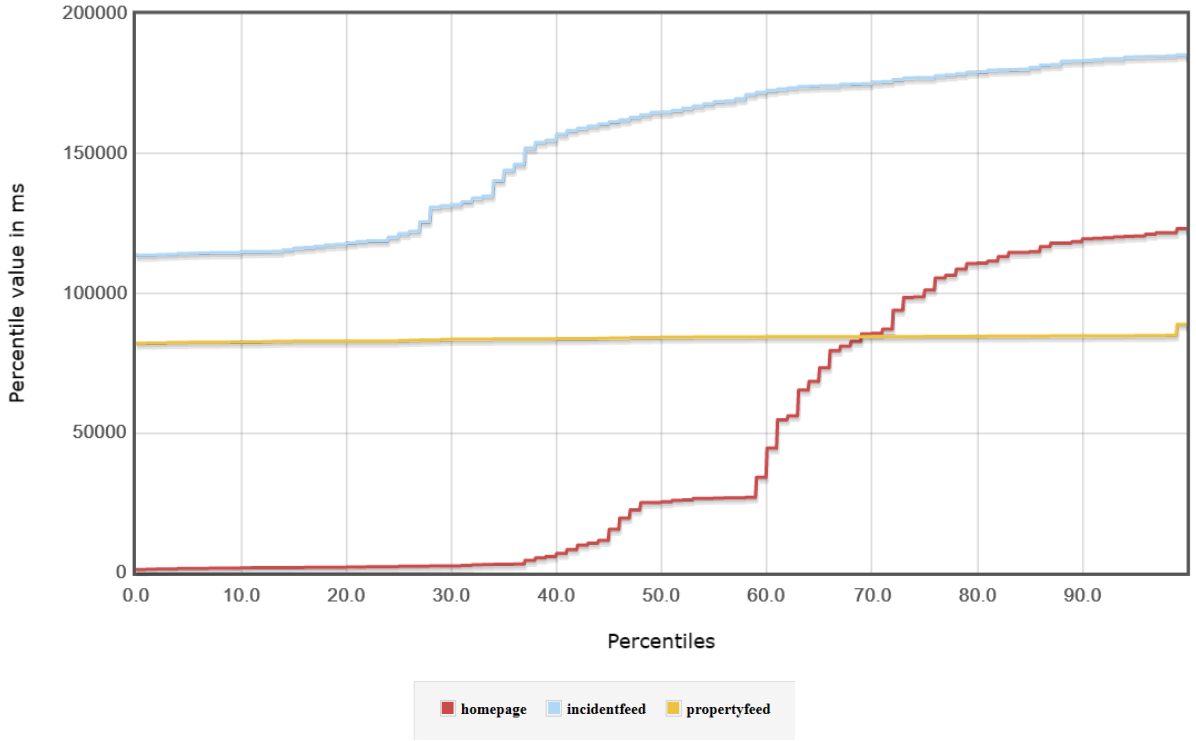
Response Times Over Time(combined)



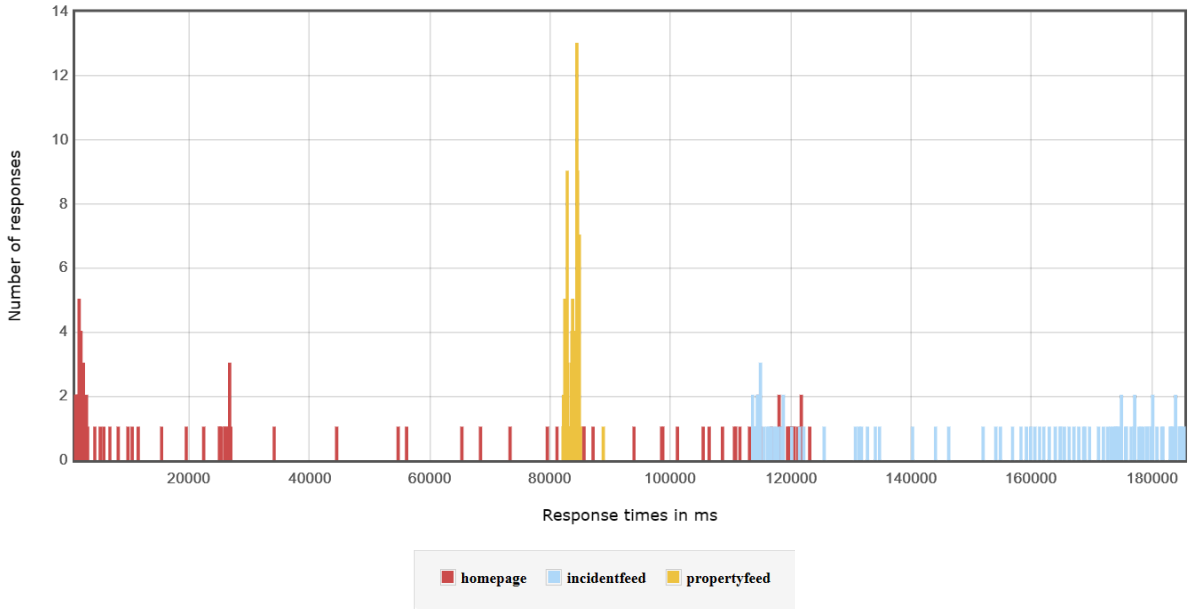
Hits per second(combined)



Response time percentiles(combined)

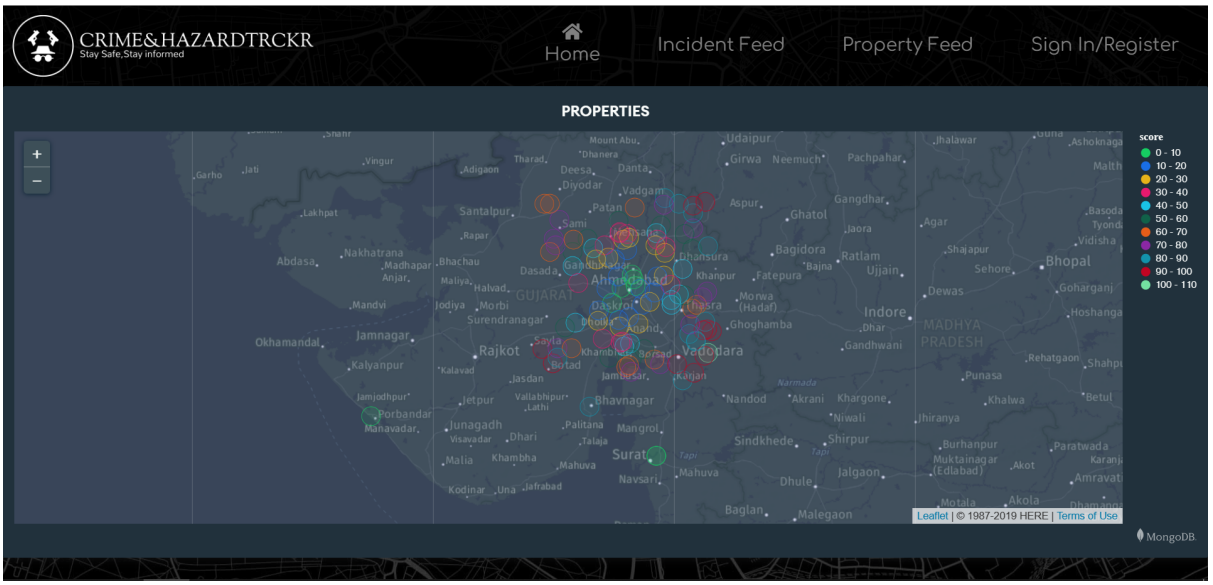


Response time distribution(combined)

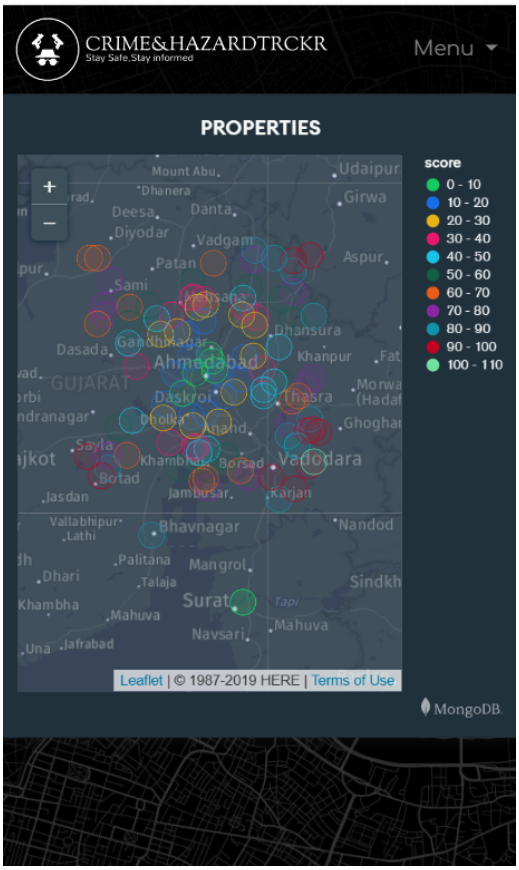


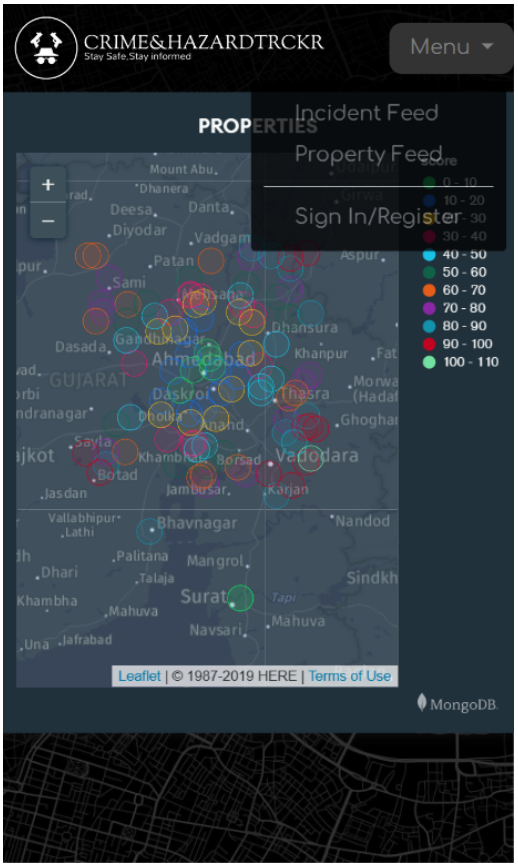
Responsiveness

Browser Interface for home page



Mobile Interface for home page

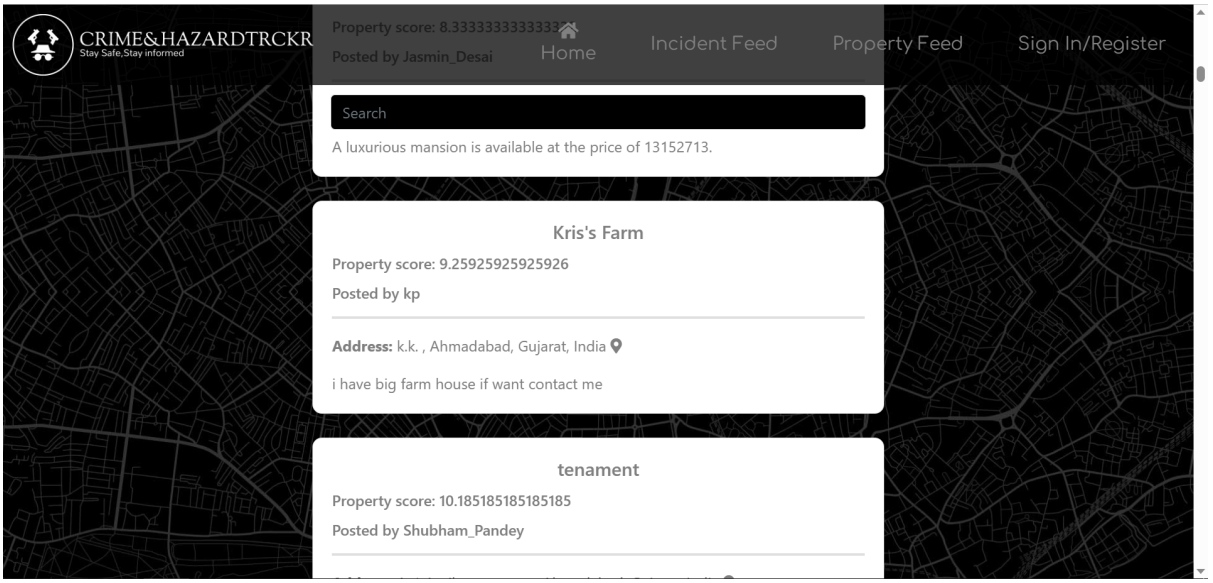


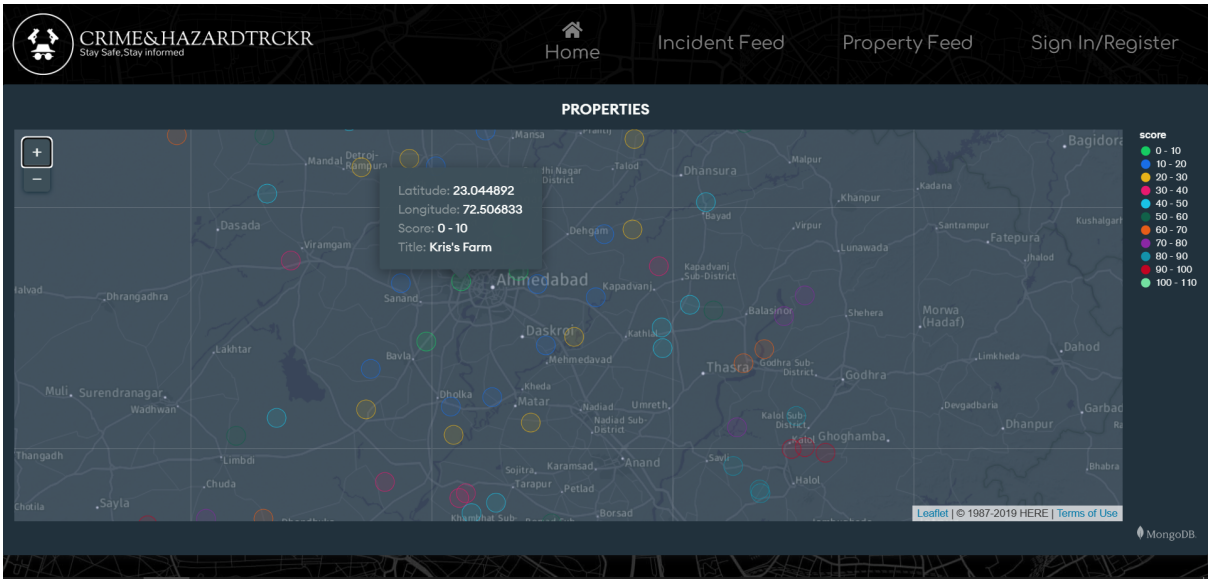


Here the navbar changes to a menu button and after we tap to menu we get all nav bar buttons.

So, as we can see that the system is responsive for different types of devices used in which either of them can be PC,laptop or mobile phones.

Correctness



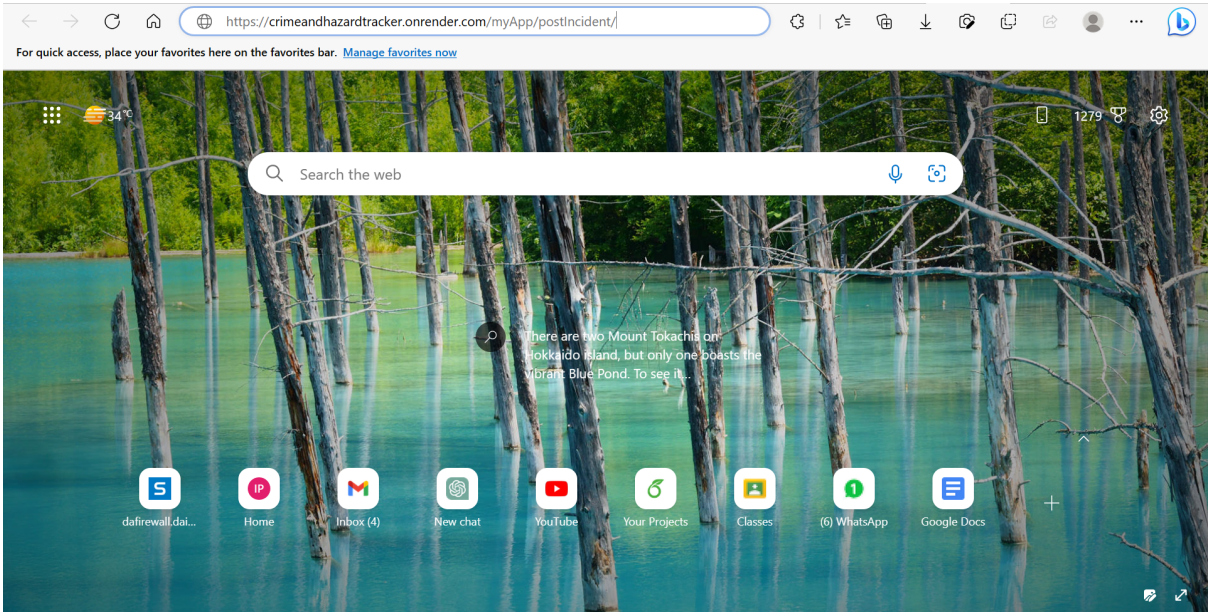
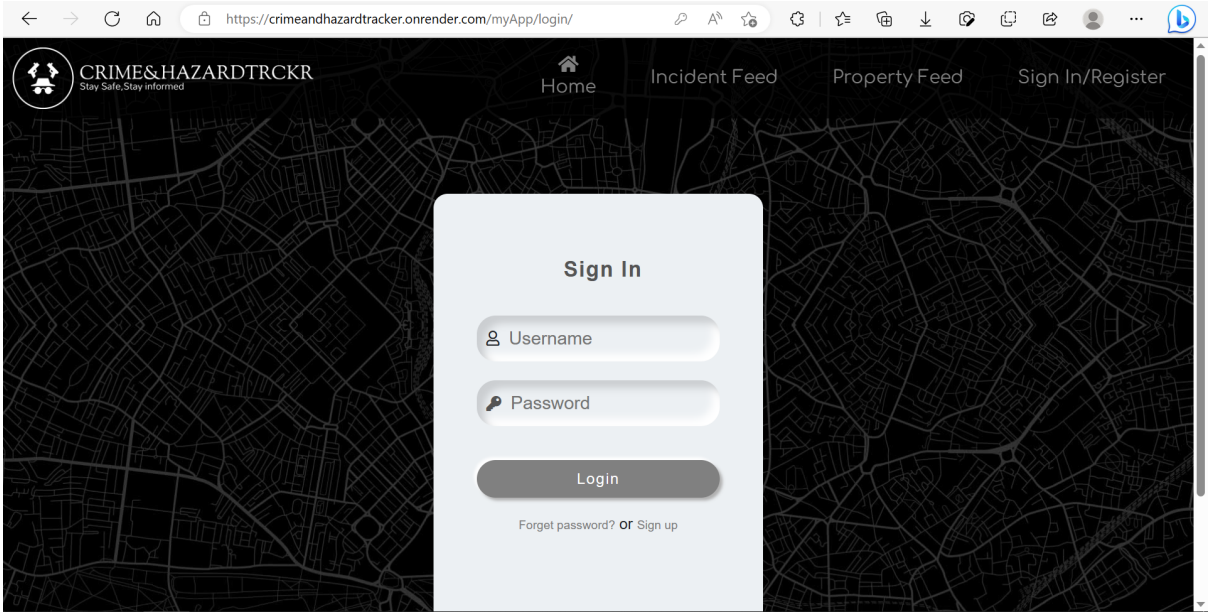


As we can see from above screenshots we have an incident at Kris's farm in incident feed. So, for the same it should be shown on a map which we can verify.
Hence, the system correctly gives all information.

Security

We have designed our login and authentication system based on sessions. Hence, one may know the url but if one enters that without login the system redirects to the login page as the session is not authenticated yet.

Entering url for post incident which can be accessed after login only.



It redirect to login page