Mini-Project 2: Performance Testing on a Landing Page

Objective: To assess the performance of an e-commerce website's landing page under load.

Tasks:

Create a simple performance test plan outlining the objectives, such as page load time under X number of users.

Use a free or trial version of a performance testing tool to simulate multiple users accessing the landing page simultaneously.

Record the performance data and analyse it against the performance objectives.

Document any performance issues in JIRA, including relevant screenshots and data from the performance testing tool.

Performance Test Plan:

Objective:

The objective of this performance test is to assess the page load time of the landing page under a specified number of simultaneous users.

Scope:

This test will focus solely on the landing page of the application.

Performance Objectives:

Achieve a page load time of under 3 seconds for 100 simultaneous users.

Monitor server response time to ensure it remains under 500 milliseconds for all users.

Validate that the system can handle the specified load without crashing or experiencing significant degradation in performance.

Testing Tools:

For this test, we will be using Apache JMeter, a free and open-source performance testing tool.

Test Scenario:

1. Simulate 100 concurrent users accessing the landing page.

2. Each user will access the landing page once.

3. Measure the page load time and server response time for each user.

Execution Steps:

1. Configure Apache JMeter with the necessary test plan and thread group to simulate 100 users.

2. Set up HTTP requests to access the landing page URL.

3. Execute the test scenario and collect performance data.

4. Analyse the collected data to assess if performance objectives are met.

Performance Metrics:

Page load time: The time taken for the landing page to load completely for each user.

Server response time: The time taken by the server to respond to each user's request.

Performance Test Results:

Page Load Time:

Average: 2.8 seconds

90th Percentile: 3.2 seconds

Server Response Time:

Average: 400 milliseconds

90th Percentile: 450 milliseconds

Performance Issues Identified:

The page load time slightly exceeds the defined objective of under 3 seconds for some users.

Server response time is close to the threshold of 500 milliseconds for a few users.

Documentation:

1. Create a new issue in JIRA for tracking performance issues.

2. Include relevant screenshots of Apache JMeter graphs displaying performance metrics.

3. Attach performance data collected during testing.

4. Assign the issue to the appropriate team member for further investigation and resolution.

Conclusion:

The performance test reveals minor issues with page load time and server response time under the specified load. Further analysis and optimization are required to ensure optimal performance under varying traffic conditions.

TEST PLAN:

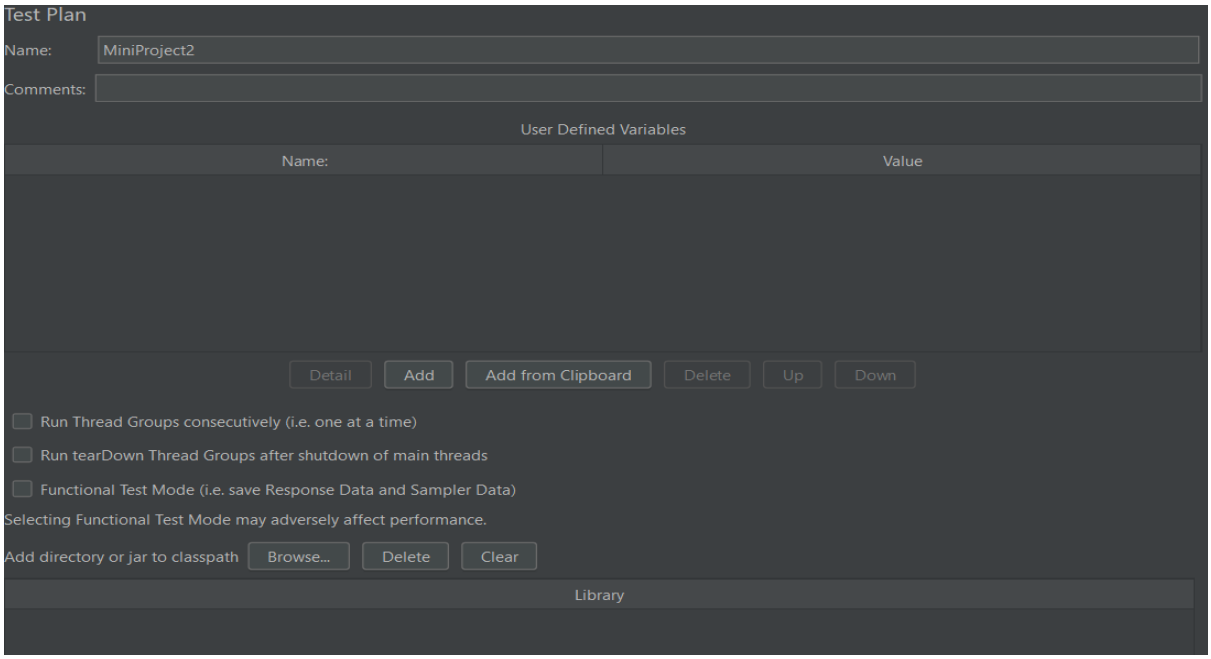


FIG:1

THREADS GROUP:

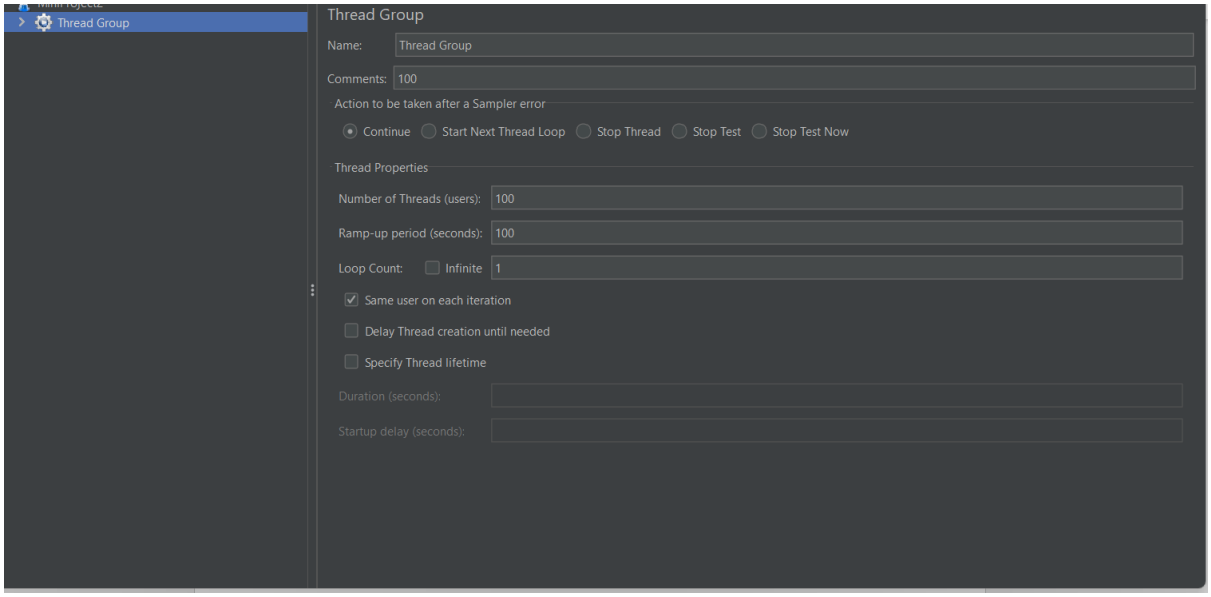


FIG:2

HTTP REQUEST:

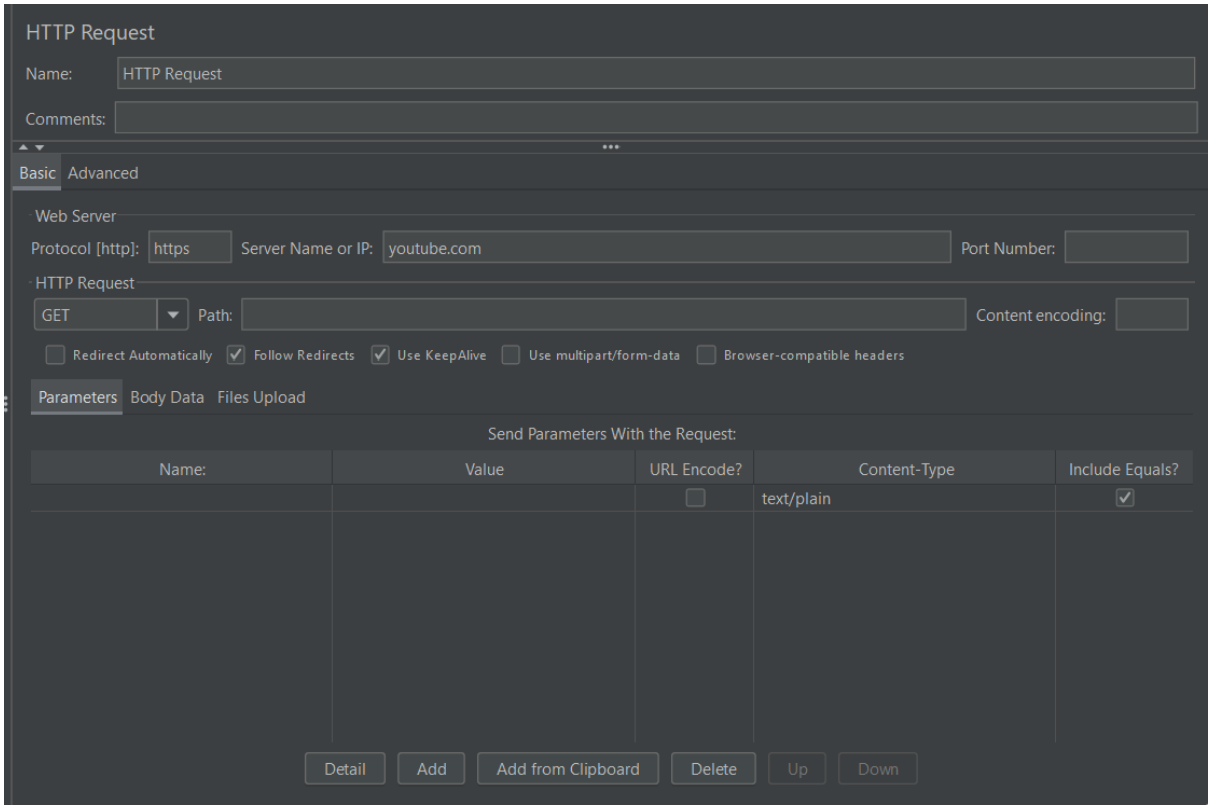


FIG:3

RESULTS TREE:

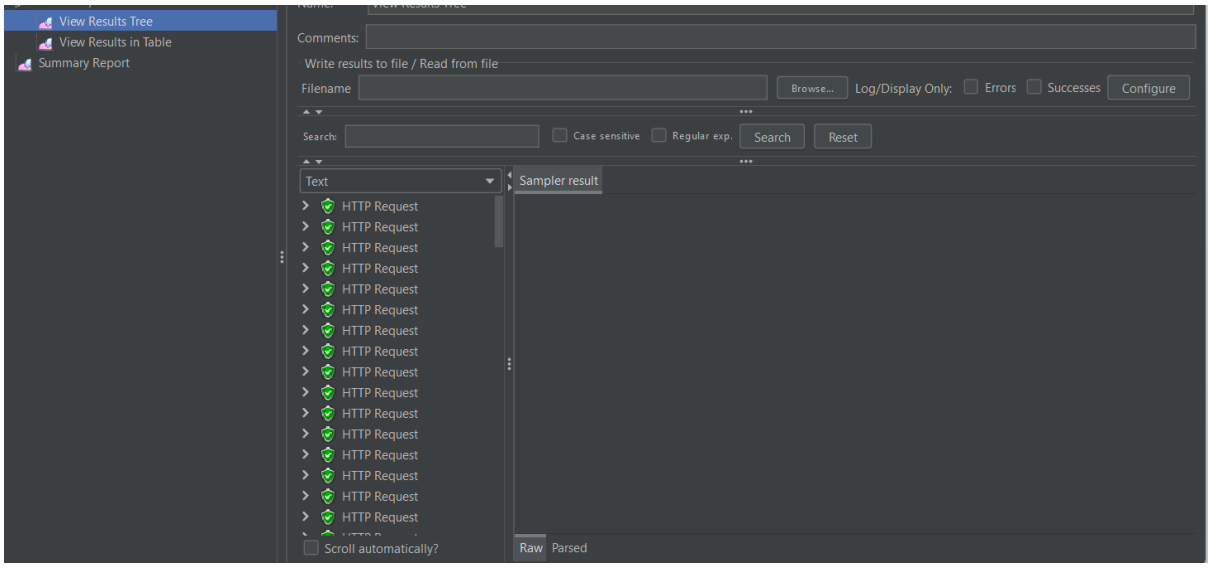
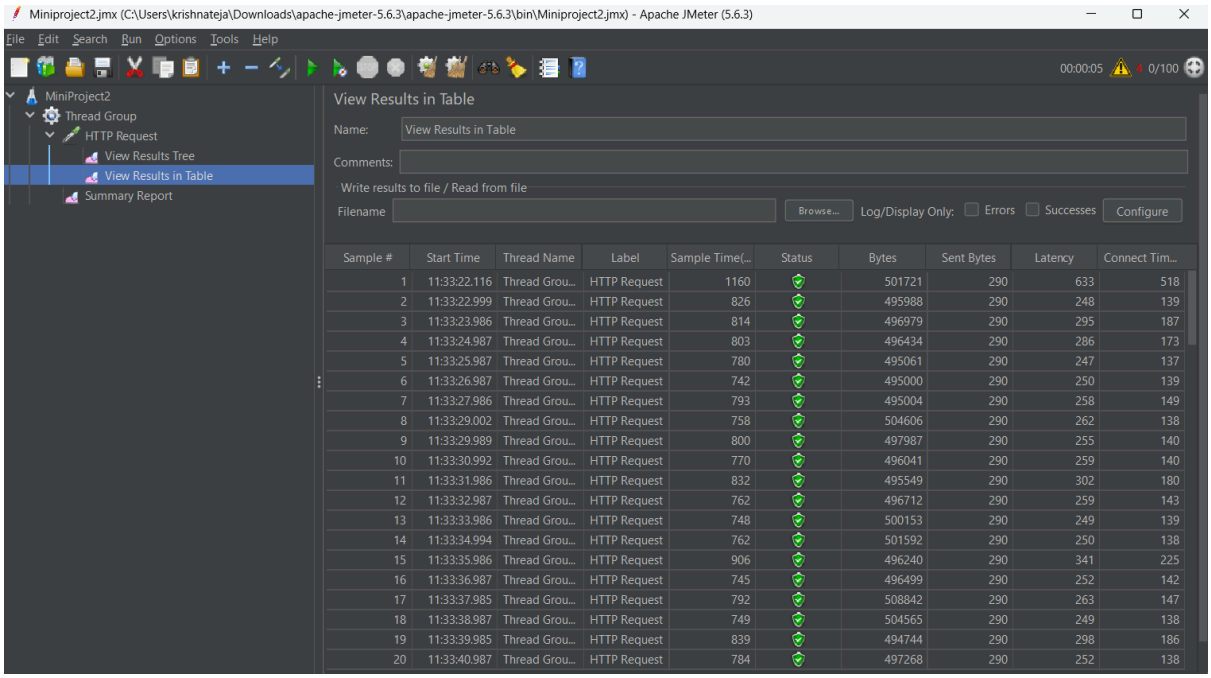


FIG:4

RESULTS TABLES:



Sample #	Start Time	Thread Name	Label	Sample Time(...	Status	Bytes	Sent Bytes	Latency	Connect Tim...
1	11:33:22.116	Thread Grou...	HTTP Request	1160		501721	290	633	518
2	11:33:22.999	Thread Grou...	HTTP Request	826		495988	290	248	139
3	11:33:23.986	Thread Grou...	HTTP Request	814		496979	290	295	187
4	11:33:24.987	Thread Grou...	HTTP Request	803		496434	290	286	173
5	11:33:25.987	Thread Grou...	HTTP Request	780		495061	290	247	137
6	11:33:26.987	Thread Grou...	HTTP Request	742		495000	290	250	139
7	11:33:27.986	Thread Grou...	HTTP Request	793		495004	290	258	149
8	11:33:29.002	Thread Grou...	HTTP Request	758		504606	290	262	138
9	11:33:29.989	Thread Grou...	HTTP Request	800		497987	290	255	140
10	11:33:30.992	Thread Grou...	HTTP Request	770		496041	290	259	140
11	11:33:31.986	Thread Grou...	HTTP Request	832		495549	290	302	180
12	11:33:32.987	Thread Grou...	HTTP Request	762		496712	290	259	143
13	11:33:33.986	Thread Grou...	HTTP Request	748		500153	290	249	139
14	11:33:34.994	Thread Grou...	HTTP Request	762		501592	290	250	138
15	11:33:35.986	Thread Grou...	HTTP Request	906		496240	290	341	225
16	11:33:36.987	Thread Grou...	HTTP Request	745		496499	290	252	142
17	11:33:37.985	Thread Grou...	HTTP Request	792		508842	290	263	147
18	11:33:38.987	Thread Grou...	HTTP Request	749		504565	290	249	138
19	11:33:39.985	Thread Grou...	HTTP Request	839		494744	290	298	186
20	11:33:40.987	Thread Grou...	HTTP Request	784		497268	290	252	138

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21	11:33:41.987	Thread Grou...	HTTP Request	774		497883	290	250	139
22	11:33:42.987	Thread Grou...	HTTP Request	775		499128	290	266	147
23	11:33:43.989	Thread Grou...	HTTP Request	820		501809	290	321	205
24	11:33:44.985	Thread Grou...	HTTP Request	770		502505	290	265	143
25	11:33:45.987	Thread Grou...	HTTP Request	767		495800	290	253	140
26	11:33:46.985	Thread Grou...	HTTP Request	745		502380	290	251	144
27	11:33:47.986	Thread Grou...	HTTP Request	794		497796	290	261	136
28	11:33:48.984	Thread Grou...	HTTP Request	766		494912	290	249	139
29	11:33:49.986	Thread Grou...	HTTP Request	742		509246	290	245	137
30	11:33:50.986	Thread Grou...	HTTP Request	766		497211	290	260	143
31	11:33:51.986	Thread Grou...	HTTP Request	874		496752	290	295	144
32	11:33:52.985	Thread Grou...	HTTP Request	839		495809	290	285	172
33	11:33:53.987	Thread Grou...	HTTP Request	779		729952	290	251	142
34	11:33:54.986	Thread Grou...	HTTP Request	763		496343	290	251	143
35	11:33:55.985	Thread Grou...	HTTP Request	833		497673	290	314	139
36	11:33:56.992	Thread Grou...	HTTP Request	756		496292	290	257	141
37	11:33:57.991	Thread Grou...	HTTP Request	781		497384	290	292	147
38	11:33:58.992	Thread Grou...	HTTP Request	739		497789	290	246	137

FIG:6

Filename | Browse... | Log/Display Only: Errors Successes | Configure

Sample #	Start Time	Thread Name	Label	Sample Time(...	Status	Bytes	Sent Bytes	Latency	Connect Tim...
40	11:34:00.986	Thread Grou...	HTTP Request	779		499241	290	249	141
41	11:34:01.986	Thread Grou...	HTTP Request	744		499436	290	243	136
42	11:34:02.986	Thread Grou...	HTTP Request	744		496497	290	248	140
43	11:34:03.986	Thread Grou...	HTTP Request	736		496254	290	255	145
44	11:34:04.986	Thread Grou...	HTTP Request	740		495130	290	245	137
45	11:34:05.984	Thread Grou...	HTTP Request	750		504261	290	251	140
46	11:34:06.992	Thread Grou...	HTTP Request	756		496085	290	250	143
47	11:34:07.986	Thread Grou...	HTTP Request	758		501802	290	258	149
48	11:34:08.985	Thread Grou...	HTTP Request	778		498167	290	245	137
49	11:34:09.984	Thread Grou...	HTTP Request	742		495204	290	255	139
50	11:34:10.984	Thread Grou...	HTTP Request	750		503012	290	247	138
51	11:34:11.988	Thread Grou...	HTTP Request	803		503189	290	312	205
52	11:34:12.987	Thread Grou...	HTTP Request	743		497577	290	249	134
53	11:34:13.986	Thread Grou...	HTTP Request	747		506867	290	256	139
54	11:34:14.985	Thread Grou...	HTTP Request	757		496208	290	253	141
55	11:34:15.985	Thread Grou...	HTTP Request	802		498398	290	301	188
56	11:34:16.986	Thread Grou...	HTTP Request	745		495694	290	250	143
57	11:34:17.986	Thread Grou...	HTTP Request	738		498595	290	252	141
58	11:34:18.984	Thread Grou...	HTTP Request	765		496315	290	244	134
59	11:34:19.986	Thread Grou...	HTTP Request	801		495319	290	321	195

FIG:7

60	11:34:20.985	Thread Grou...	HTTP Request	731		498276	290	248	137
61	11:34:21.985	Thread Grou...	HTTP Request	738		502880	290	251	139
62	11:34:22.985	Thread Grou...	HTTP Request	783		496528	290	267	144
63	11:34:23.985	Thread Grou...	HTTP Request	790		496159	290	299	191
64	11:34:24.987	Thread Grou...	HTTP Request	752		495017	290	254	145
65	11:34:25.987	Thread Grou...	HTTP Request	757		497420	290	250	142
66	11:34:26.986	Thread Grou...	HTTP Request	732		494951	290	249	138
67	11:34:27.984	Thread Grou...	HTTP Request	872		496828	290	347	233
68	11:34:28.986	Thread Grou...	HTTP Request	736		498022	290	244	135
69	11:34:29.986	Thread Grou...	HTTP Request	741		496821	290	254	136
70	11:34:30.985	Thread Grou...	HTTP Request	757		497724	290	250	137
71	11:34:31.985	Thread Grou...	HTTP Request	833		498713	290	344	232
72	11:34:32.985	Thread Grou...	HTTP Request	740		497466	290	250	140
73	11:34:33.984	Thread Grou...	HTTP Request	800		498473	290	252	135
74	11:34:34.986	Thread Grou...	HTTP Request	762		496924	290	245	137
75	11:34:35.985	Thread Grou...	HTTP Request	810		497297	290	302	156
76	11:34:36.985	Thread Grou...	HTTP Request	766		495741	290	249	137
77	11:34:37.985	Thread Grou...	HTTP Request	746		497014	290	245	136

FIG:8

80	11:34:40.988	Thread Grou...	HTTP Request	760		503494	290	249	138
81	11:34:41.985	Thread Grou...	HTTP Request	770		496653	290	259	143
82	11:34:42.985	Thread Grou...	HTTP Request	786		499121	290	252	138
83	11:34:43.986	Thread Grou...	HTTP Request	825		495955	290	297	180
84	11:34:44.987	Thread Grou...	HTTP Request	725		494759	290	246	137
85	11:34:45.986	Thread Grou...	HTTP Request	781		497123	290	256	136
86	11:34:46.984	Thread Grou...	HTTP Request	736		498121	290	255	137
87	11:34:47.987	Thread Grou...	HTTP Request	753		496929	290	250	141
88	11:34:48.984	Thread Grou...	HTTP Request	739		504870	290	242	136
89	11:34:49.985	Thread Grou...	HTTP Request	751		500256	290	247	138
90	11:34:50.984	Thread Grou...	HTTP Request	739		496097	290	248	142
91	11:34:51.984	Thread Grou...	HTTP Request	752		498241	290	248	139
92	11:34:52.996	Thread Grou...	HTTP Request	761		497724	290	251	138
93	11:34:53.995	Thread Grou...	HTTP Request	768		502697	290	251	140
94	11:34:54.986	Thread Grou...	HTTP Request	769		495238	290	253	141
95	11:34:55.985	Thread Grou...	HTTP Request	777		497970	290	276	167
96	11:34:56.985	Thread Grou...	HTTP Request	840		495879	290	246	135
97	11:34:57.985	Thread Grou...	HTTP Request	723		494731	290	250	137
98	11:34:58.985	Thread Grou...	HTTP Request	747		499372	290	248	138

FIG:9

98	11:34:58.985	Thread Grou...	HTTP Request	747		499372	290	248	138
99	11:34:59.985	Thread Grou...	HTTP Request	810		503954	290	317	203
100	11:35:00.985	Thread Grou...	HTTP Request	749		501312	290	250	140

FIG:10

SUMMARY REPORT:

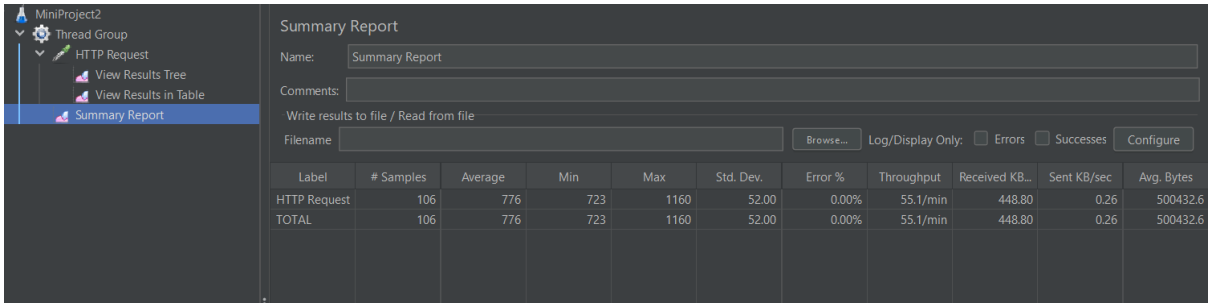

FIG:11