TESTING AUTOMATION

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# Manual Testing

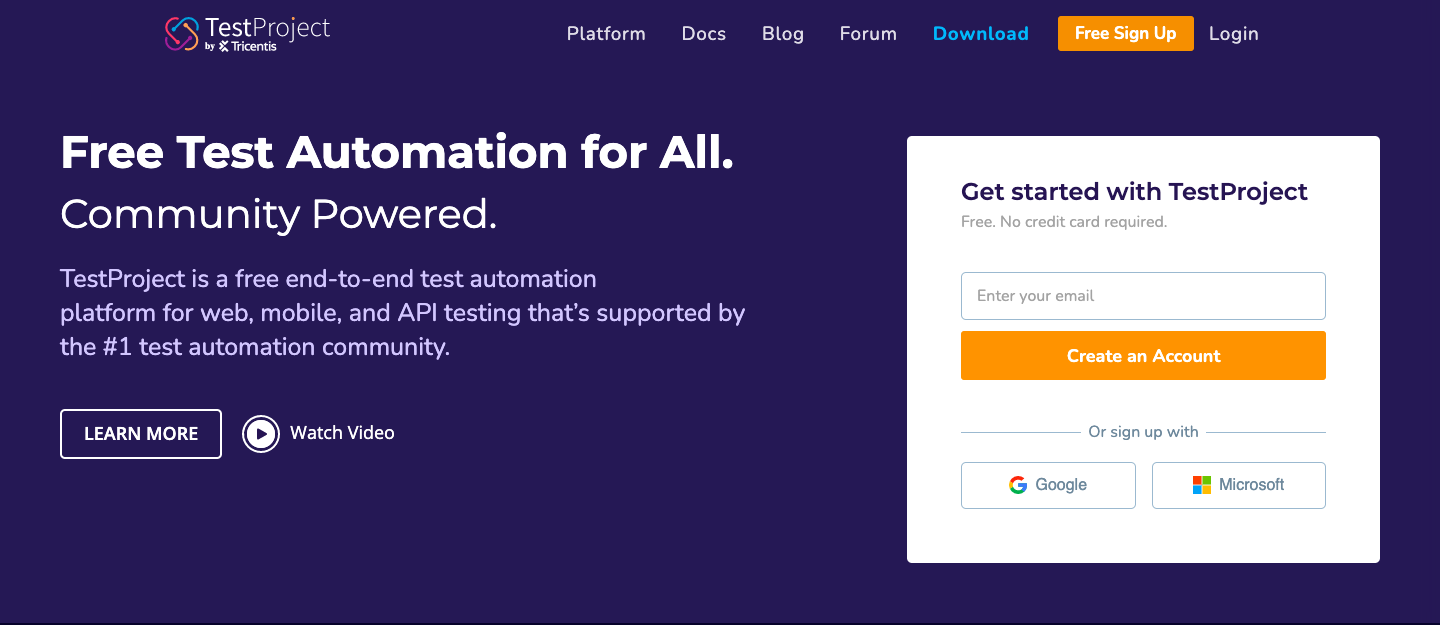
Test cases were created for the purpose of manual testing. Two dedicated testers conducted these test cases after every iteration of the build and provided detailed feedback to the developers if any bugs or errors were found.

# Automated Testing

There are a number of ways and techniques that can be used to make sure that our website for IE project is working alright. One of them was to automate the tests rather than using manual tests.

# TestProject - Tool

In our case we turned towards an automation tool which was free and readily available. Which is TestProject. It had multiple functions which were very useful. Some features like self-healing, adaptive wait and community addons were very appealing to us and hence we selected this tool for our testing. We also did manual testing just to double confirm our results.

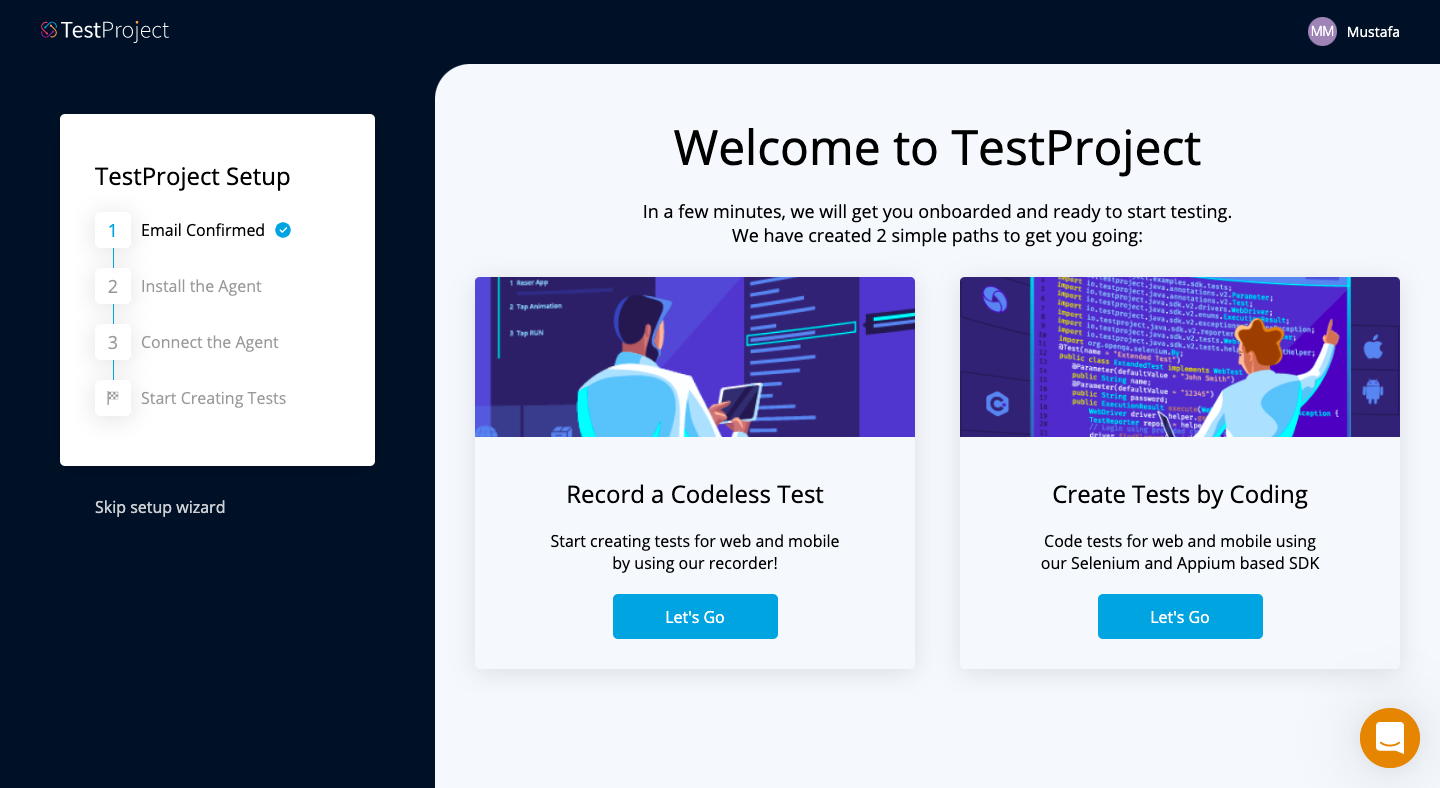


# Setup

## Step 1: Create a free account

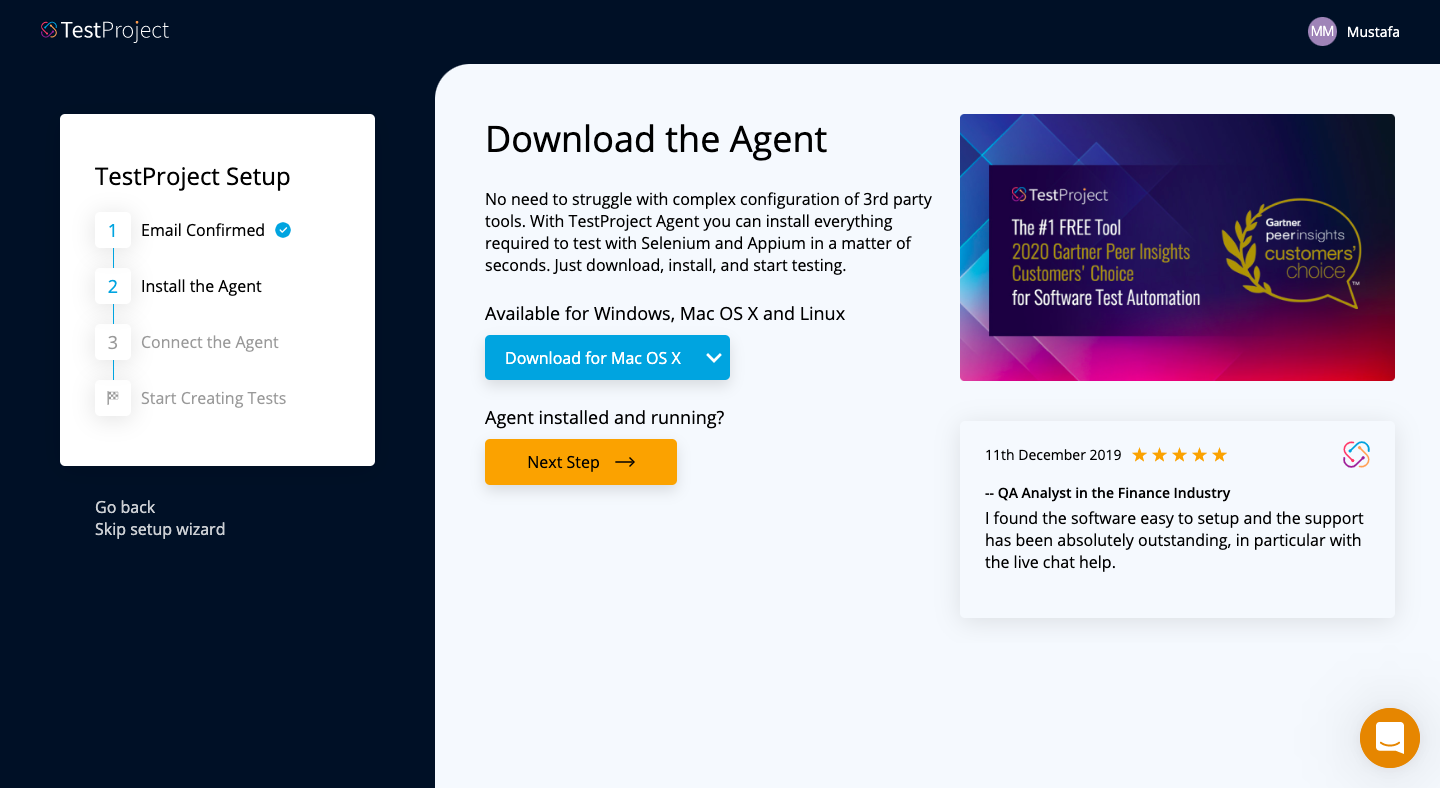
The first step for us to start our automated testing journey after selecting the tool was to create a free account. The following link can be used to create account:

<https://testproject.io/>.



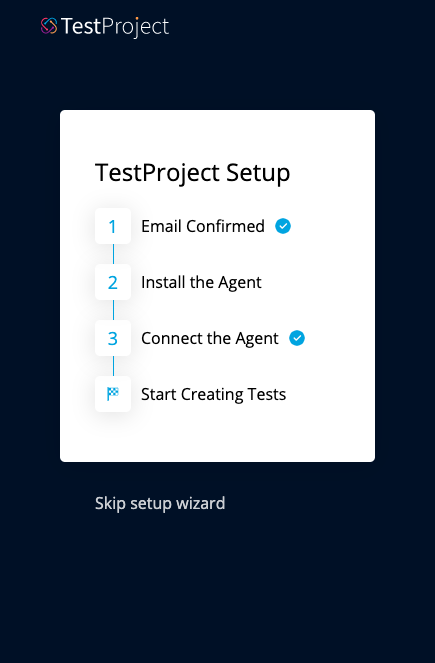
## Step 2: Install the agent

After the account is created and email confirmed we have to install the agent on our local machine. As we can see in the image below showing steps for TestProject setup.



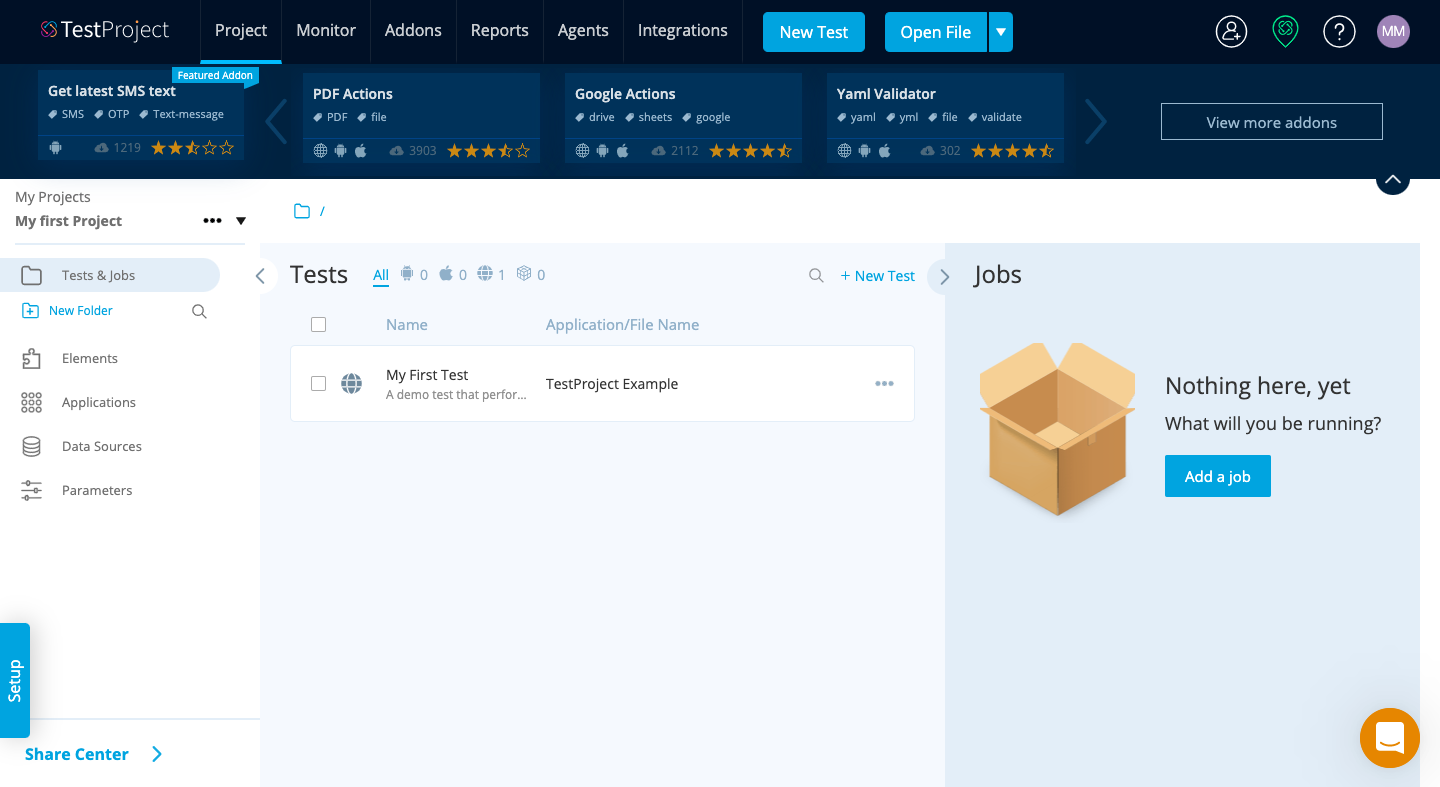
## Step 3: Connect the agent

After the agent has been downloaded we need to connect the agent with our account.



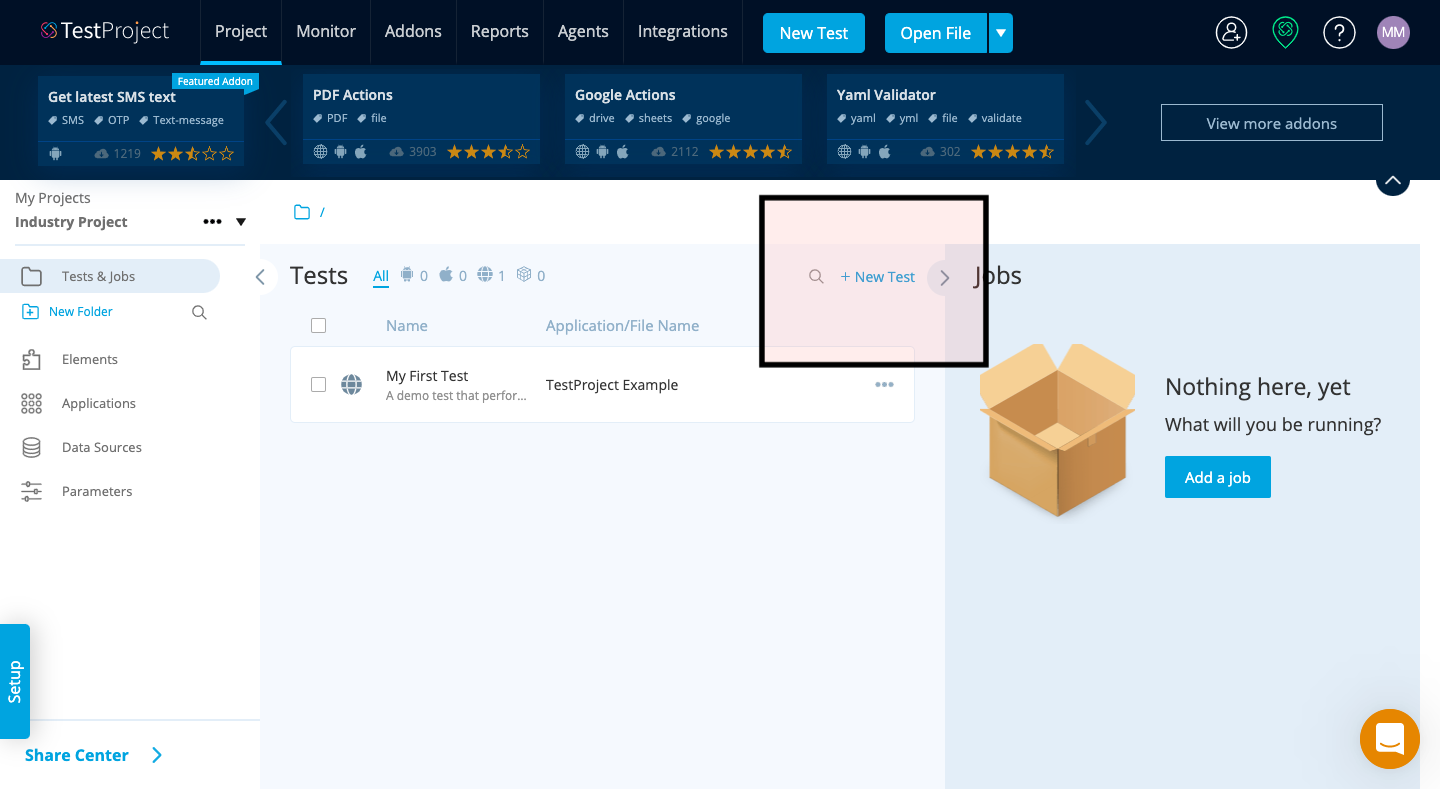
## Step 4: Start creating tests

Once the agent is connected you will be directed to the TestProject dashboard where you can start testing by creating and recording test scripts.

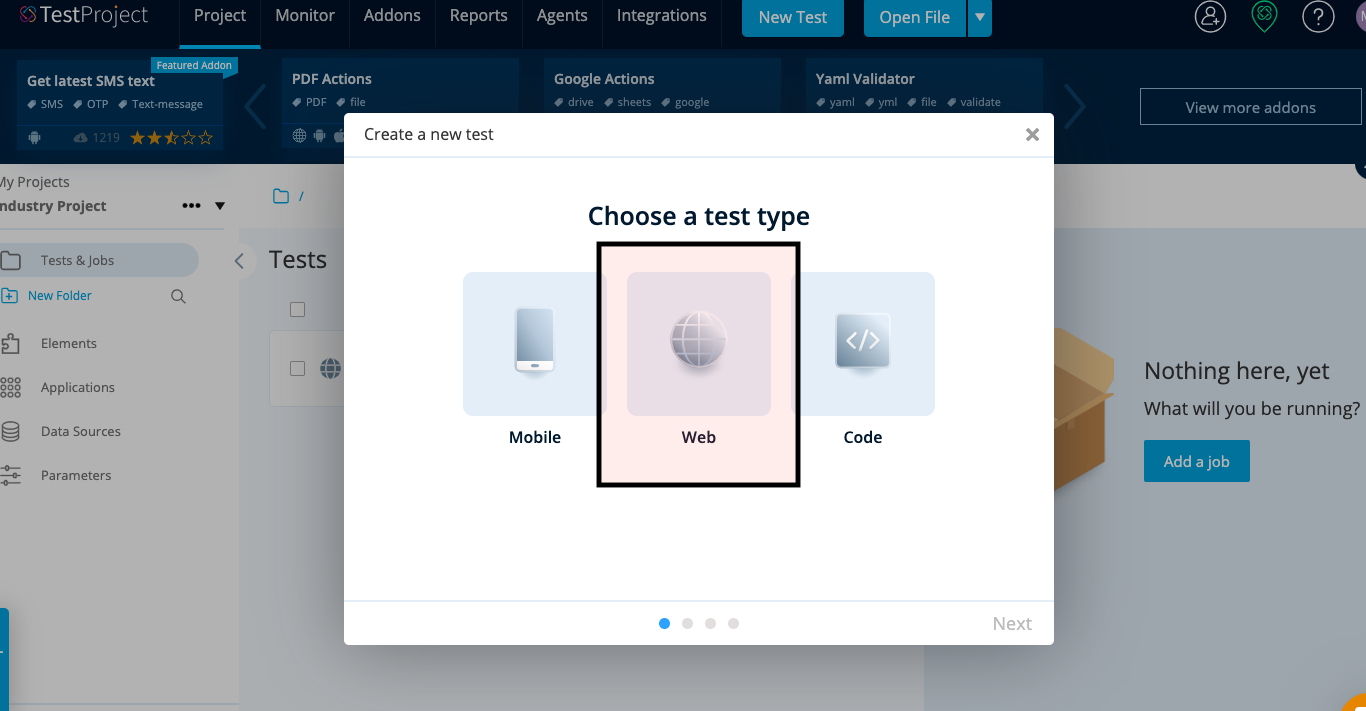


# How to automate tests

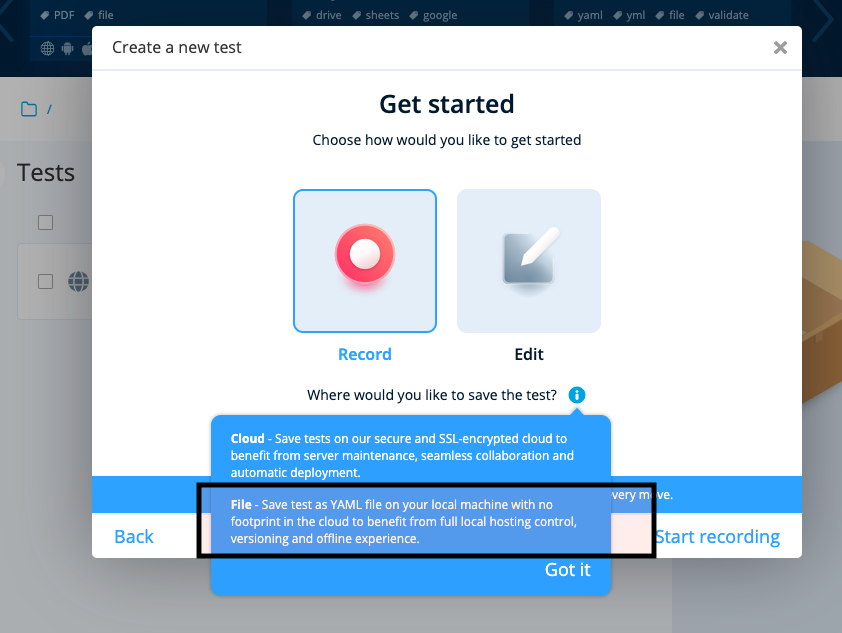
The automation journey can be started by creating a test by clicking on the “+ New test”.



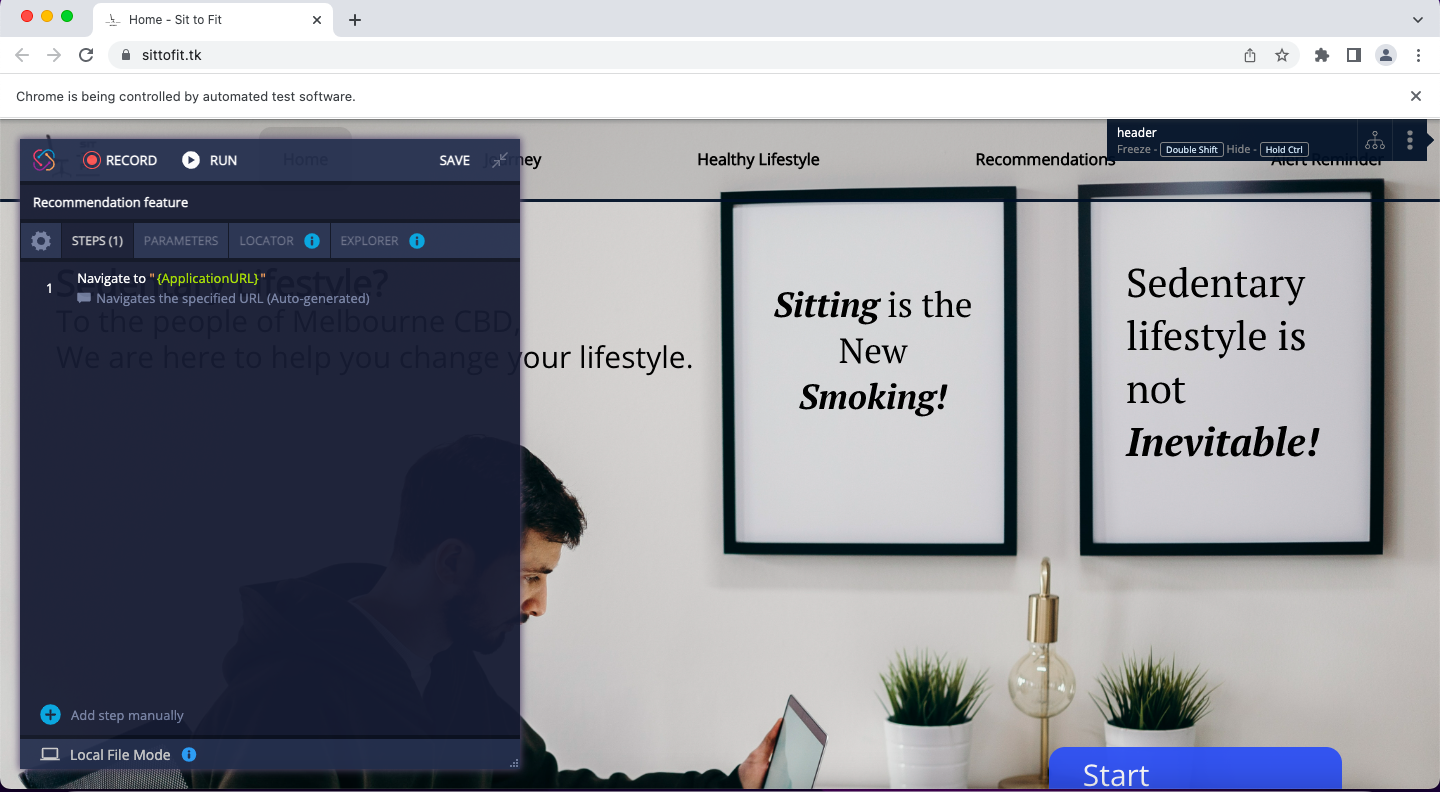
After this you will be prompted to add the test name and some description. Once you do this it will lead you to a next modal which will be asking you to choose a test type. In our case as we created a website we selected the web.



Once you select a test type you can start by recording. The automated tests can be saved on cloud or as a file on your machine. For our purpose we stored it in our local machine.



Moreover, multiple tests can be created on this tool. With all the tests script on the left. Edits can be made during testing.

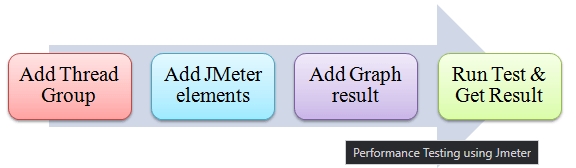


# Load Testing - JMeter

Load testing was conducted via free open source Java software called Apache Jmeter. This software was used to test the Sit-to-Fit homepage to test if the website can handle high load of users or not. It also allows us to understand the overall server performance under heavy user load. JMeter was used to test static resources such as the homepage of our website. We were able to view a graphical analysis for performance testing as a result.

# Setup

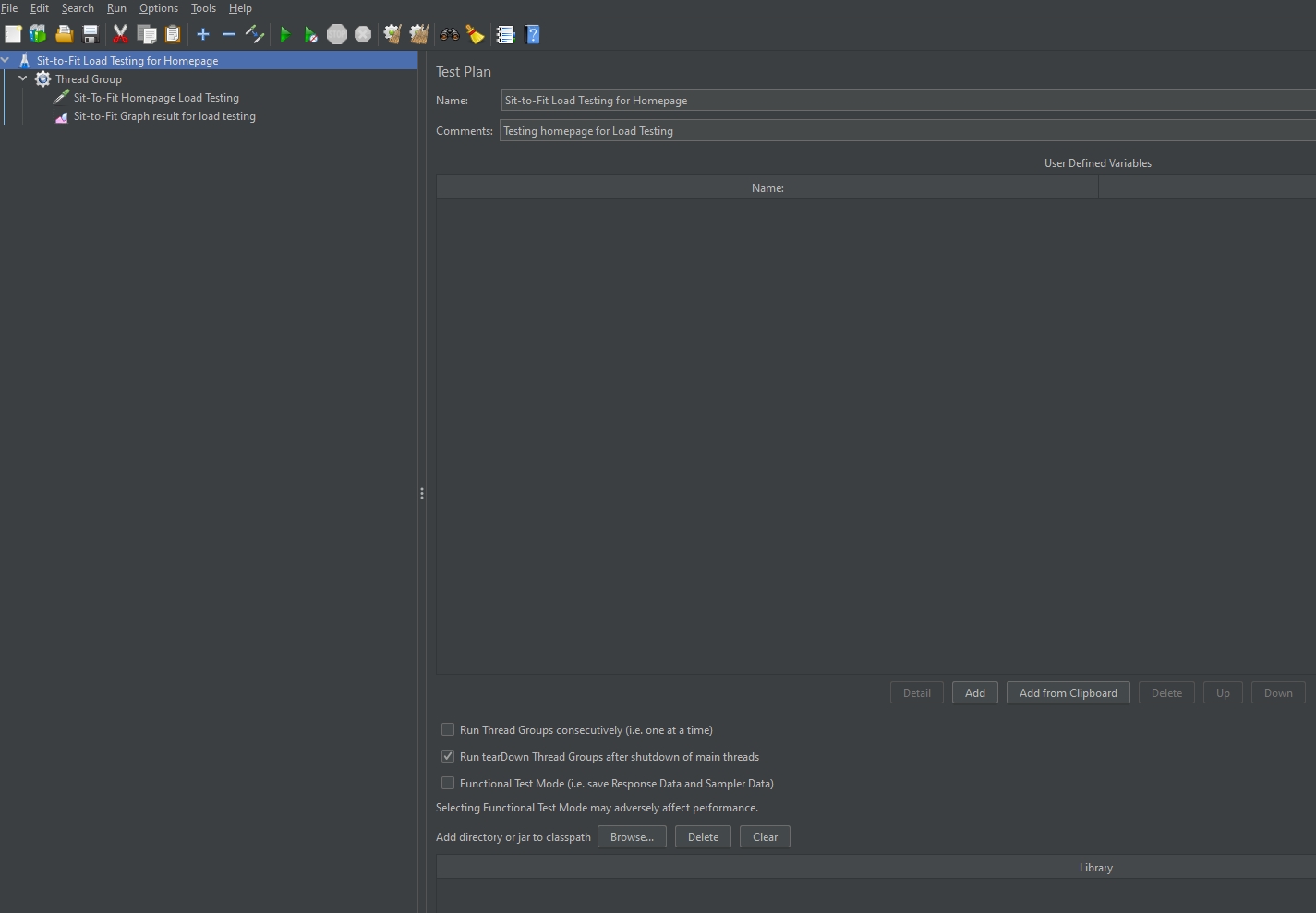
The roadmap for load test setup for JMeter.



# How to create a New Test case for Sit-to-Fit Load testing

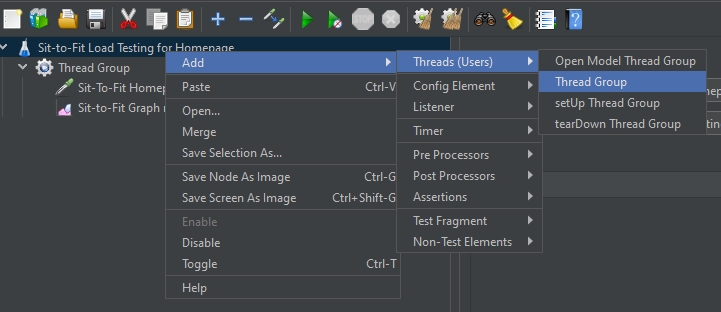
## Step 1: Name your test plan

The first is to create a new test plan and name it according to the load testing. In this case we have named our test plan as ‘’Sit-to-Fit Load Testing for Homepage’’. You can add more details in the comments section to describe the test plan in more detail. For our scenario we are conducting a load test for a Sit-to-Fit website so we have written ‘’Testing homepage for Load Testing’’.



## Step 2: Create a free account

The second step is to add a new thread group for our load testing. This can be done by:  
  
Right click on the “Sit-to-Fit Load Testing for Homepage” and add a new thread group: Add -> Threads (Users) -> Thread Group



## Step 3: Configure thread group

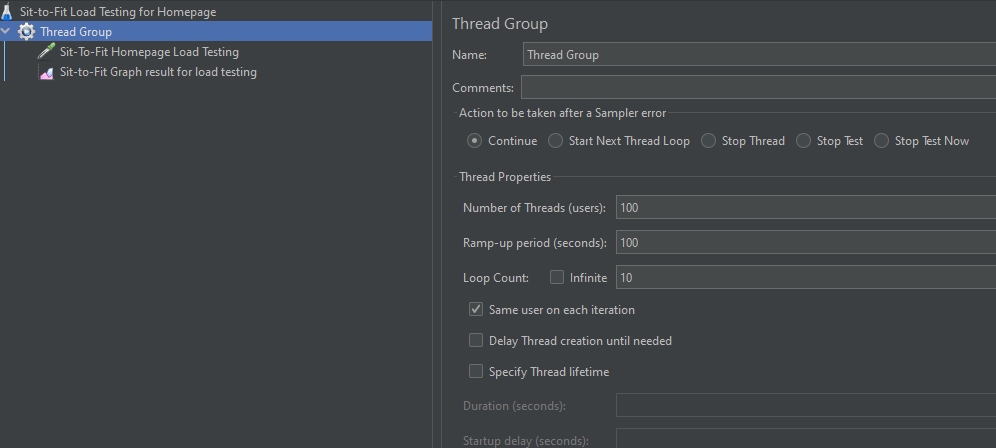
The third step is to configure the thread group according to your requirements. For our scenario, we have chosen 100 users, 100 ramp-up periods and loop count to 10.

Number of Threads: 100 (Number of users connects to the target website: 100)

Loop Count: 10 (Number of time to execute testing)

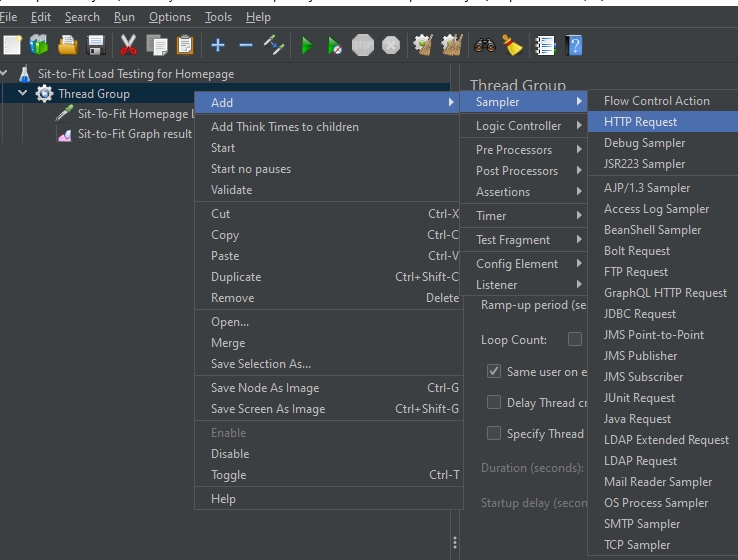
Ramp-Up Period: 100

Ramp-Up Period tells JMeter how long to delay before starting the next user. For example, if we have 100 users and a 100-second Ramp-Up period, then the delay between starting users would be 1 second (100 seconds /100 users) as we have done for this scenario.

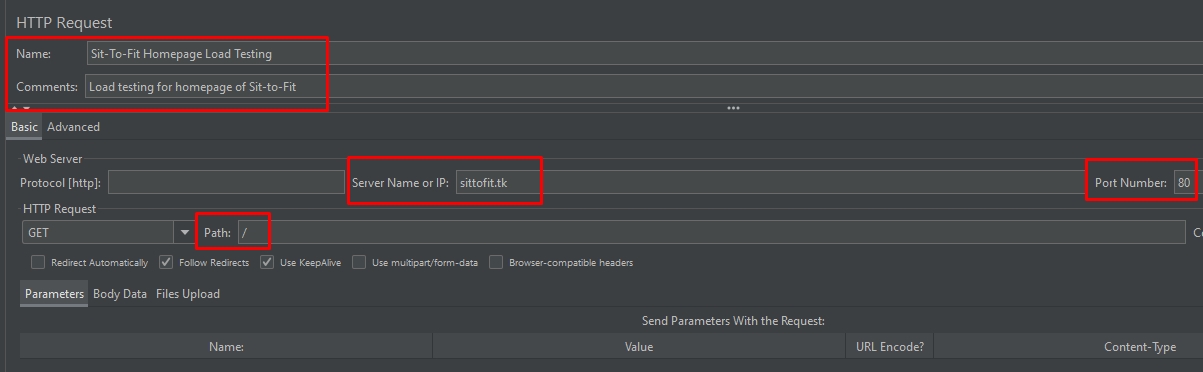


## Step 4: JMeter Elements

Now we will select what element the JMeter will test for load testing. In this case, we will choose ‘’HTTP Request’’ as we want to test the URL of the homepage of the Sit-to-Fit website.

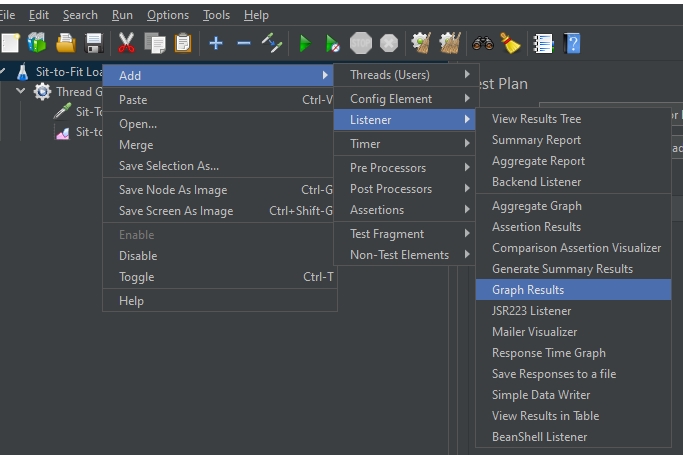


Then we can name our request and add comments. Then enter the URL in the server name or IP section. In our scenario we have entered “sittofit.tk” and added port number 80 and a forward slash ‘’/” in the path as we are targeting the homepage only for load testing.



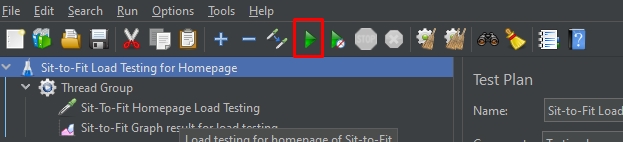
## Step 5: Adding Graph Result

In this step we will right click on our test plan and select ‘’listener’’ option and ‘’Graph Results’’ option. This will allow us to have a graphical representation of our load testing.



## Step 6 : Run your test

The last step is to run your test. There are multiple options to choose from to run your test. You can click the green arrow button to run the test as shown below. You can use the shortcut from your keyboard to run as well by pressing (Ctrl + R).



Once you have clicked run, we will see the test result displayed on Graph in the real time.

The picture below presents a graph of a test plan, where we simulated 100 users who accessed the website. There will be 1000 samples collected due to us adding 10 loops.

At the bottom of the screenshot, there are the following statistics, represented in colours:

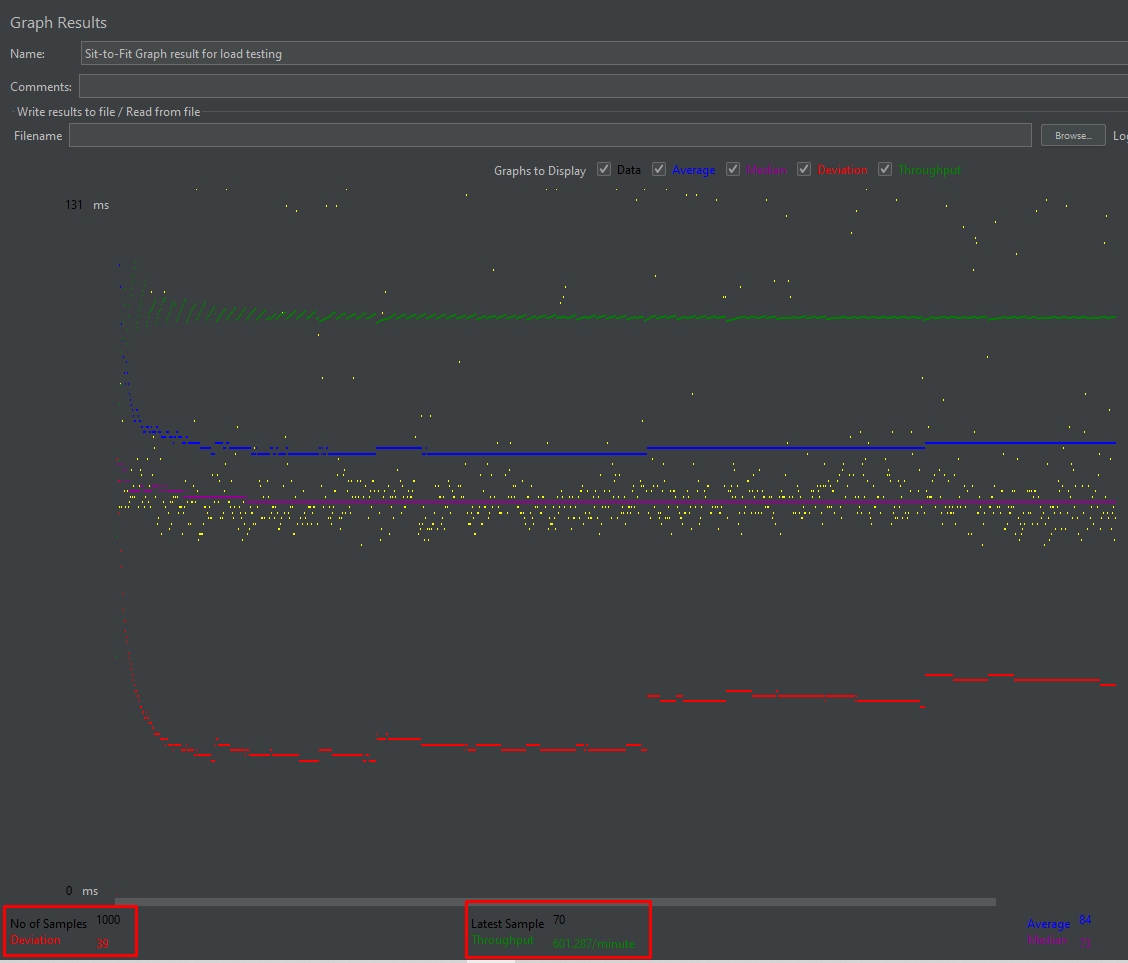
Black: The total number of current samples sent.

Blue: The current average of all samples sent.

Red: The current standard deviation.

Green: Throughput rate that represents the number of requests per minute the server handled

In this case, the two indicators we must focus on to determine the success of our load testing is the Throughput and Deviation. These two indicators allow us to understand if our server is able to handle heavy loads. The higher the throughput is shown, the better is the server performance. In this case our throughput shown is 601.287/minute. This means our server is able to handle 601.286/ requests per minute. This is sufficient for our website therefore we have passed this loadtest. The deviation is shown in red from the average. The smaller the number, the better it is.



# 

# 

# Testing Logs

## Unit Testing Logs

Each iteration build consisted of multiple test cases. Two of the testers from TP-31 conducted testing of the test cases at the end of each build to identify potential errors and to make sure everything is running as expected.

### Test cases for Build 1

| Test Case ID | | SF\_001 | Test Case Description | | Test the website URL is working and live | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Created By | | Mohammad | Reviewed By | | Ounam | | Version | | 1 | |
|  |  |  |  |  |  |  |  |  |  |  |
| QA Tester’s Log | |  | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Tester's Name | | Mustafa | Date Tested | | 26-Aug-2022 | | Test Case (Pass/Fail/Not Executed) | | Pass | |
|  |  |  |  |  |  |  |  |  |  |  |
| S # | Prerequisites: | | |  | S # | Test Data | | | | |
| 1 | Access to Chrome Browser | | |  | 1 | Username = tp31 | | | | |
| 2 | Access to domain name | | |  | 2 | Password = sittofit | | | | |
| 3 |  | | |  | 3 |  | | | | |
| 4 |  | | |  | 4 |  | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| Test Scenario | Verify on entering valid username and password to access the homepage of Sit to Fit and being able to view the homepage | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Step # | Step Details | | Expected Results | | Actual Results | | | Pass / Fail / Not executed / Suspended | | |
|
| 1 | Navigate to http://sittofit.tk/ | | Site should open | | Site opens | | | Pass | | |
| 2 | Enter Userid & Password | | Credential can be entered | | Credentials can be entered | | | Pass | | |
| 3 | Click Submit | | User can view the homepage of Sit-To-Fit | | Can view homepage | | | Pass | | |

| Test Case ID | | SF\_002 | Test Case Description | | Test the website URL is working and live | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Created By | | Mohammad | Reviewed By | | Zicong | | Version | | 1 | |
|  |  |  |  |  |  |  |  |  |  |  |
| QA Tester’s Log | |  | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Tester's Name | | Tao | Date Tested | | 26-Aug-2022 | | Test Case (Pass/Fail/Not Executed) | | Pass | |
|  |  |  |  |  |  |  |  |  |  |  |
| S # | Prerequisites: | | |  | S # | Test Data | | | | |
| 1 | Access to Chrome Browser | | |  | 1 | Username = tp31 | | | | |
| 2 | Access to domain name | | |  | 2 | Password = sittofit | | | | |
| 3 | Access to password and username to access the website homepage | | |  | 3 |  | | | | |
| 4 |  | | |  | 4 |  | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| Test Scenario | Verify on accessing the journey to learning about sedentary lifestyle by clicking the ‘’Start your healthy lifestyle’’ button | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Step # | Step Details | | Expected Results | | Actual Results | | | Pass / Fail / Not executed / Suspended | | |
|
| 1 | Navigate to http://sittofit.tk/ | | Site should open | | Opens | | | Pass | | |
| 2 | Enter Userid & Password | | Credential can be entered | | Can enter credentials | | | Pass | | |
| 3 | Click Submit | | User can view the homepage of Sit-To-Fit | | Can view homepage | | | Pass | | |
| 4 | Once homepage displayed, click the ‘’Start your healthy lifestyle’’ button to navigate to start learning more about sedentary lifestyle page and start user journey | | Once user clicks ‘’Start your healthy lifestyle’’ button, user is taken to the sedentary lifestyle page. | | User is taken to sedentary lifestyle user journey page after clicking “’Start your healthy lifestyle” | | | Pass | | |

### Test cases for Build 2

| Test Case ID | | HL\_001 | Test Case Description | | Test the Healthy Lifestyle page | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Created By | | Mohammad | Reviewed By | | Ounam | | Version | | 1 | |
|  |  |  |  |  |  |  |  |  |  |  |
| QA Tester’s Log | |  | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Tester's Name | | Mustafa | Date Tested | | 15-Sept-2022 | | Test Case (Pass/Fail/Not Executed) | | Pass | |
|  |  |  |  |  |  |  |  |  |  |  |
| S # | Prerequisites: | | |  | S # | Test Data | | | | |
| 1 | Access to Chrome Browser | | |  | 1 | Username = tp31 | | | | |
| 2 | Access to domain name | | |  | 2 | Password = sittofit | | | | |
| 3 |  | | |  | 3 |  | | | | |
| 4 |  | | |  | 4 |  | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| Test Scenario | Verify on entering a valid username and password to access the homepage of Sit to Fit and being able to view the homepage. Then being able to healthy lifestyle section by clicking ‘’Healthy Lifestyle’’section at top menu of website. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Step # | Step Details | | Expected Results | | Actual Results | | | Pass / Fail / Not executed / Suspended | | |
|
| 1 | Navigate to http://sittofit.tk/ | | Site should open | | Site opens | | | Pass | | |
| 2 | Enter Userid & Password | | Credential can be entered | | Can enter credentials | | | Pass | | |
| 3 | Click Submit | | User can view the homepage of Sit-To-Fit | | Can view homepage | | | Pass | | |
| 4 | Click the top of the menu page over to the “Healthy Lifestyle’’ section | | User should be redirected to the Healthy Lifestyle page | | Redirected to Healthy Lifestyle Page | | | Pass | | |

| Test Case ID | | DP\_001 | Test Case Description | | Test the Dietary Plan page | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Created By | | Mohammad | Reviewed By | | Tao | | Version | | 1 | |
|  |  |  |  |  |  |  |  |  |  |  |
| QA Tester’s Log | |  | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Tester's Name | | Mustafa | Date Tested | | 15-Sept-2022 | | Test Case (Pass/Fail/Not Executed) | | Fail | |
|  |  |  |  |  |  |  |  |  |  |  |
| S # | Prerequisites: | | |  | S # | Test Data | | | | |
| 1 | Access to Chrome Browser | | |  | 1 | Username = tp31 | | | | |
| 2 | Access to domain name | | |  | 2 | Password = sittofit | | | | |
| 3 |  | | |  | 3 |  | | | | |
| 4 |  | | |  | 4 |  | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| Test Scenario | Verify on entering a valid username and password to access the homepage of Sit to Fit and being able to view the homepage. Then being able to healthy lifestyle section by clicking ‘’Healthy Lifestyle’’section at top menu of website. Then clicking the ‘Dietary Plans’’ | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Step # | Step Details | | Expected Results | | Actual Results | | | Pass / Fail / Not executed / Suspended | | |
|
| 1 | Navigate to http://sittofit.tk/ | | Site should open | | Site opens | | | Pass | | |
| 2 | Enter Userid & Password | | Credential can be entered | | Credentials can be entered | | | Pass | | |
| 3 | Click Submit | | User can view the homepage of Sit-To-Fit | | Can view home page | | | Pass | | |
| 4 | Hover over the mouse at the top of the menu page over “Healthy Lifestyle’’ and click ‘’Dietary Plans’’ | | User should be redirected to the Dietary Plans page | | “Healthy Lifestyle” has no drop down menu for “Dietary Plans” selection. | | | Fail | | |

| Test Case ID | | AL\_001 | Test Case Description | | Test the Alert Reminder feature | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Created By | | Mohammad | Reviewed By | | Tao | | Version | | 1.0 | |
|  |  |  |  |  |  |  |  |  |  |  |
| QA Tester’s Log | |  | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Tester's Name | | Mustafa | Date Tested | | 15-Sept-2022 | | Test Case (Pass/Fail/Not Executed) | | Pass | |
|  |  |  |  |  |  |  |  |  |  |  |
| S # | Prerequisites: | | |  | S # | Test Data | | | | |
| 1 | Access to Chrome Browser | | |  | 1 | Username = tp31 | | | | |
| 2 | Access to domain name | | |  | 2 | Password = sittofit | | | | |
| 3 |  | | |  | 3 |  | | | | |
| 4 |  | | |  | 4 |  | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| Test Scenario | Verify on entering valid username and password to access the homepage of Sit to Fit and being able to view the homepage. Then being able to enter the alert reminder page by clicking the ‘’alert reminder’’ on top of the homepage menu, then select 20 min reminder and get notification in 20 min. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Step # | Step Details | | Expected Results | | Actual Results | | | Pass / Fail / Not executed / Suspended | | |
|
| 1 | Navigate to http://sittofit.tk/ | | Site should open | | Site opens | | | Pass | | |
| 2 | Enter Userid & Password | | Credential can be entered | | Credential can be entered | | | Pass | | |
| 3 | Click Submit | | User can view the homepage of Sit-To-Fit | | Can view homepage | | | Pass | | |
| 4 | Click the top of the menu page over to the “Alert Reminder’’ section | | User should be redirected to the Alert Reminder page | | Redirected to Alert Reminder | | | Pass | | |
| 5 | User can selects alert reminder for 20 miniutes | | Countdown startsUser gets notified in 20 minutes to take a break | | User gets notified in 20 mins | | | Pass | | |

| Test Case ID | | RS\_001 | Test Case Description | | Test the recommendation system | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Created By | | Mohammad | Reviewed By | | Mustafa | | Version | | 1.0 | |
|  |  |  |  |  |  |  |  |  |  |  |
| QA Tester’s Log | |  | | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Tester's Name | | Mustafa | Date Tested | | 15-Sept-2022 | | Test Case (Pass/Fail/Not Executed) | | Fail | |
|  |  |  |  |  |  |  |  |  |  |  |
| S # | Prerequisites: | | |  | S # | Test Data | | | | |
| 1 | Access to Chrome Browser | | |  | 1 | Username = tp31 | | | | |
| 2 | Access to domain name | | |  | 2 | Password = sittofit | | | | |
| 3 |  | | |  | 3 |  | | | | |
| 4 |  | | |  | 4 |  | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| Test Scenario | Verify on entering valid username and password to access the homepage of Sit to Fit and being able to view the homepage. Then being able to enter the recommendation page, select preferences and view and rate recommendation cards. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Step # | Step Details | | Expected Results | | Actual Results | | | Pass / Fail / Not executed / Suspended | | |
|
| 1 | Navigate to http://sittofit.tk/ | | Site should open | | Site opens | | | Pass | | |
| 2 | Enter Userid & Password | | Credential can be entered | | Can be entered | | | Pass | | |
| 3 | Click Submit | | User can view the homepage of Sit-To-Fit | | can view homepage | | | Pass | | |
| 4 | Click the ‘’Recommendation’’ menu at the top of homepage | | Recommendation page for preferences should appear | | Recommendations opens | | | Pass | | |
| 5 | Selecting the first two preferences ‘’ Cycling’’ and ‘’Cardio’’ and click ‘’Go’’ | | Cards related to Cycling and Cardio should appear in the next page. | | Cards related to cycling and Cardio appear on the next page. | | | Pass | | |
| 6 | Selecting the cardio card and rating it positive | | Rating gets updated for that card and a new card gets shown | | New card does not show when a positive rating is selected. | | | Fail | | |

## UI testing (Happy Flow) for healthy lifestyle

| Test | Front end testing for healthy lifestyle |
| --- | --- |
| Steps | 1. Navigate to URL <https://sittofit.tk/>.  2. Click “Healthy Lifestyle”.  3. Navigate to the bottom of the page “Physical Ergonomics”.  4. Click “Discover More”.  5. Scroll to check if the page loads properly.  6. Click “Physical Activities”, “Dietary Planning” and “Physical Ergonomics”.  7. If all steps are followed and no error occurs this test passes. |
| Alternative clicks | Click back to homepage |
| Result | Pass |

Note: Yaml file for this test is also attached to the PGP folder.