

Linnaeus University

Faculty of Technology – Department of Computer Science

2DV610 – Software Testing



Test Report

Introduction:

The data and screenshots are the results of different testing. Regarding the Junit testing, the results of the tests in the packages view, integration, respond, and the rest of the tests will be attached in this file. Moving on, a traceability table will be included that will help the reader to figure out which test cases were passed or failed. Regarding the manual test cases, its main data will be its status (pass and fail), expected result, and actual result.

Manual Test

TC 1.1.1 - REQ1.1 The web server should be responsive under high load

Requirement: REQ1.1

Expected results:

The webserver should be responsive under high load of HTTP requests without any failure or error.

Actual Result:

The Web server is responsive under high load with 1000 thread groups.

Status: Pass

TC 1.1.2 - REQ1.2 The web server should be responsive under high load

Requirement: REQ1.2

Expected results:

The webserver should be responsive under high load of HTTP requests without any failure or error.

Actual Result:

The Web server is responsive under high load with 1000 thread groups.

Status: Pass

TC 1.2.1 - REQ2.1 The web server must follow minimum requirements for HTTP 1.1 with Mozilla Firefox

Requirement: REQ2.1

Expected results:

It should display "HTTP/1.1" and 200 OK" on the Headers sections of the response window.

Actual Result:

The Web server displays HTTP/1.1" and 200 OK on the Headers section.

Status: Pass

TC 1.2.2 - REQ2.2 The web server must follow minimum requirements for HTTP 1.1 with Curl

Requirement: REQ2.2

Expected results:

It should display “HTTP/1.1 200 OK”.

Actual Result:

The web server displays “HTTP/1.1 200 OK”.

Status: Pass

TC 1.3.1 - REQ3.1 The web server must work on Windows 10

Requirement: REQ3.1

Expected results:

The server should work on Windows 10.

Actual Result:

The server works as expected on Windows 10.

Status: Pass

TC 1.3.2 - REQ3.2 The web server must work on Mac OS.

Requirement: REQ3.2

Expected results:

The server should work on Mac OS.

Actual Result:

The server works as expected on Mac OS.

Status: Pass

TC 1.4 - REQ4 The source code should be released under GPL-2.0

Requirement: REQ4

Expected results:

The Web Server is licensed under GPL-2.0.

Actual Result:

The Web Server is under MIT license.

Status: Fail

TC 1.5 - REQ5 the access log should be viewable from a text editor

Requirement: REQ5

Expected results:

The “log.txt” file should exist and be viewable in a text editor.

Actual Result:

“log.txt” file is not created and no error message is displayed in the Console.

Status: Fail

TC 1.6.1 - Start Server - The web server must start from a given port

Use Case: 1.2

Requirement:

Req 3. The web server must work on Linux, Mac, Windows*.

Expected results:

The web server should start according to the given port and resource location. Also, it will display the message "HTTP Server started".

Actual Result:

The web server works on the specific port and displays the message.

Status: pass

TC 1.6.2 -The web server must write notifications in the access log file

Use Case:1.4

Requirement:

Req 5. The access log should be viewable from a text editor.

Expected results:

The web server should start according to the port and location of the given resource and write a notification in the access log that the system is started.

Actual Result:

The web server starts with the specific port, but the notification is not written on the access log because it is not created.

Status: Fail

TC 1.6.3 - The web server must not start because of the taken socket

Use Case: 1.4a

Requirement:

Req 3. The web server must work on Linux, Mac, Windows*.

Expected results:

The web server output should be an error message like "Socket XX was taken" (XX is the socket number, Example "80").

Actual Result:

Based on the expected result the web server should display exactly what socket number is taken but it only prints "Port is taken".

Status: Fail

TC 1.6.4 - The web server should not start due to restriction on the shared resource container

Use Case:1.4b

Requirement:

Req 3. The web server must work on Linux, Mac, Windows*.

Expected results:

The web server output should be an error message like "No access to folder XX" (XX is the shared resource container provided, Example "\var\www").

Actual Result:

The web server crashes (showing thread exception) so the whole server crashes and it does not display the expected error message.

Status: Fail

TC 1.6.5 - Server Start – log information could not be written to server log file

Use Case: 1.4c

Requirement:

Req 5. The access log should be viewable from a text editor.

Expected results:

The system presents an error message. “Cannot write to server log file log.txt”.

Actual Result:

“log.txt” file does not create, and no error message is displayed in the Console.

Status: Fail

TC 1.7.1 - When requesting a stop from the web server, the system should stop the server

Use Case: 2.1

Requirement:

Req 3. The web server must work on Linux, Mac, Windows*.

Expected results:

A message showing that the webserver is not running anymore (Stopped) will be displayed.

Actual Result:

The system is not running anymore by requesting a stop.

Status: Pass

TC 1.7.2 – Stop notification should be written on the access log.

Use Case:2.2

Requirement:

Req 5. The access log should be viewable from a text editor.

Expected results:

As soon as the access log has been written, it should be displayed in the log file.

Actual Result:

“log.txt” file has not created, and no notification is displayed in the console.

Status: Fail

TC 1.8.1 - The web server should display the requested resource Status Code 200 and write to the log

Use Case:3.2

Requirement:

Req 2. The web server must follow minimum requirements for HTTP 1.1

Expected results:

When checking in the browser, the web server should make the website content available and write a success message in the access log.

Actual Result:

The web server displays the contents in the browser and displays the status code 200. Although “log.txt” file is not created, the Web Server could not write the information to a log file that does not exist.

Status: Fail

TC 1.8.2 - The web server should be able to respond and show Status Code 404 Not Found

Use Case:3.2a

Requirement:

Req 2. The web server must follow minimum requirements for HTTP 1.1

Expected results:

"404 Not Found" status code should be displayed in the browser.

Actual Result:

"404 Not Found" status code displays in the browser.

Status: Pass

TC 1.8.3 - The web server should be able to respond and show Status Code 403 Forbidden

Use Case:3.2b

Requirement:

Req 2. The web server must follow minimum requirements for HTTP 1.1

Expected results:

"403 Forbidden" status code should be displayed in the terminal.

Actual Result:

"403 Forbidden" status code displays in the terminal.

Status: Pass

TC 1.8.4 - The web server should be able to respond and show Status Code 400 Bad request

Use Case:3.2c

Expected results:

"400 Bad Request" status code should be displayed.

Actual Result:

"400 Bad Request" status code displays.

Status: Pass

TC 1.8.5 - The server should encounter an error when trying to perform the request

Use Case: 3.2d

Requirement:

Req 2. The web server must follow minimum requirements for HTTP 1.1

Expected results:

"405 requests not allowed" status code should be displayed.

Actual Result:

The Status Code 405 is displayed.

Status: Pass

Traceability Matrix

The below table(traceability) will demonstrate the status of manual testcases.

Test	REQ1.1	REQ1.2	REQ2.1	REQ2.2	REQ3.1	REQ3.2	REQ4	REQ5
TC1.1.1	OK							
TC1.1.2		OK						
TC1.2.1			OK					
TC1.2.2				OK				
TC1.3.1					OK			
TC1.3.2						OK		
TC1.4							Fail	
TC1.5								Fail

The below table will demonstrate the status of Junit Tests.

Test	JU-integration	JU-Response	JU-View	JU-Complete	Acceptance Testing
TCJU1	Fail				
TCJU2		OK			
TCJU3			OK		
TCJU4				Fail	
TA					OK

The below table will demonstrate the status of Use cases.

Test	UC1.2	UC1.4	UC1.4a	UC1.4b	UC1.4c	UC2.1	UC2.2	UC3.2	UC3.2a	UC3.2b	UC3.2c	UC3.2d
TC1.6.1	OK											
TC1.6.2		Fail										
TC1.6.3			Fail									
TC1.6.4				Fail								
TC1.6.5					Fail							
TC1.7.1						Pass						
TC1.7.2							Fail					
TC1.8.1								Fail				
TC1.8.2									OK			
TC1.8.3										OK		
TC1.8.4											OK	
TC1.8.5												OK

Automated Tests

- Integration
- Response
- View
- Complete Junit tests

TCJU1 Test – Integration

Requirement:

Req 1. The web server should be responsive under high load.

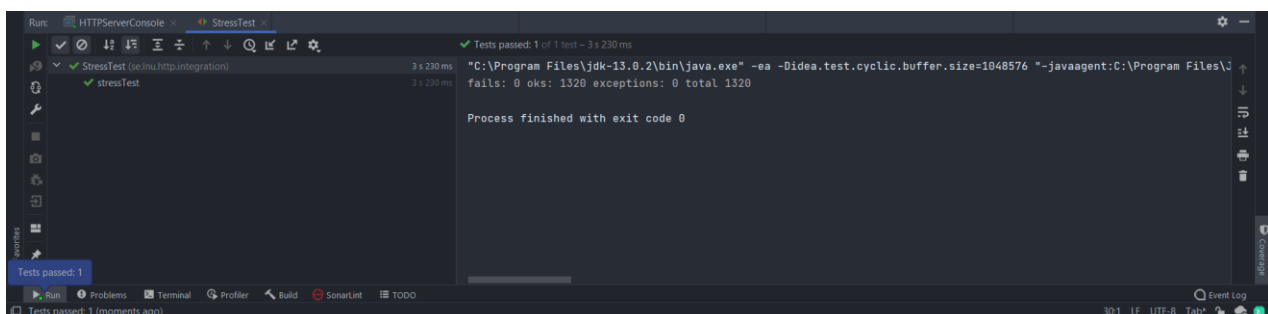
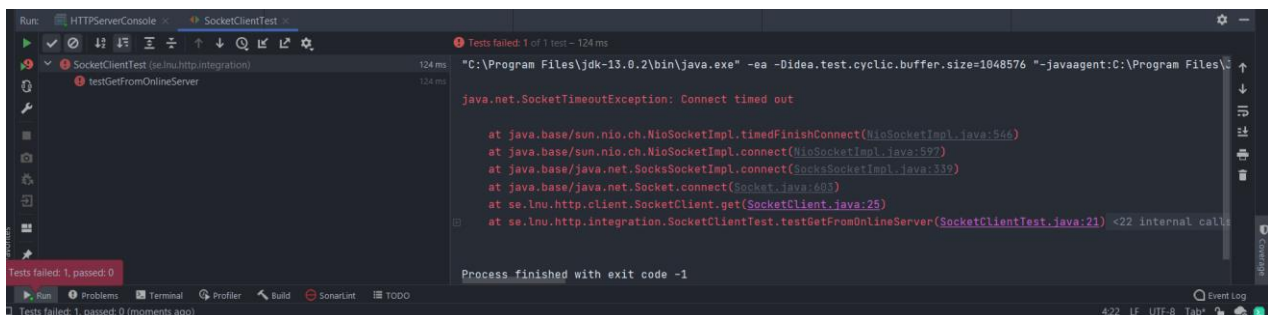
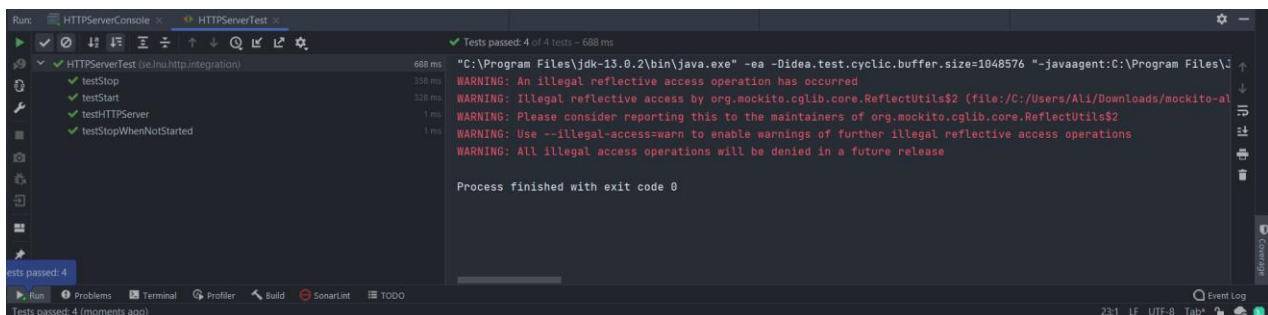
Expected results:

All tests are passed printed and, on the console, which says how many times the server has been successfully created, failed, or throws an exception.

Status: Fail

Actual Result:

As it is obvious on the next page, the test class known as “SocketClientTest” will fail due to the socketTime exception (Connect timed out). However, the other classes that are HTTPServerTest and StressTest will pass.



Coverage: HTTPServerTest ×			
Loading...			
Element	Class, %	Method, %	Line, %
se.Inu.http.integration	100% (6/6)	100% (19/19)	81% (114/140)

TCJU2 Test – Response

Requirement:

Req 2. The web server must follow minimum requirements for HTTP 1.1

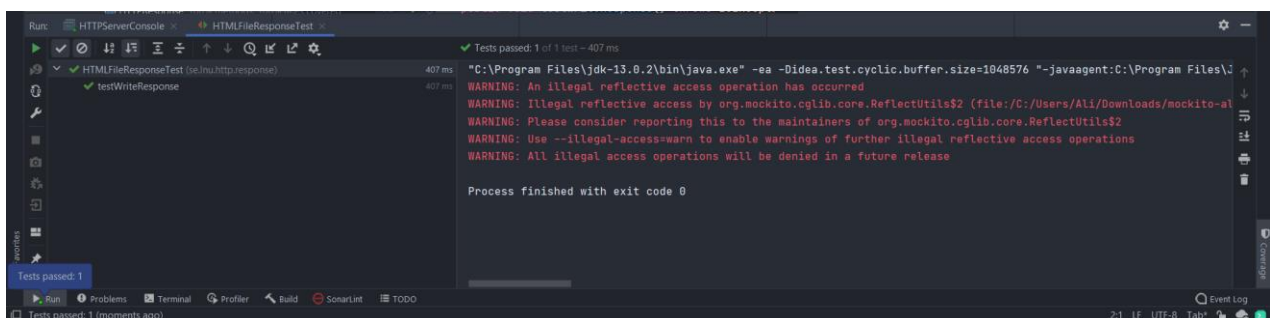
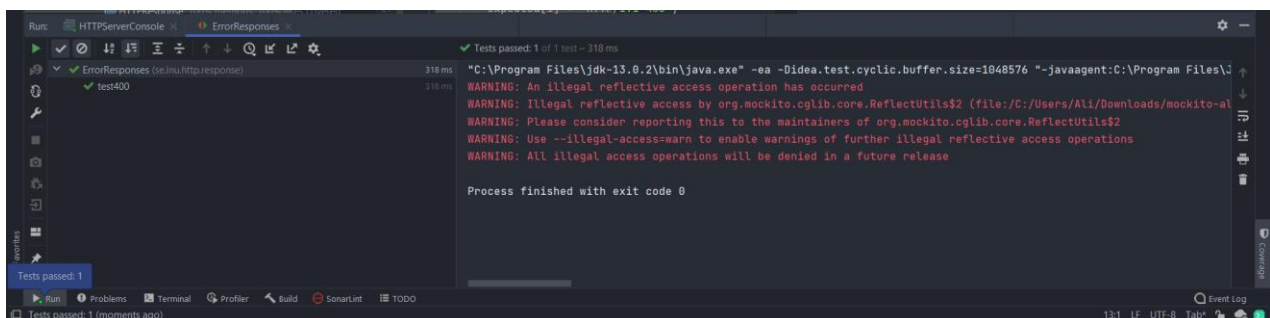
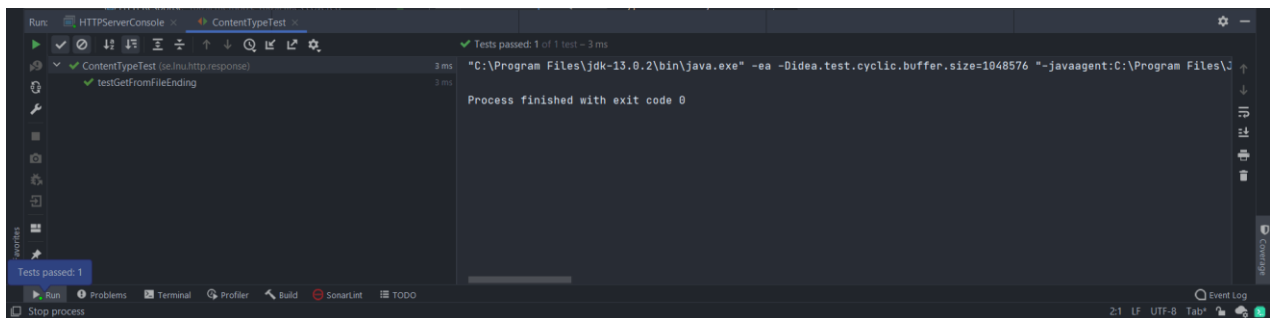
Expected results:

All tests should be passed. The response status should work as intended.

Status: Pass

Actual Result:

All three test classes in the Response package will pass. Therefore, the status will be set as pass.



Coverage: ContentTypeTest x

Loading...

Element	Class, %	Method, %	Line, %
se.lnu.http.response	100% (10/10)	100% (22/22)	100% (116/1...

Database Codota

TCJU3 – View

Expected results:

All tests should be passed. The console displays the expected values from the server.

Status: Pass

Actual Result:

Regarding the view test classes, all will pass except one of the methods which is called “testPortTaken”. That is the expected result should be “Port is taken” but the actual is not the same as expected.

Run HTTPServerConsole ConsoleViewTest

Tests failed: 1, passed: 9 of 10 tests – 39 ms

```

C:\Program Files\jdk-13.0.2\bin\java.exe -ea -javaagent:C:\Users\Ali\AppData\Local\JetBrains\IntelliJ\Idea2020.3\te
---- IntelliJ IDEA coverage runner ----
sampling ...
include patterns:
se.lnu.http.view\.*
exclude patterns:

org.junit.ComparisonFailure:
<Click to see difference>
<2 internal calls>
at se.lnu.http.view.ConsoleViewTest.testPortTaken(ConsoleViewTest.java:96) <24 internal calls>

```

Tests failed: 1, passed: 9

Run Problems Terminal Profiler Build SonarLint TODO

2:1 LF UTF-8 Tab

Coverage: ConsoleViewTest x

Loading...

Element	Class, %	Method, %	Line, %
se.lnu.http.view	100% (2/2)	69% (18/26)	80% (97/120)

Database Codota

TCJU4 – Complete Junit Tests

Expected results:

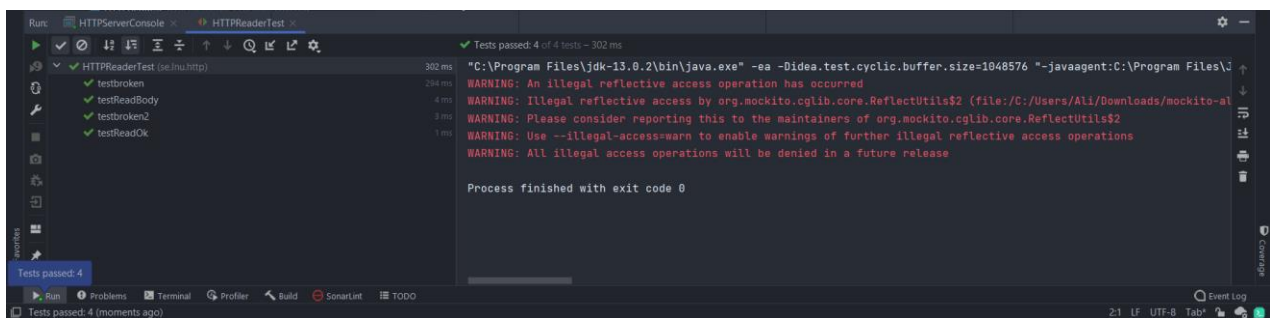
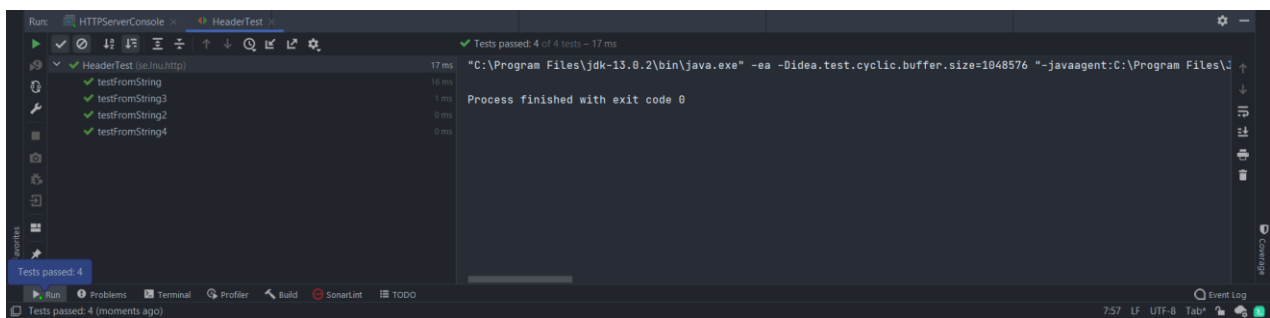
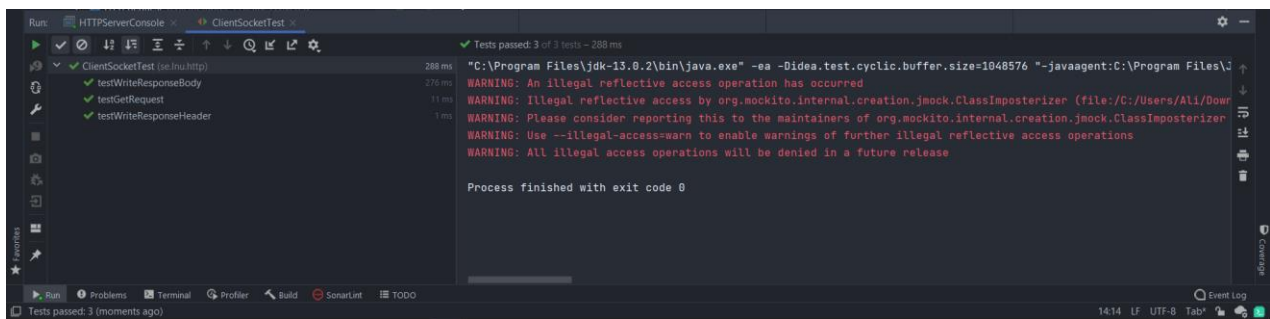
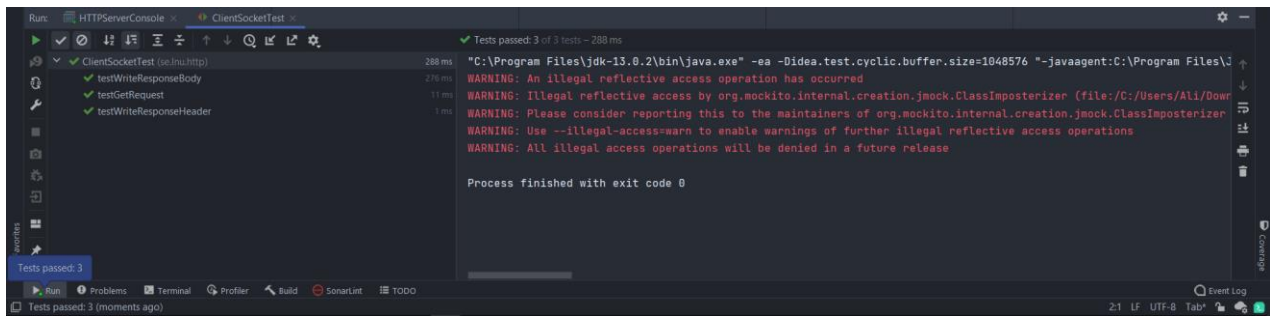
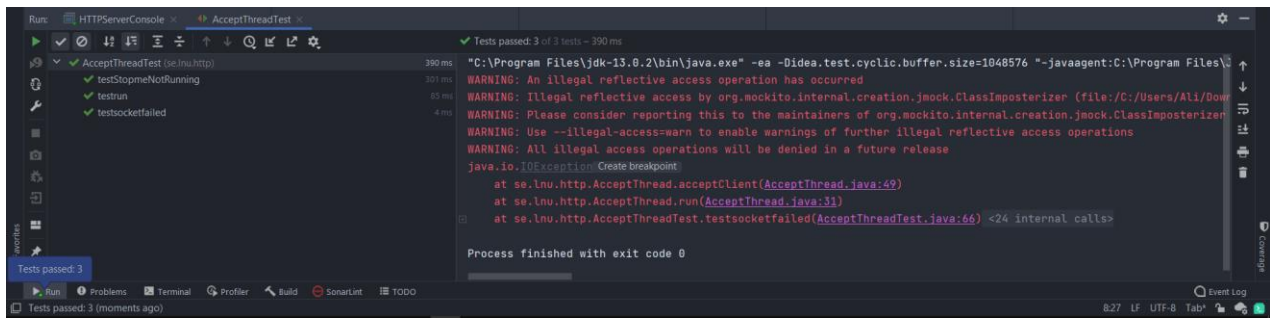
All tests should be passed.

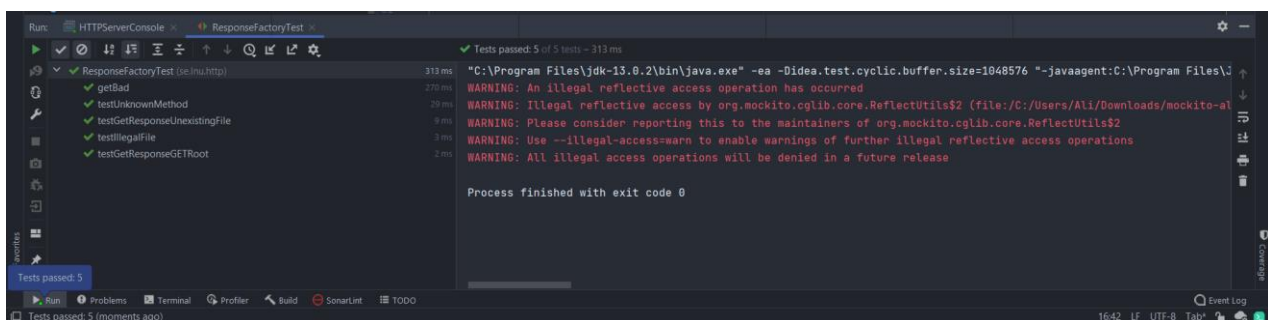
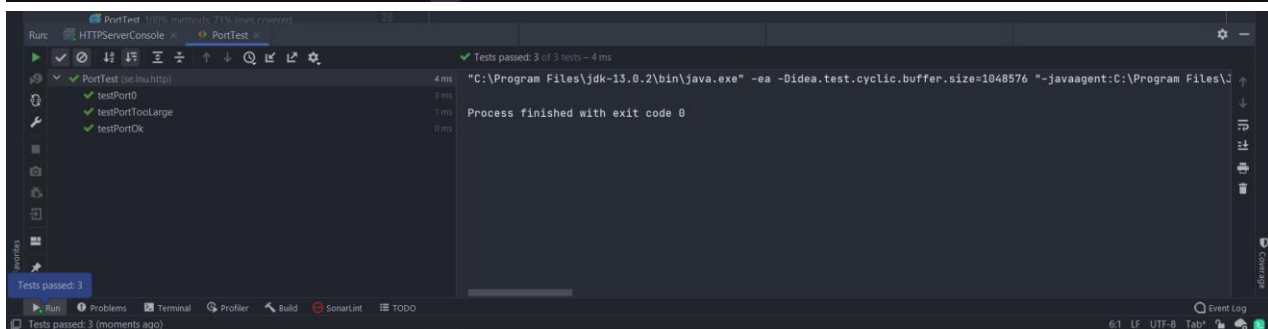
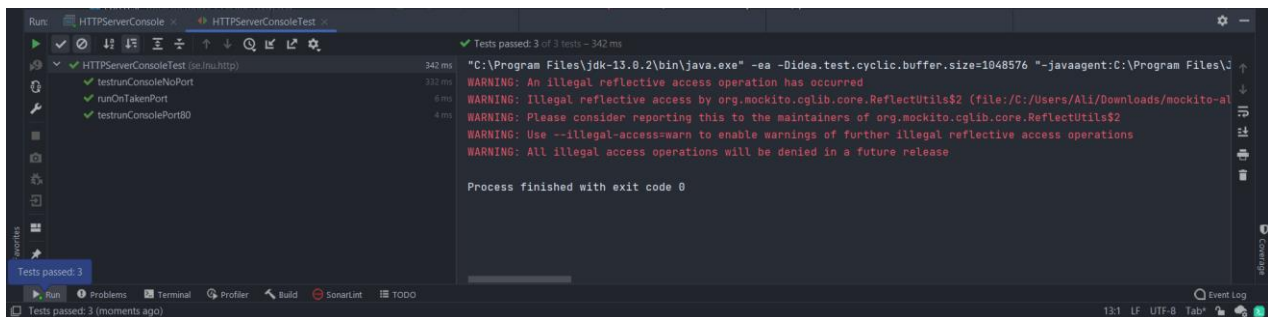
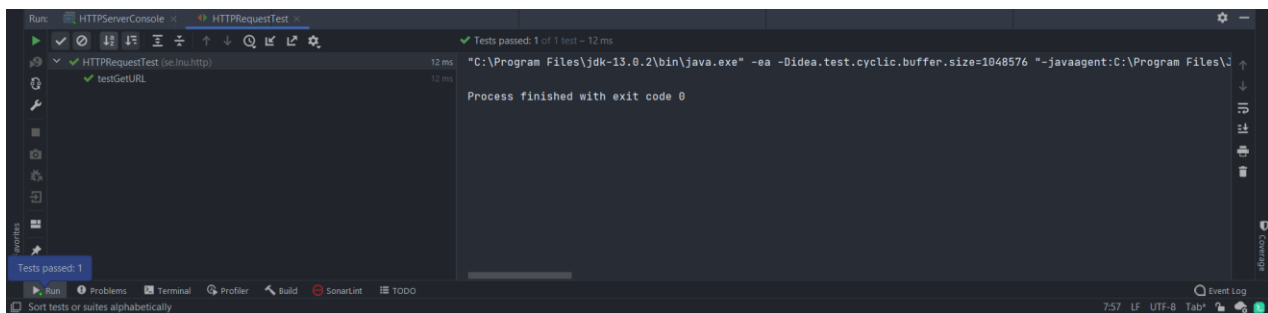
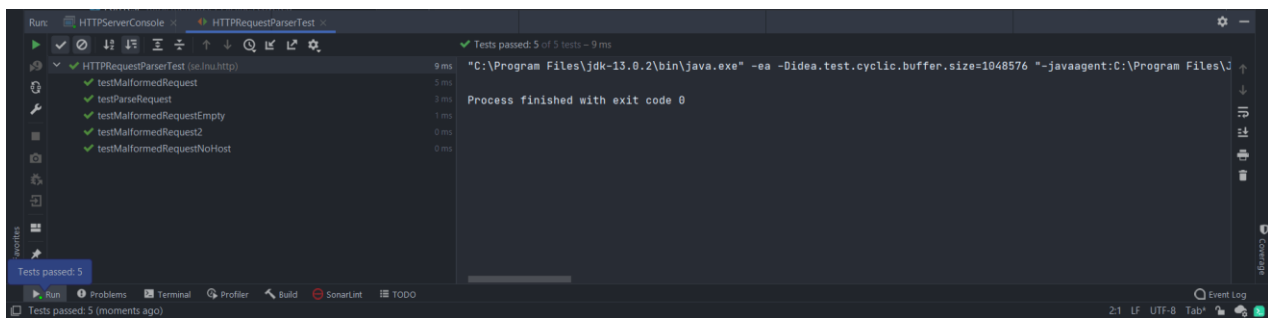
Status: Fail

Actual Result:

First and foremost, since all I have attached the screenshots for the above test classes, the rest of the screenshots which were not included previously will be added below to avoid duplication. Moving on, the complete Junit tests will not be passed due to the following bugs.

1. In the ConsoleViewTest the testPortTaken method in the View package will fail.
2. SocketClientTest in the integration package.





The screenshot shows an IDE window with the 'Run' tab selected. The test 'ServerFactoryTest (se.lnu.http)' has passed. The output console shows the following:

```

C:\Program Files\jdk-13.0.2\bin\java.exe" -ea -Didea.test.cyclic.buffer.size=1048576 "-javaagent:C:\Program Files\j
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.mockito.cglib.core.ReflectUtils$2 (file:/C:/Users/Alf/Downloads/mockito-al
WARNING: Please consider reporting this to the maintainers of org.mockito.cglib.core.ReflectUtils$2
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release

Process finished with exit code 0

```

Tests passed: 1 of 1 test - 267 ms

The screenshot shows an IDE window with the 'Run' tab selected. The test 'SharedFolderTest (se.lnu.http)' has passed. The output console shows the following:

```

C:\Program Files\jdk-13.0.2\bin\java.exe" -ea -Didea.test.cyclic.buffer.size=1048576 "-javaagent:C:\Program Files\j
Process finished with exit code 0

```

Tests passed: 3 of 3 tests - 16 ms

Coverage: AcceptThreadTest x

Loading...

Element	Class, %	Method, %	Line, %
se.lnu.http	66% (35/53)	55% (98/17...	50% (434/8...

Database Codota

TA - Acceptance Testing

Expected results:

All Automated and Manual tests should be passed.

Actual Result:

Most of the tests passed so it is considered passed generally.

Status: Pass