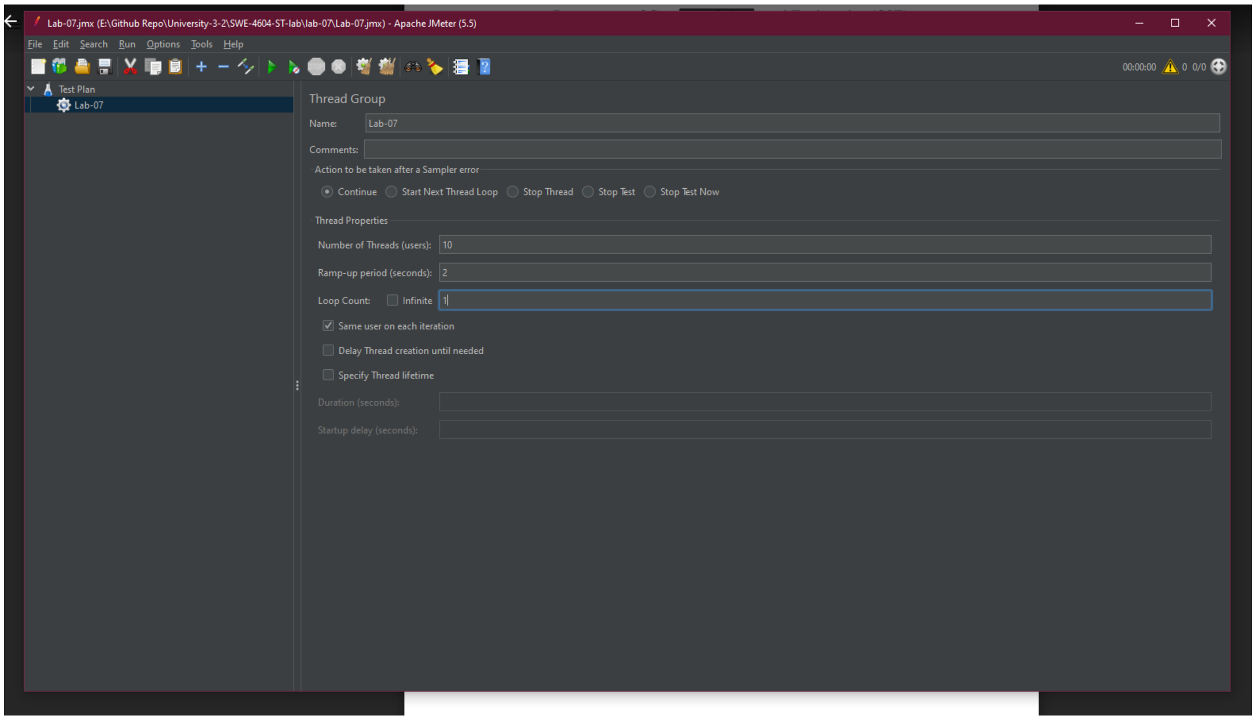
First we created a Thread Group with the 10 number of users and a ramp-up period of 2, keeping the loop count to 1.


Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)

Thread Group

Name: Lab-07

Comments:

Action to be taken after a Sampler error: [✓ Continue] Start Next Thread Loop / Stop Thread / Stop Test / Stop Test Now

Thread Properties

Number of Threads (users): 10

Ramp-up period (seconds): 2

Loop Count: Infinite [ ] 1

[✓] Same user on each iteration

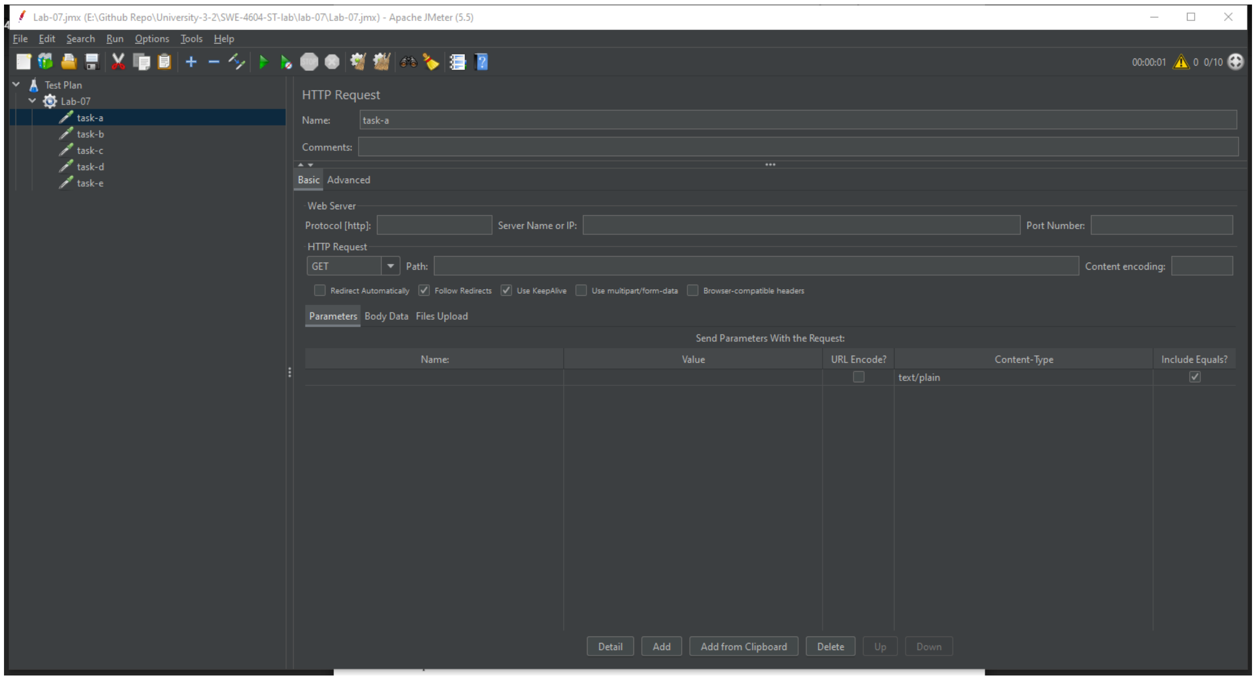
[ ] Delay Thread creation until needed

[ ] Specify Thread lifetime

Duration (seconds):

Startup delay (seconds):

After that I created 5 http request samplers to run the test.


Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)

Test Plan
- Lab-07
  - task-a
  - task-b
  - task-c
  - task-d
  - task-e

HTTP Request

Name: task-a

Comments:

Basic / Advanced

Web Server: Protocol [http]: Server Name or IP: Port Number:

HTTP Request: GET Path: Content encoding:

[ ] Redirect Automatically [✓] Follow Redirects [✓] Use KeepAlive [ ] Use multipart/form-data [ ] Browser-compatible headers

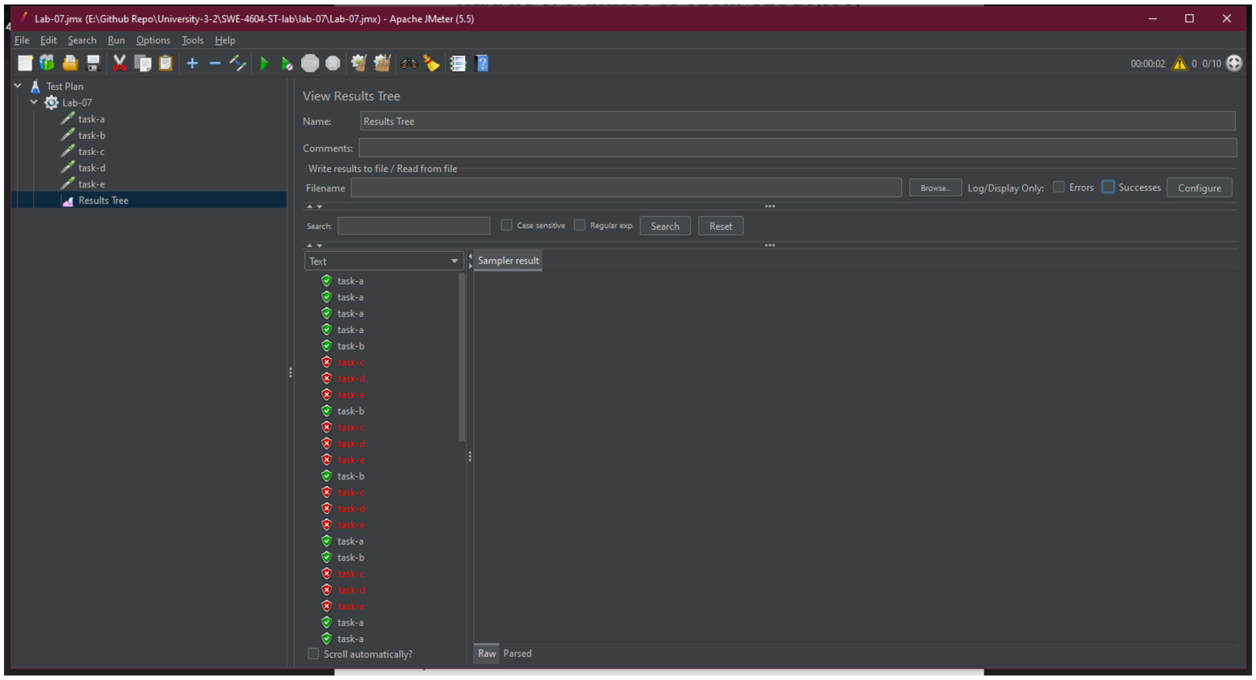
Parameters / Body Data / Files Upload

Send Parameters With the Request:

| Name: | Value | URL Encode? | Content-Type | Include Equals? |
|---|---|---|---|---|
| | | ☐ | text/plain | ✓ |

Detail / Add / Add from Clipboard / Delete / Up / Down

Then I ran task a and task b as it was a simple get request.


Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)

```
Test Plan
  Lab-07
    task-a
    task-b
    task-c
    task-d
    task-e
    Results Tree
```

View Results Tree

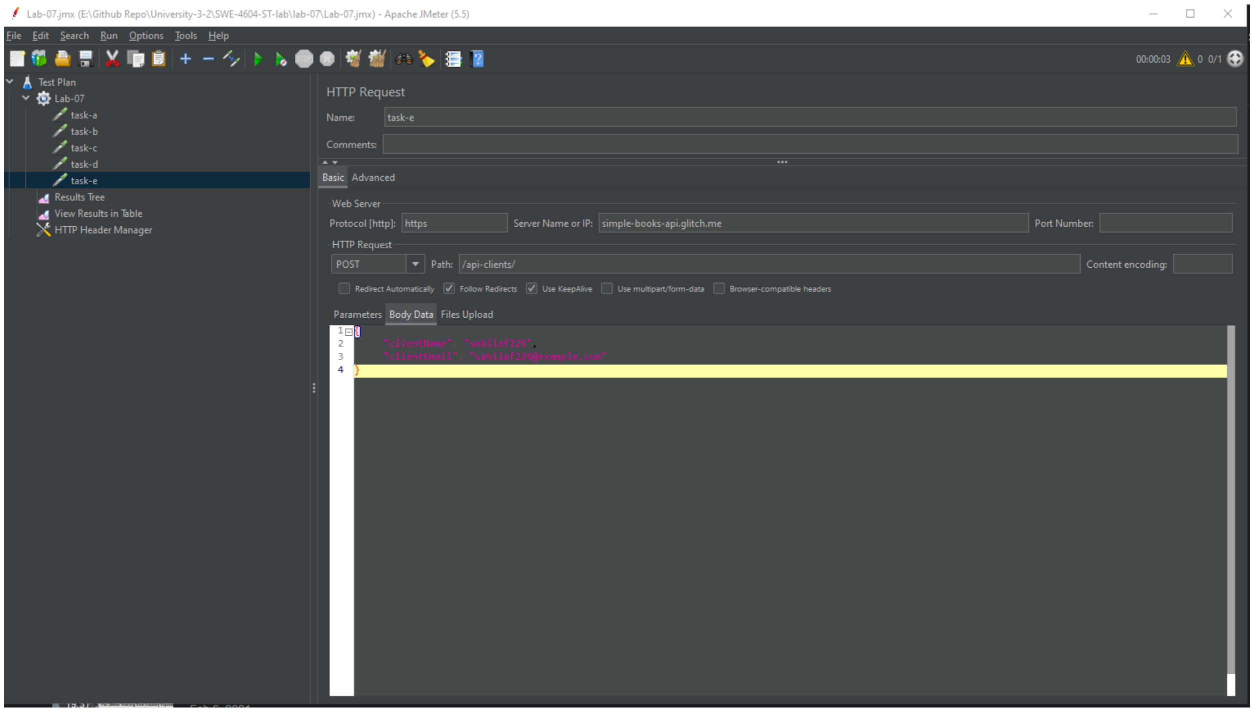
Name: Results Tree

```
✓ task-a
✓ task-a
✓ task-a
✓ task-a
✓ task-b
✗ task-c
✗ task-d
✗ task-e
✓ task-b
✗ task-c
✗ task-d
✗ task-e
✓ task-b
✗ task-c
✗ task-d
✗ task-e
✓ task-a
✓ task-b
✗ task-c
✗ task-d
✗ task-e
✓ task-a
✓ task-a
```

So the test results were OK for task a and b but failed for the rest.

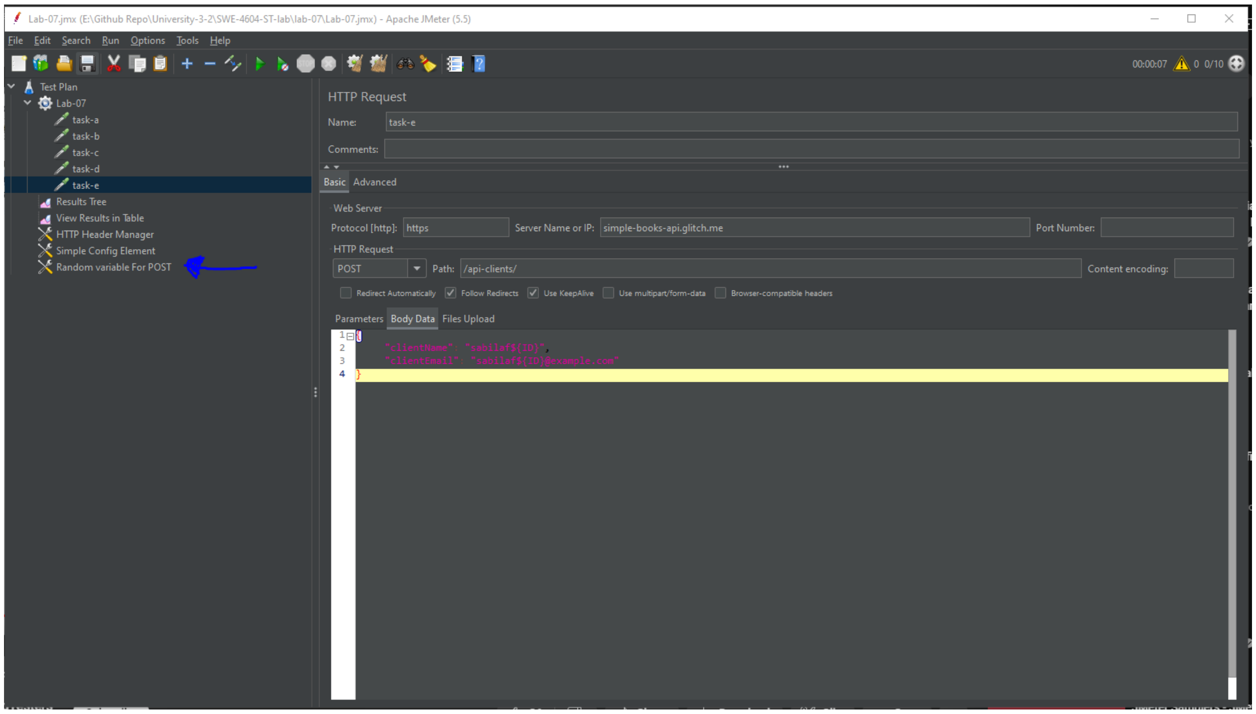
Then I did the POST request testing by adding a random variable config element. I added that random variable to my client name and email to make every POST request body section unique. I also had to set the HTTP header manager.

Basically I ran the POST request once and for each thread but used different information in the body.


Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)
File Edit Search Run Options Tools Help
00:00:03 0 0/1
Test Plan
Lab-07
task-a
task-b
task-c
task-d
task-e
Results Tree
View Results in Table
HTTP Header Manager
HTTP Request
Basic Advanced
Web Server
HTTP Request
Parameters Body Data Files Upload

Name: task-e
Comments:
Protocol [http]: https
Server Name or IP: simple-books-api.glitch.me
Port Number:
POST
Path: /api-clients/
Content encoding:
Redirect Automatically [ ] Follow Redirects [✓] Use KeepAlive [✓] Use multipart/form-data [ ] Browser-compatible headers [ ]

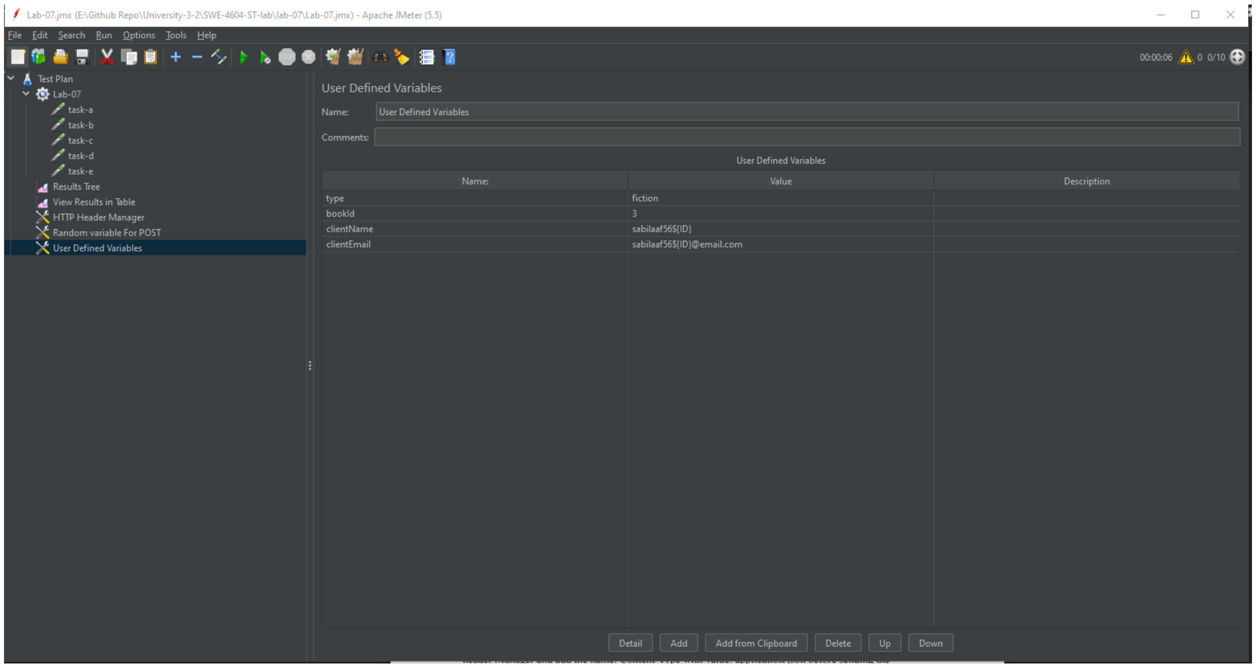
```
{
    "clientName": "sabilaf226",
    "clientEmail": "sabilaf226@example.com"
}
```



Name: task-e
Comments:
Protocol [http]: https
Server Name or IP: simple-books-api.glitch.me
Port Number:
POST
Path: /api-clients/
Content encoding:
Redirect Automatically [ ] Follow Redirects [✓] Use KeepAlive [✓] Use multipart/form-data [ ] Browser-compatible headers [ ]

```
{
    "clientName": "sabilaf${ID}",
    "clientEmail": "sabilaf${ID}@example.com"
}
```

Then I used the Config Element for storing the values of “type”, “bookId”, “clientName” and “clientEmail”


Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)
File Edit Search Run Options Tools Help
00:00:06 0 0/10
Test Plan
Lab-07
task-a
task-b
task-c
task-d
task-e
Results Tree
View Results in Table
HTTP Header Manager
Random variable For POST
User Defined Variables
Detail Add Add from Clipboard Delete Up Down

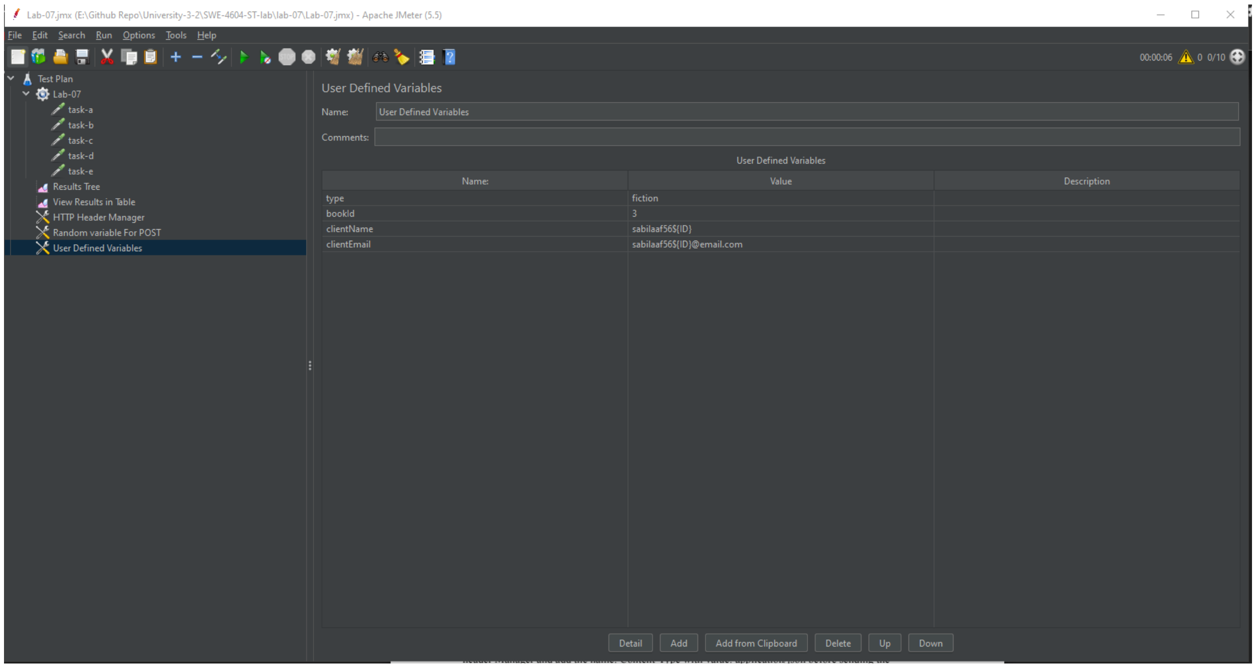
User Defined Variables

Name: User Defined Variables

Comments:

User Defined Variables

| Name: | Value | Description |
|---|---|---|
| type | fiction | |
| bookId | 3 | |
| clientName | sabilaaf56${ID} | |
| clientEmail | sabilaaf56${ID}@email.com | |

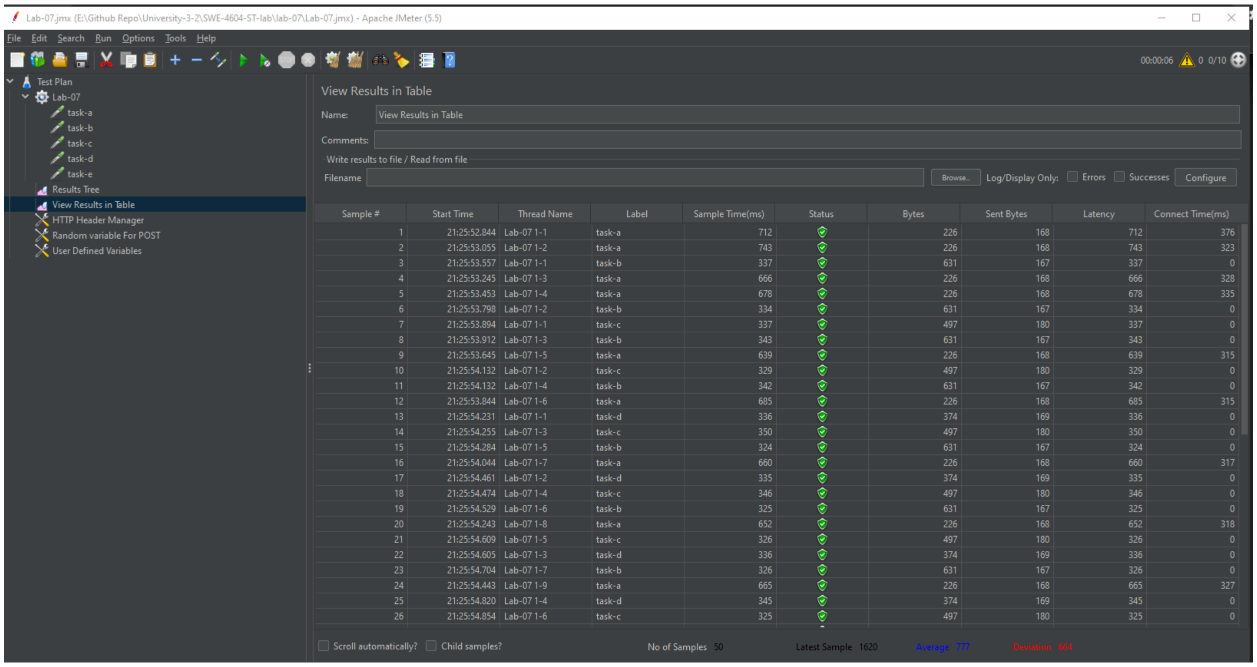

User Defined Variables

Name: User Defined Variables

Comments:

User Defined Variables

| Name: | Value | Description |
|---|---|---|
| type | fiction | |
| bookId | 3 | |
| clientName | sabilaaf56${ID} | |
| clientEmail | sabilaaf56${ID}@email.com | |


Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)

Test Plan
- Lab-07
  - task-a
  - task-b
  - task-c
  - task-d
  - task-e
  - Results Tree
  - View Results in Table
  - HTTP Header Manager
  - Random variable For POST
  - User Defined Variables

View Results in Table

Name: View Results in Table

Comments:

Write results to file / Read from file

Filename

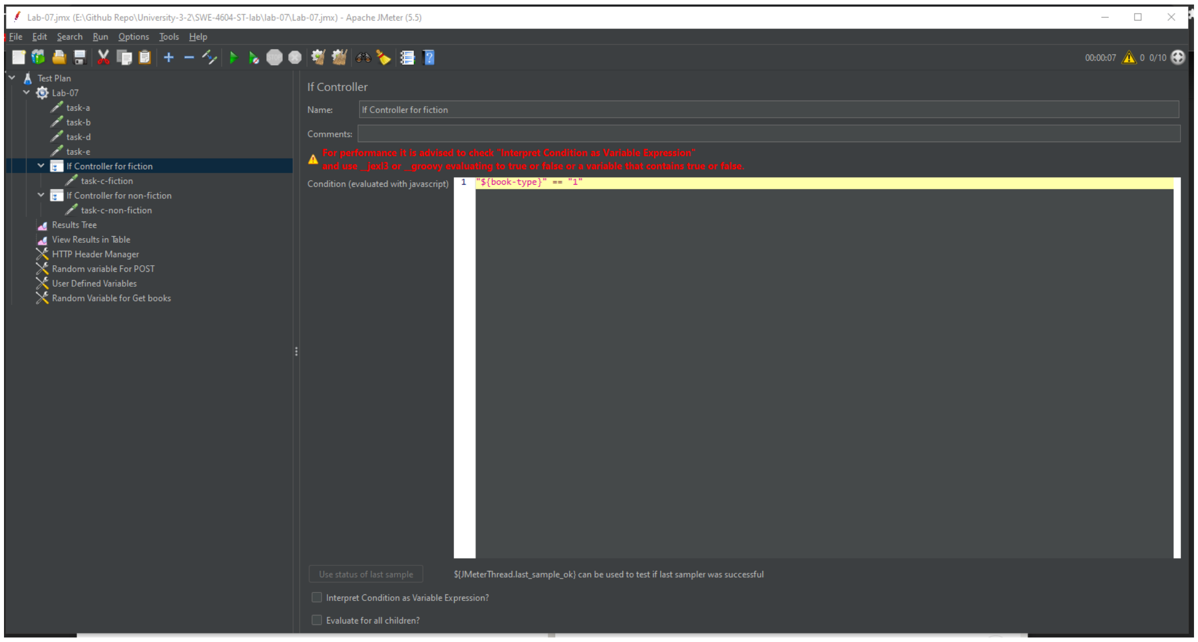
Log/Display Only: ☐ Errors ☐ Successes

| Sample # | Start Time | Thread Name | Label | Sample Time(ms) | Status | Bytes | Sent Bytes | Latency | Connect Time(ms) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 21:25:52.844 | Lab-07 1-1 | task-a | 712 | ✓ | 226 | 168 | 712 | 376 |
| 2 | 21:25:53.055 | Lab-07 1-2 | task-a | 743 | ✓ | 226 | 168 | 743 | 323 |
| 3 | 21:25:53.557 | Lab-07 1-1 | task-b | 337 | ✓ | 631 | 167 | 337 | 0 |
| 4 | 21:25:53.245 | Lab-07 1-3 | task-a | 666 | ✓ | 226 | 168 | 666 | 328 |
| 5 | 21:25:53.453 | Lab-07 1-4 | task-a | 678 | ✓ | 226 | 168 | 678 | 335 |
| 6 | 21:25:53.798 | Lab-07 1-2 | task-b | 334 | ✓ | 631 | 167 | 334 | 0 |
| 7 | 21:25:53.894 | Lab-07 1-1 | task-c | 337 | ✓ | 497 | 180 | 337 | 0 |
| 8 | 21:25:53.912 | Lab-07 1-3 | task-b | 343 | ✓ | 631 | 167 | 343 | 0 |
| 9 | 21:25:53.645 | Lab-07 1-5 | task-a | 639 | ✓ | 226 | 168 | 639 | 315 |
| 10 | 21:25:54.132 | Lab-07 1-2 | task-c | 329 | ✓ | 497 | 180 | 329 | 0 |
| 11 | 21:25:54.132 | Lab-07 1-4 | task-b | 342 | ✓ | 631 | 167 | 342 | 0 |
| 12 | 21:25:53.844 | Lab-07 1-6 | task-a | 685 | ✓ | 226 | 168 | 685 | 315 |
| 13 | 21:25:54.231 | Lab-07 1-1 | task-d | 336 | ✓ | 374 | 169 | 336 | 0 |
| 14 | 21:25:54.255 | Lab-07 1-3 | task-c | 350 | ✓ | 497 | 180 | 350 | 0 |
| 15 | 21:25:54.284 | Lab-07 1-5 | task-b | 324 | ✓ | 631 | 167 | 324 | 0 |
| 16 | 21:25:54.044 | Lab-07 1-7 | task-a | 660 | ✓ | 226 | 168 | 660 | 317 |
| 17 | 21:25:54.461 | Lab-07 1-2 | task-d | 335 | ✓ | 374 | 169 | 335 | 0 |
| 18 | 21:25:54.474 | Lab-07 1-4 | task-c | 346 | ✓ | 497 | 180 | 346 | 0 |
| 19 | 21:25:54.529 | Lab-07 1-6 | task-b | 325 | ✓ | 631 | 167 | 325 | 0 |
| 20 | 21:25:54.243 | Lab-07 1-8 | task-a | 652 | ✓ | 226 | 168 | 652 | 318 |
| 21 | 21:25:54.609 | Lab-07 1-5 | task-c | 326 | ✓ | 497 | 180 | 326 | 0 |
| 22 | 21:25:54.605 | Lab-07 1-3 | task-d | 336 | ✓ | 374 | 169 | 336 | 0 |
| 23 | 21:25:54.704 | Lab-07 1-7 | task-b | 326 | ✓ | 631 | 167 | 326 | 0 |
| 24 | 21:25:54.443 | Lab-07 1-9 | task-a | 665 | ✓ | 226 | 168 | 665 | 327 |
| 25 | 21:25:54.820 | Lab-07 1-4 | task-d | 345 | ✓ | 374 | 169 | 345 | 0 |
| 26 | 21:25:54.854 | Lab-07 1-6 | task-c | 325 | ✓ | 497 | 180 | 325 | 0 |

☐ Scroll automatically? ☐ Child samples? No of Samples 50 Latest Sample 1620 Average 777 Deviation 664

All test cases passed after the config element.

Now I had to choose randomly from the two types of requests for getting specific types of books. I used IF CONTROLLER here. My logic was to select randomly from a variable that has a value of 1 or 2. If the value is 1 I went for fiction and non-fiction otherwise.


Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)

Test Plan
- Lab-07
  - task-a
  - task-b
  - task-d
  - task-e
  - If Controller for fiction
    - task-c-fiction
  - If Controller for non-fiction
    - task-c-non-fiction
  - Results Tree
  - View Results in Table
  - HTTP Header Manager
  - Random variable For POST
  - User Defined Variables
  - Random Variable for Get books

If Controller

Name: If Controller for fiction

Comments:

For performance it is advised to check "Interpret Condition as Variable Expression"
and use __jexl3 or __groovy evaluating to true or false or a variable that contains true or false.

Condition (evaluated with javascript)

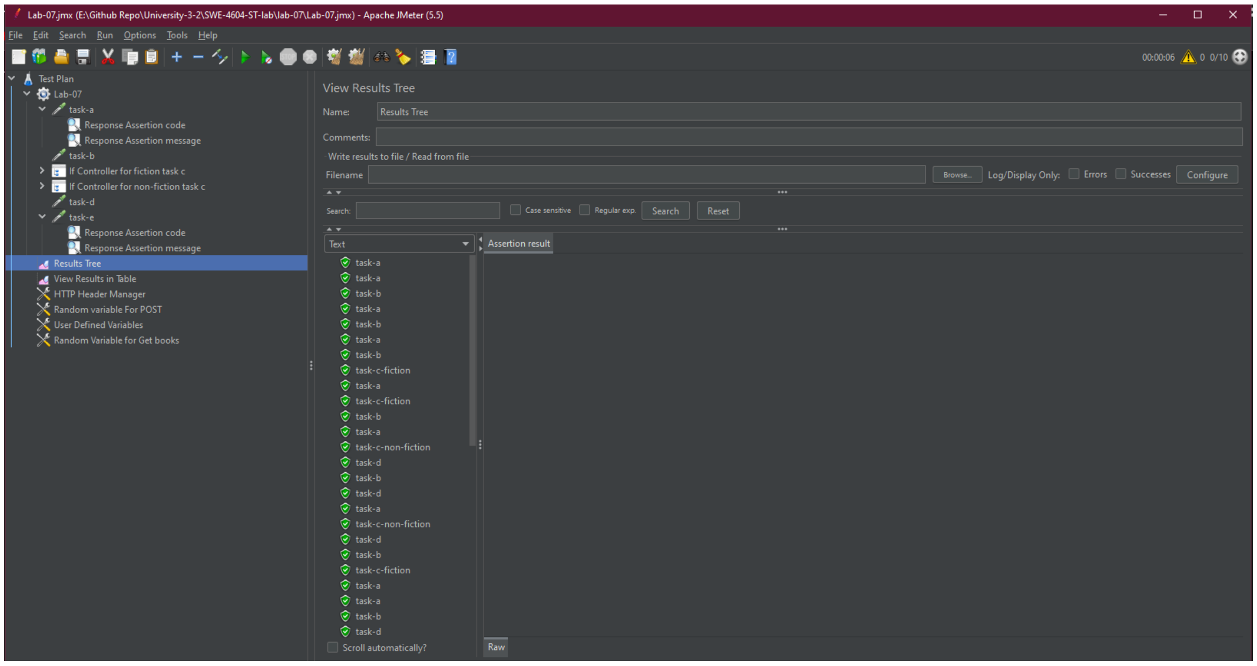
```
"${book-type}" == "1"
```

${JMeterThread.last_sample_ok} can be used to test if last sampler was successful

☐ Interpret Condition as Variable Expression?

☐ Evaluate for all children?

Now finally wrote the assertion part to compare the response code and message after a request was sent.



Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)

- Test Plan
  - Lab-07
    - task-a
      - Response Assertion code
      - Response Assertion message
    - task-b
    - If Controller for fiction task c
    - If Controller for non-fiction task c
    - task-d
    - task-e
      - Response Assertion code
      - Response Assertion message
    - Results Tree
    - View Results in Table
    - HTTP Header Manager
    - Random variable For POST
    - User Defined Variables
    - Random Variable for Get books

View Results Tree

Name: Results Tree

Comments:

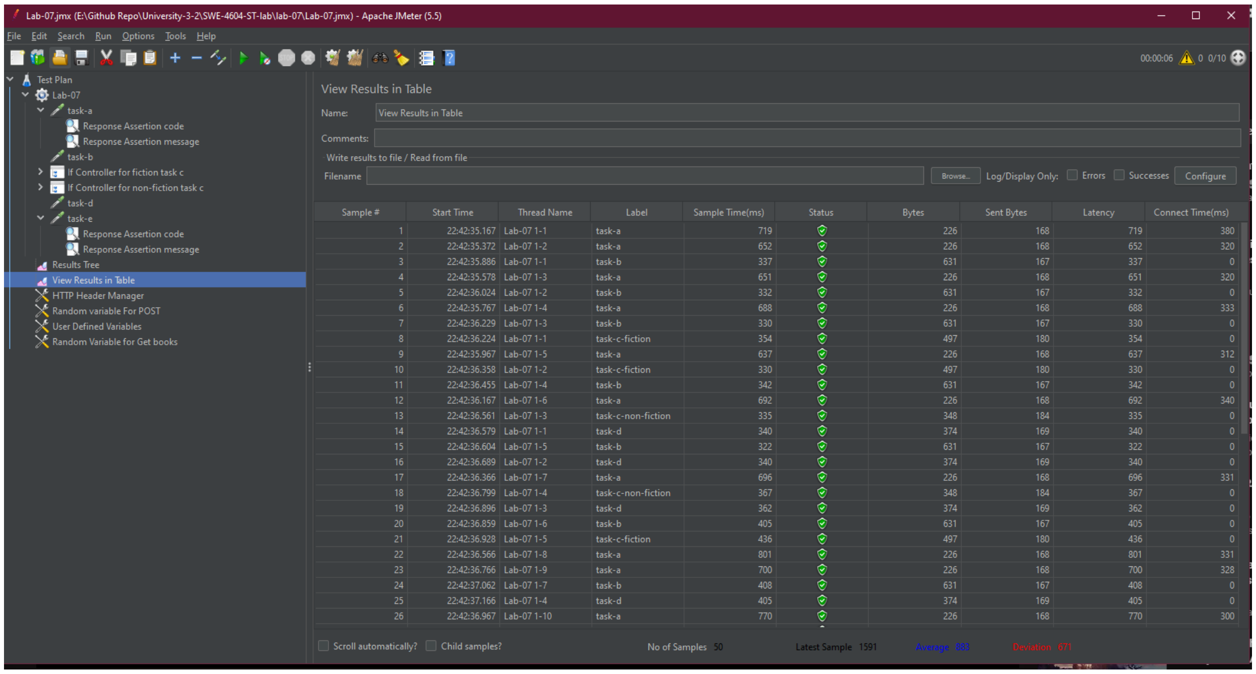
Write results to file / Read from file

Filename

```
task-a
task-a
task-b
task-a
task-b
task-a
task-b
task-c-fiction
task-a
task-c-fiction
task-b
task-a
task-c-non-fiction
task-d
task-b
task-d
task-a
task-c-non-fiction
task-d
task-b
task-c-fiction
task-a
task-a
task-b
task-d
```

Scroll automatically?

FINALLY FROM THE RESULT TABLE WE CAN SEE EVERY TEST PASSED.



Lab-07.jmx (E:\Github Repo\University-3-2\SWE-4604-ST-lab\lab-07\Lab-07.jmx) - Apache JMeter (5.5)

View Results in Table

Name: View Results in Table

Comments:

Write results to file / Read from file

Filename

| Sample # | Start Time | Thread Name | Label | Sample Time(ms) | Status | Bytes | Sent Bytes | Latency | Connect Time(ms) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 22:42:35.167 | Lab-07 1-1 | task-a | 719 | ✓ | 226 | 168 | 719 | 380 |
| 2 | 22:42:35.372 | Lab-07 1-2 | task-a | 652 | ✓ | 226 | 168 | 652 | 320 |
| 3 | 22:42:35.886 | Lab-07 1-1 | task-b | 337 | ✓ | 631 | 167 | 337 | 0 |
| 4 | 22:42:35.578 | Lab-07 1-3 | task-a | 651 | ✓ | 226 | 168 | 651 | 320 |
| 5 | 22:42:36.024 | Lab-07 1-2 | task-b | 332 | ✓ | 631 | 167 | 332 | 0 |
| 6 | 22:42:35.767 | Lab-07 1-4 | task-a | 688 | ✓ | 226 | 168 | 688 | 333 |
| 7 | 22:42:36.229 | Lab-07 1-3 | task-b | 330 | ✓ | 631 | 167 | 330 | 0 |
| 8 | 22:42:36.224 | Lab-07 1-1 | task-c-fiction | 354 | ✓ | 497 | 180 | 354 | 0 |
| 9 | 22:42:35.967 | Lab-07 1-5 | task-a | 637 | ✓ | 226 | 168 | 637 | 312 |
| 10 | 22:42:36.358 | Lab-07 1-2 | task-c-fiction | 330 | ✓ | 497 | 180 | 330 | 0 |
| 11 | 22:42:36.455 | Lab-07 1-4 | task-b | 342 | ✓ | 631 | 167 | 342 | 0 |
| 12 | 22:42:36.167 | Lab-07 1-6 | task-a | 692 | ✓ | 226 | 168 | 692 | 340 |
| 13 | 22:42:36.561 | Lab-07 1-3 | task-c-non-fiction | 335 | ✓ | 348 | 184 | 335 | 0 |
| 14 | 22:42:36.579 | Lab-07 1-1 | task-d | 340 | ✓ | 374 | 169 | 340 | 0 |
| 15 | 22:42:36.604 | Lab-07 1-5 | task-b | 322 | ✓ | 631 | 167 | 322 | 0 |
| 16 | 22:42:36.689 | Lab-07 1-2 | task-d | 340 | ✓ | 374 | 169 | 340 | 0 |
| 17 | 22:42:36.366 | Lab-07 1-7 | task-a | 696 | ✓ | 226 | 168 | 696 | 331 |
| 18 | 22:42:36.799 | Lab-07 1-4 | task-c-non-fiction | 367 | ✓ | 348 | 184 | 367 | 0 |
| 19 | 22:42:36.896 | Lab-07 1-3 | task-d | 362 | ✓ | 374 | 169 | 362 | 0 |
| 20 | 22:42:36.859 | Lab-07 1-6 | task-b | 405 | ✓ | 631 | 167 | 405 | 0 |
| 21 | 22:42:36.928 | Lab-07 1-5 | task-c-fiction | 436 | ✓ | 497 | 180 | 436 | 0 |
| 22 | 22:42:36.566 | Lab-07 1-8 | task-a | 801 | ✓ | 226 | 168 | 801 | 331 |
| 23 | 22:42:36.766 | Lab-07 1-9 | task-a | 700 | ✓ | 226 | 168 | 700 | 328 |
| 24 | 22:42:37.062 | Lab-07 1-7 | task-b | 408 | ✓ | 631 | 167 | 408 | 0 |
| 25 | 22:42:37.166 | Lab-07 1-4 | task-d | 405 | ✓ | 374 | 169 | 405 | 0 |
| 26 | 22:42:36.967 | Lab-07 1-10 | task-a | 770 | ✓ | 226 | 168 | 770 | 300 |

Scroll automatically? Child samples? No of Samples 50 Latest Sample 1591 Average 883 Deviation 671