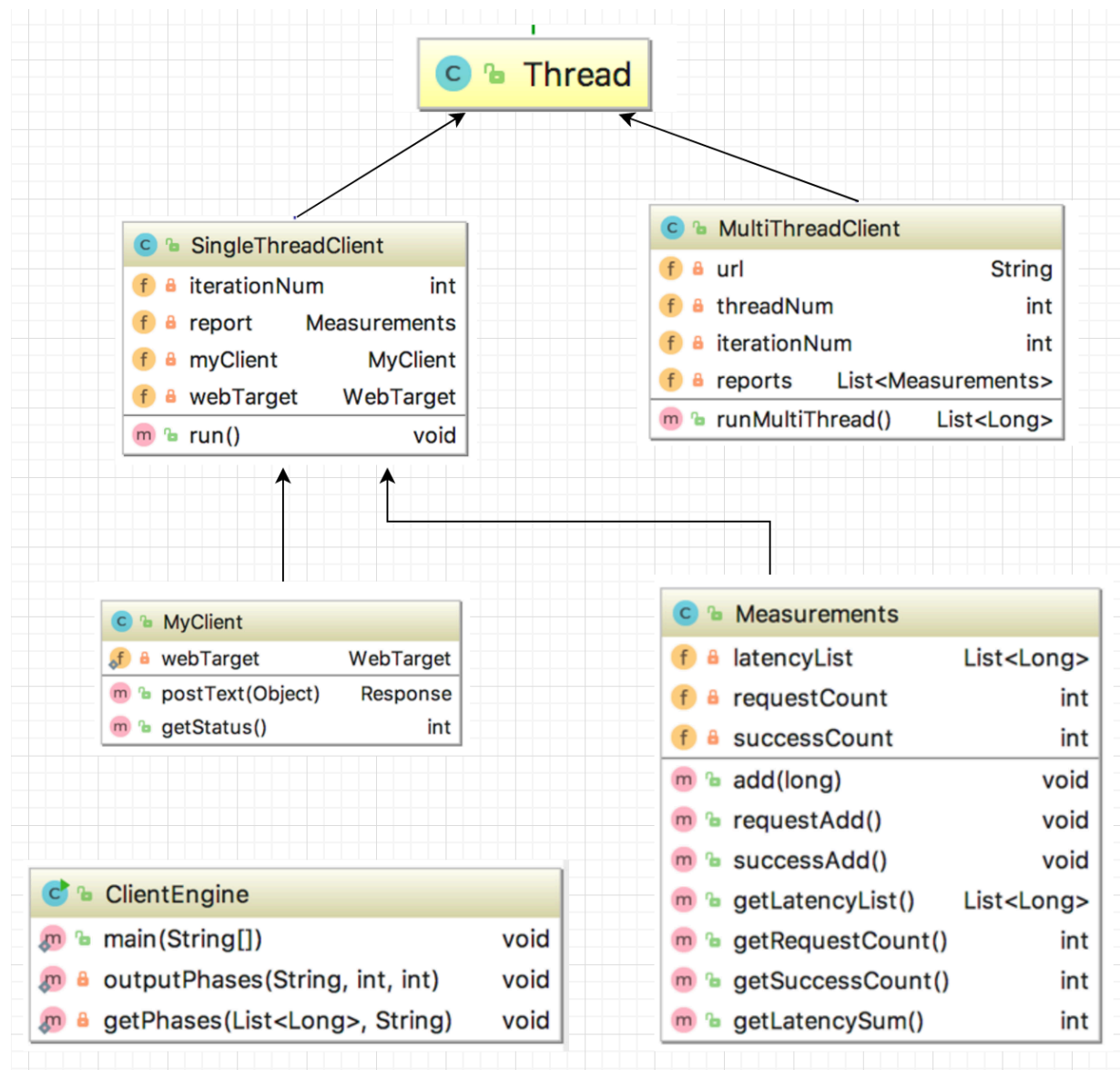# Assignment1-Report

Xiaoyu Zhang

1. Overview of Design

First, create a simple client (MyClient) as step1&2 requires. Then create a SingleThreadClient which has four fields : a simple client (MyClient), a iterationNum, a Measurements report and a webTarget. I use a Measurements class to calculate the measurements of a single thread. When I have a SingleThreadClient, I build a MultiThreadClient with four fields: a url, a threadNum, a iterationNum and a list of reports. Then I use a ClientEngine to run the tests.
The UML is as following:

2. GitHub Repo URL: https://github.com/Sakamono/Distributed-System

3. Two screenshot for step4:

```
/Library/Java/JavaVirtualMachines/jdk1.8.0_152.jdk/Contents/Home/bin/java ...
ip address is: 52.15.211.97
port is: 8080
thread number is: 20
iteration number is: 100
Client starts at: Time 2018/10/07 15:52:11
Warmup phase: All threads running...
Warmup phase: Start at: Time: 2018/10/07 15:52:11
Warmup phase: Complete at: Time: 2018/10/07 15:52:43
Warmup phase: Wall time: 32s
Loading phase: All threads running...
Loading phase: Start at: Time: 2018/10/07 15:52:43
Loading phase: Complete at: Time: 2018/10/07 15:53:14
Loading phase: Wall time: 30s
Peak phase: All threads running...
Peak phase: Start at: Time: 2018/10/07 15:53:14
Peak phase: Complete at: Time: 2018/10/07 15:53:45
Peak phase: Wall time: 30s
Cooldown phase: All threads running...
Cooldown phase: Start at: Time: 2018/10/07 15:53:45
Cooldown phase: Complete at: Time: 2018/10/07 15:54:16
Cooldown phase: Wall time: 31s
Client ends at: 2018/10/07 15:54:16
=========================================================
Total number of request sent: 7400
Total number of successful responses: 7400
Test Wall time: 125s
Finished.

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/jdk1.8.0_152.jdk/Contents/Home/bin/java ...
ip address is: 52.15.211.97
port is: 8080
thread number is: 100
iteration number is: 100
Client starts at: Time 2018/10/07 15:55:18
Warmup phase: All threads running...
Warmup phase: Start at: Time: 2018/10/07 15:55:18
Warmup phase: Complete at: Time: 2018/10/07 15:55:50
Warmup phase: Wall time: 31s
Loading phase: All threads running...
Loading phase: Start at: Time: 2018/10/07 15:55:50
Loading phase: Complete at: Time: 2018/10/07 15:56:22
Loading phase: Wall time: 31s
Peak phase: All threads running...
Peak phase: Start at: Time: 2018/10/07 15:56:22
Peak phase: Complete at: Time: 2018/10/07 15:56:55
Peak phase: Wall time: 33s
Cooldown phase: All threads running...
Cooldown phase: Start at: Time: 2018/10/07 15:56:55
Cooldown phase: Complete at: Time: 2018/10/07 15:57:28
Cooldown phase: Wall time: 32s
Client ends at: 2018/10/07 15:57:28
========================================================
Total number of request sent: 37000
Total number of successful responses: 37000
Test Wall time: 129s
Finished.

Process finished with exit code 0
```

4. Two screenshots for step 5

```
/Library/Java/JavaVirtualMachines/jdk1.8.0_152.jdk/Contents/Home/bin/java ...
ip address is: 52.15.211.97
port is: 8080
thread number is: 20
iteration number is: 100
Client starts at: Time 2018/10/07 16:07:08
Warmup phase: All threads running...
Warmup phase: Start at: Time: 2018/10/07 16:07:08
Warmup phase: Complete at: Time: 2018/10/07 16:07:41
Warmup phase: Wall time: 32s
Loading phase: All threads running...
Loading phase: Start at: Time: 2018/10/07 16:07:41
Loading phase: Complete at: Time: 2018/10/07 16:08:12
Loading phase: Wall time: 30s
Peak phase: All threads running...
Peak phase: Start at: Time: 2018/10/07 16:08:12
Peak phase: Complete at: Time: 2018/10/07 16:08:42
Peak phase: Wall time: 30s
Cooldown phase: All threads running...
Cooldown phase: Start at: Time: 2018/10/07 16:08:42
Cooldown phase: Complete at: Time: 2018/10/07 16:09:16
Cooldown phase: Wall time: 33s
Client ends at: 2018/10/07 16:09:16
========================================================
Total number of request sent: 7400
Total number of successful responses: 7400
Test Wall time: 127s
Overall throughput for all phases (total number of requests/total wall time) : 58 times/s
Mean latencies for all requests is: 153.0 ms
Median latencies for all request is: 183.0 ms
95th percentile latency is: 222 ms
99th percentile latency is: 368 ms
Finished.

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/jdk1.8.0_152.jdk/Contents/Home/bin/java ...
ip address is: 52.15.211.97
port is: 8080
thread number is: 100
iteration number is: 100
Client starts at: Time 2018/10/07 16:11:12
Warmup phase: All threads running...
Warmup phase: Start at: Time: 2018/10/07 16:11:12
Warmup phase: Complete at: Time: 2018/10/07 16:11:44
Warmup phase: Wall time: 31s
Loading phase: All threads running...
Loading phase: Start at: Time: 2018/10/07 16:11:44
Loading phase: Complete at: Time: 2018/10/07 16:12:15
Loading phase: Wall time: 30s
Peak phase: All threads running...
Peak phase: Start at: Time: 2018/10/07 16:12:15
Peak phase: Complete at: Time: 2018/10/07 16:12:48
Peak phase: Wall time: 33s
Cooldown phase: All threads running...
Cooldown phase: Start at: Time: 2018/10/07 16:12:48
Cooldown phase: Complete at: Time: 2018/10/07 16:13:20
Cooldown phase: Wall time: 31s
Client ends at: 2018/10/07 16:13:20
=======================================================
Total number of request sent: 37000
Total number of successful responses: 37000
Test Wall time: 127s
Overall throughput for all phases (total number of requests/total wall time) : 291 times/s
Mean latencies for all requests is: 156.0 ms
Median latencies for all request is: 184.0 ms
95th percentile latency is: 240 ms
99th percentile latency is: 356 ms
Finished.

Process finished with exit code 0
```

5. Two screenshots for step 6

```
/Library/Java/JavaVirtualMachines/jdk1.8.0_152.jdk/Contents/Home/bin/java ...
URL is: https://kgorgk01w0.execute-api.us-east-2.amazonaws.com
thread number is: 20
iteration number is: 100
Client starts at: Time 2018/10/07 17:21:20
Warmup phase: All threads running...
Warmup phase: Start at: Time: 2018/10/07 17:21:21
Warmup phase: Complete at: Time: 2018/10/07 17:22:56
Warmup phase: Wall time: 95s
Loading phase: All threads running...
Loading phase: Start at: Time: 2018/10/07 17:22:56
Loading phase: Complete at: Time: 2018/10/07 17:23:58
Loading phase: Wall time: 62s
Peak phase: All threads running...
Peak phase: Start at: Time: 2018/10/07 17:23:58
Peak phase: Complete at: Time: 2018/10/07 17:25:01
Peak phase: Wall time: 62s
Cooldown phase: All threads running...
Cooldown phase: Start at: Time: 2018/10/07 17:25:01
Cooldown phase: Complete at: Time: 2018/10/07 17:26:02
Cooldown phase: Wall time: 61s
Client ends at: 2018/10/07 17:26:02
========================================================
Total number of request sent: 7400
Total number of successful responses: 7400
Test Wall time: 281s
Overall throughput for all phases (total number of requests/total wall time) : 26 times/s
Mean latencies for all requests is: 309.0 ms
Median latencies for all request is: 362.0 ms
95th percentile latency is: 545 ms
99th percentile latency is: 711 ms
Finished.

Process finished with exit code 0
```

```
/Library/Java/JavaVirtualMachines/jdk1.8.0_152.jdk/Contents/Home/bin/java ...
URL is: https://kgorgk01w0.execute-api.us-east-2.amazonaws.com
thread number is: 100
iteration number is: 100
Client starts at: Time 2018/10/07 17:33:34
Warmup phase: All threads running...
Warmup phase: Start at: Time: 2018/10/07 17:33:34
Warmup phase: Complete at: Time: 2018/10/07 17:34:38
Warmup phase: Wall time: 64s
Loading phase: All threads running...
Loading phase: Start at: Time: 2018/10/07 17:34:38
Loading phase: Complete at: Time: 2018/10/07 17:35:39
Loading phase: Wall time: 61s
Peak phase: All threads running...
Peak phase: Start at: Time: 2018/10/07 17:35:39
Peak phase: Complete at: Time: 2018/10/07 17:36:41
Peak phase: Wall time: 61s
Cooldown phase: All threads running...
Cooldown phase: Start at: Time: 2018/10/07 17:36:41
Cooldown phase: Complete at: Time: 2018/10/07 17:37:40
Cooldown phase: Wall time: 59s
Client ends at: 2018/10/07 17:37:40
========================================================
Total number of request sent: 37000
Total number of successful responses: 37000
Test Wall time: 246s
Overall throughput for all phases (total number of requests/total wall time) : 150 times/s
Mean latencies for all requests is: 297.0 ms
Median latencies for all request is: 359.0 ms
95th percentile latency is: 485 ms
99th percentile latency is: 620 ms
Finished.

Process finished with exit code 0
```