CS6650 HW1 Report

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Github: https://github.com/JasonWen1/HW1-NEU6650

ClientDesgin:

I use AlbumMetaData class to hold the data we need to POST, I use methods
sendPostRequest to handle post, and sendgetRequest to handle get.
For save to csv, I use opencsv as tools to help me write the data from list to csv.
For plotting, I use python matplotlib.pyplot to draw the throughput picture easily.

How to run the client:
Run main method need 4 parameters: <threadGroupSize> <numThreadGroups> <delay>
<IPAddr>

So just like "10 10 2 http://localhost:8080/xxxx/albums"
For go server I use http://[IP_ADDRESS]/IGORTON/AlbumStore/1.0.0/albums
For java server I use http://[IP_ADDRESS]/[war_file]/albums

Becasue basic ec-2 is very slow, so I choosed a stronger server. But the comparation
between Java and Go server is same.

(I have begged extension from professor, so please do not deduct my late score, thank you
so much!!!!! I have put a lot of effort for this course)

Result of Client1:

	Go server throughput	Java server throughput
threadgroupSize = 10 numThreadGroups = 10 delay = 2	9975.56	9974.37
threadgroupSize = 10 numThreadGroups = 20 delay = 2	9980.04	9978.2
threadgroupSize = 10 numThreadGroups = 30 delay = 2	9979.54	9979.21

```
-------- Printing Results For JavaClient1 --------
---------Go Server--------------------
threadGroupSize : 10
numThreadGroups : 10
delay : 2
Number of Successful Requests: 200000
Wall Time: 20.05 (sec)
Throughput: 9975.56 (req/sec)
```

```
-------- Printing Results For JavaClient1 --------
---------Go Server---------------------
threadGroupSize : 10
numThreadGroups : 20
delay : 2
Number of Successful Requests: 400000
Wall Time: 40.08 (sec)
Throughput: 9980.04 (req/sec)
```
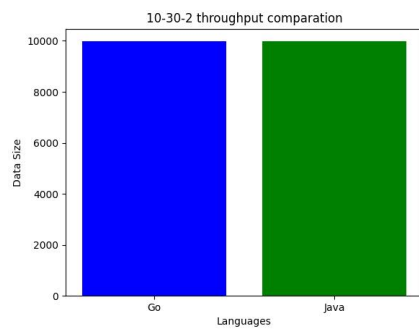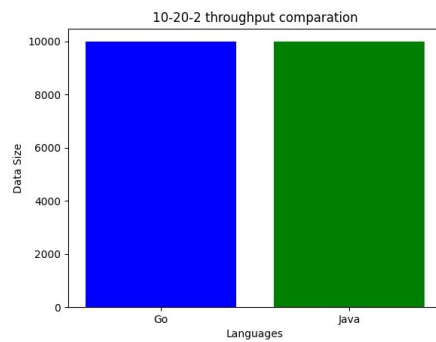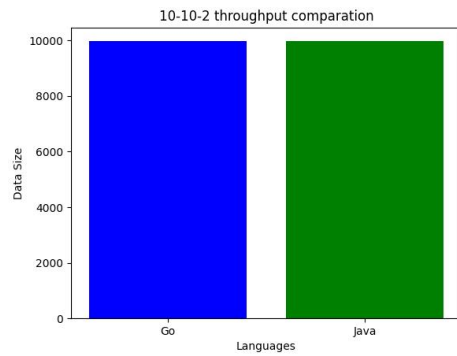
```
----------------------------------------
-------- Printing Results For JavaClient1 -
---------Go Server---------------------
threadGroupSize : 10
numThreadGroups : 30
delay : 2
Number of Successful Requests: 600000
Wall Time: 60.12 (sec)
Throughput: 9979.54 (req/sec)
```

```
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-------- Printing Results For JavaClient1 -------
---------Java Server---------------------
threadGroupSize : 10
numThreadGroups : 10
delay : 2
Number of Successful Requests: 199996
Wall Time: 20.05 (sec)
Throughput: 9974.37 (req/sec)
-------------------------------------------------
-------- Printing Results For JavaClient1 --------
---------Java Server---------------------
threadGroupSize : 10
numThreadGroups : 20
delay : 2
Number of Successful Requests: 399996
Wall Time: 40.09 (sec)
Throughput: 9978.2 (req/sec)
```

```
-------------------------------------------------
-------- Printing Results For JavaClient1 -----
---------Java Server---------------------
threadGroupSize : 10
numThreadGroups : 30
delay : 2
Number of Successful Requests: 600000
Wall Time: 60.12 (sec)
Throughput: 9979.21 (req/sec)
```

Client1 Go vs Java throughput

10-10-2 throughput comparation

10-20-2 throughput comparation

10-30-2 throughput comparation

For client1, go and java throughput is nearly same, go is slightly faster than java.

Result of Client2:

	Go server throughput	Java server throughput
threadgroupSize = 10 numThreadGroups = 10 delay = 2	9973.57	9976.8
threadgroupSize = 10 numThreadGroups = 20 delay = 2	9979.29	9976.8
threadgroupSize = 10 numThreadGroups = 30 delay = 2	9856.26	9867.17

```
---------Java Server----------------------
threadGroupSize : 10
numThreadGroups : 10
delay : 2
Number of Successful Requests: 199965
Wall Time: 20.04 (sec)
Throughput: 9976.8 (req/sec)




The information of request type: POST
The mean response time is: 0.26997300269973ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 75ms

The information of request type: GET
The mean response time is: 0.2515049504950495ms
The median response time is: 0.0ms
The p99 response time is: 2ms
The minimum response time is: 0ms
The maximum response time is: 29ms

-------- Printing Results For JavaClient2 --------
---------Java Server----------------------
threadGroupSize : 10
numThreadGroups : 20
delay : 2
Number of Successful Requests: 399990
Wall Time: 40.09 (sec)
Throughput: 9976.8 (req/sec)




The information of request type: POST
The mean response time is: 0.19218039098045098ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 59ms

The information of request type: GET
The mean response time is: 0.17360696517412935ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 125ms

-------- Printing Results For JavaClient2 --------
---------Java Server----------------------
threadGroupSize : 10
numThreadGroups : 30
delay : 2
Number of Successful Requests: 599993
Wall Time: 60.81 (sec)
Throughput: 9867.17 (req/sec)




The information of request type: POST
The mean response time is: 0.1812572914236192ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 60ms

The information of request type: GET
The mean response time is: 0.1599966777408638ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 60ms
```

```
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-------- Printing Results For JavaClient2 --------
---------Go Server----------------------
threadGroupSize : 10
numThreadGroups : 10
delay : 2
Number of Successful Requests: 200000
Wall Time: 20.05 (sec)
Throughput: 9973.57 (req/sec)



The information of request type: POST
The mean response time is: 0.21695830416958303ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 65ms


The information of request type: GET
The mean response time is: 0.17769306930693068ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 45ms
```

```
---------Go Server----------------------
threadGroupSize : 10
numThreadGroups : 20
delay : 2
Number of Successful Requests: 400000
Wall Time: 40.08 (sec)
Throughput: 9979.29 (req/sec)



The information of request type: POST
The mean response time is: 0.1808509574521274ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 58ms


The information of request type: GET
The mean response time is: 0.14731840796019902ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 59ms
```
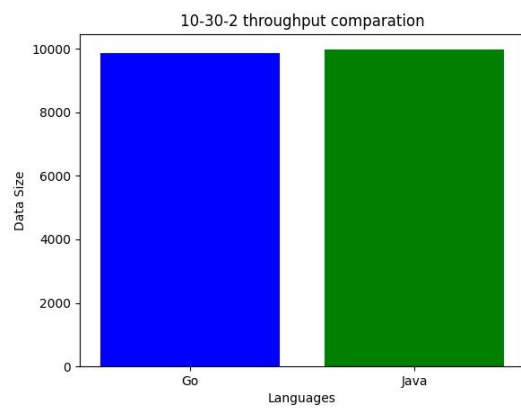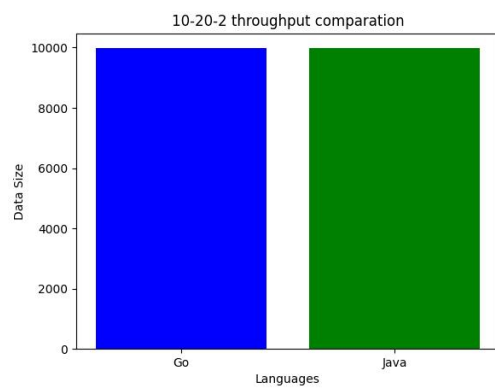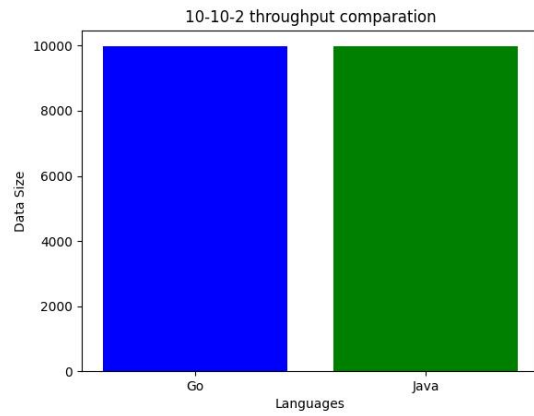
```
---------Go Server----------------------
threadGroupSize : 10
numThreadGroups : 30
delay : 2
Number of Successful Requests: 600000
Wall Time: 60.88 (sec)
Throughput: 9856.26 (req/sec)



The information of request type: POST
The mean response time is: 0.17144761841271958ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 63ms


The information of request type: GET
The mean response time is: 0.13788372093023255ms
The median response time is: 0.0ms
The p99 response time is: 1ms
The minimum response time is: 0ms
The maximum response time is: 63ms
```

10-10-2 throughput comparation

10-20-2 throughput comparation

10-30-2 throughput comparation

Client2, Go and Java still perform nearly same. We found when groups go large in client2, go and java become slower.

Go-10-30-2 throughput graph: