性能测试报告

Ⅰ 运行结果

- `curl -i -X GET http://127.0.0.1:8889/index.html` | GET 正常获取

```
denglening@ubuntu:~$ curl -i -X GET http://127.0.0.1:8889/index.html
HTTP/1.1 200 OK
<!DOCTYPE html>
HTTP/1.1 200 OK  <br/>
Server: Tiny Web Server<br/>
Content-length: 248<br/>
Content-type: text/html <br/>
<html>
</head>
<title>CS06142</title><br/>
</head>
<body>
<h1  align="center">CS06142</h1><br/>
<p  align="center">This is the team whose name is 人算不如云算<br/>
</p>
<hr>
<address align="center">Http Server at ip-127-0-0-1 Port 8888</address>
</body></html>
curl: (18) transfer closed with 248 bytes remaining to read
```

- `curl -i -X GET http://127.0.0.1:8889/abcd.html` | GET 非正常获取

```
denglening@ubuntu:~$ curl -i -X GET http://127.0.0.1:8889/abcd.html
HTTP/1.1 404 NOT FOUND
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>404</title>
</head>
<body>
    <h1 style="text-align:center">404 Not Found</h1>
</body>
</html>
```

- `curl -i -X PUT http://127.0.0.1:8889` | HTTP 方法未实现部分

```
denglening@ubuntu:~$ curl -i -X PUT http://127.0.0.1:8889
HTTP/1.1 501 Method Not Implemented
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>501</title>
</head>
<body>
    <h1 style="text-align:center">501 Not Implemented</h1>
</body>
</html>
```

- `curl -i -X POST http://127.0.0.1:8889` | POST 正常获取

```
denglening@ubuntu:~$ curl -i -X POST http://127.0.0.1:8889 --data 'Name=HNU&ID=123'
HTTP/1.1 404 NOT FOUND
curl: (56) Recv failure: 连接被对方重设
```

- `curl -i -X POST http://127.0.0.1:8889` | POST 非正常获取

```
denglening@ubuntu:~$ curl -i -X POST http://127.0.0.1:8889
HTTP/1.1 404 NOT FOUND
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>404</title>
</head>
<body>
    <h1 style="text-align:center">404 Not Found</h1>
</body>
</html>
```

II 性能测试

程序性能会受到诸多因素的影响。此处意在遵守单一变量原则下，改变硬件环境其一要素的简单压力测试。

[ENVIRONMENT A] denglening@Ubuntu

- 系统内核 Linux ubuntu 5.3.0-46-generic
- 内存 2048MB、磁盘 20GB
- CPU 信息
    - 供应商 GenuineIntel
    - 模组名 Intel(R) Core(TM) i5-7Y54 CPU @ 1.20GHz

TEST

- `ab -n 20 -c 20 http://127.0.0.1:8889/index.html`
- `./httpserver --ip 127.0.0.1 --port 8889 --number-thread 30`

```
Server Software:
Server Hostname:        127.0.0.1
Server Port:            8889

Document Path:          /index.html
Document Length:        0 bytes

Concurrency Level:      20
Time taken for tests:   0.040 seconds
Complete requests:      20
Failed requests:        0
Total transferred:      8420 bytes
HTML transferred:       0 bytes
Requests per second:    501.66 [#/sec] (mean)
Time per request:       39.868 [ms] (mean)
Time per request:       1.993 [ms] (mean, across all concurrent requests)
Transfer rate:          206.25 [Kbytes/sec] received

Connection Times (ms)
              min  mean[+/-sd] median   max
Connect:        6    8   1.8      8      14
Processing:     3   11   6.6     12      21
Waiting:        2   10   6.3     10      20
Total:         10   19   5.8     20      26

Percentage of the requests served within a certain time (ms)
  50%     20
  66%     25
  75%     25
  80%     26
  90%     26
  95%     26
  98%     26
  99%     26
 100%     26 (longest request)
```

[ENVIRONMENT B] Huang Zifeng

- 系统内核 Linux ubuntu 5.3.0-46-generic
- 内存 2048MB、磁盘 20GB
- CPU 信息
  - 供应商 GenuineIntel
  - 模组名 Intel(R) Core(TM) i5-6300HQ CPU @ 2.30 GHz

TEST

- `ab -n 20 -c 20 http://127.0.0.1:8889/index.html`
- `./httpserver --ip 127.0.0.1 --port 8889 --number-thread 30`

```
Server Software:
Server Hostname:        127.0.0.1
Server Port:            8889

Document Path:          /index.html
Document Length:        0 bytes

Concurrency Level:      20
Time taken for tests:   0.013 seconds
Complete requests:      20
Failed requests:        0
Total transferred:      8420 bytes
HTML transferred:       0 bytes
Requests per second:    1503.53 [#/sec] (mean)
Time per request:       13.302 [ms] (mean)
Time per request:       0.665 [ms] (mean, across all concurrent requests)
Transfer rate:          618.15 [Kbytes/sec] received

Connection Times (ms)
              min  mean[+/-sd] median   max
Connect:        5    6   0.8      7       8
Processing:     1    3   1.0      3       5
Waiting:        0    2   1.0      3       4
Total:          7    9   0.9      9      11
WARNING: The median and mean for the initial connection time are not within a no
rmal deviation
        These results are probably not that reliable.

Percentage of the requests served within a certain time (ms)
  50%      9
  66%     10
  75%     10
  80%     10
  90%     10
  95%     11
  98%     11
  99%     11
 100%     11 (longest request)
```

ENVIRONMENT	A	B
CPU 主频	1.20GHz	2.30GHz
每秒处理请求数	501.66	1503.53

可见在CPU主频越高的情况下，每秒处理请求数越多，性能越好