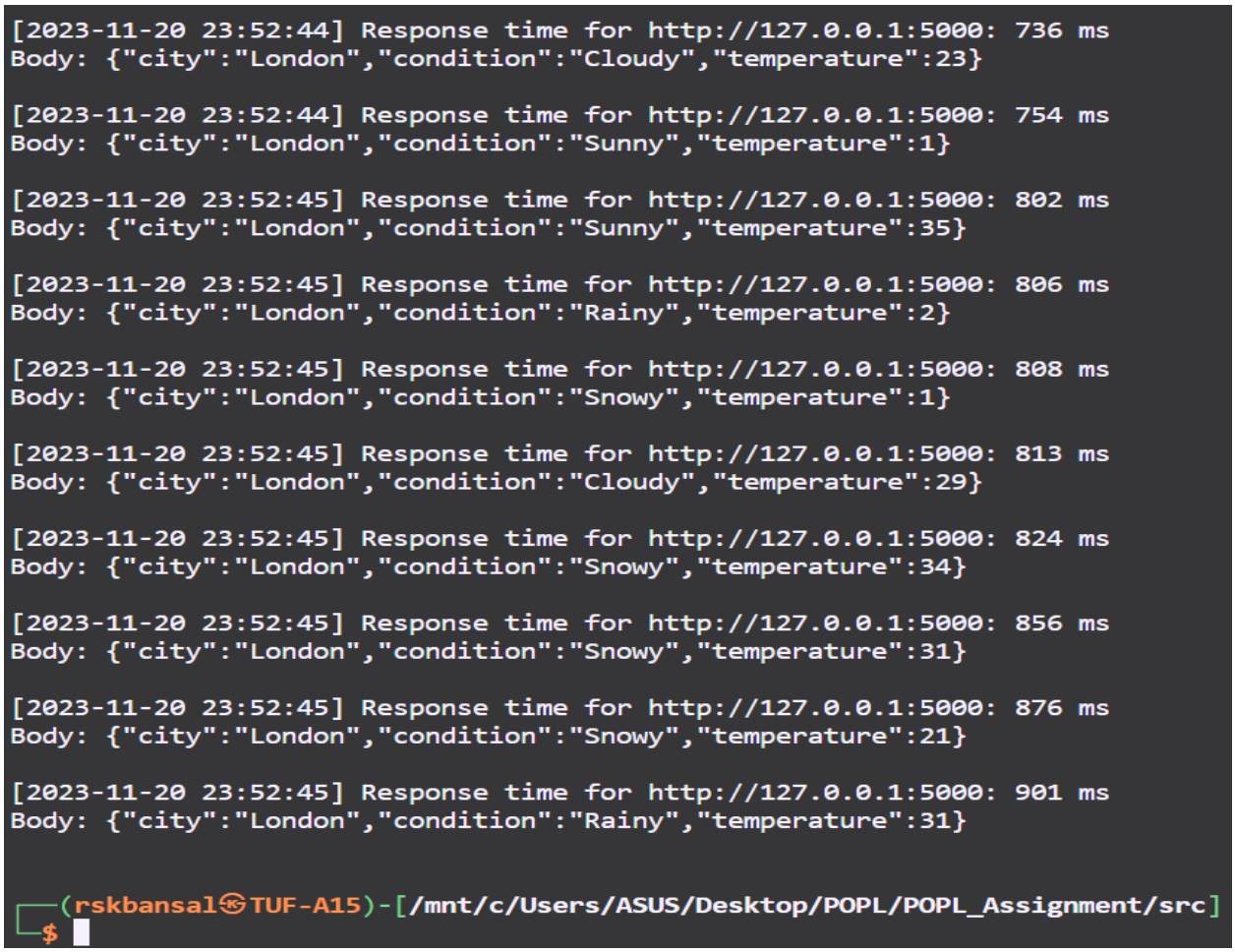
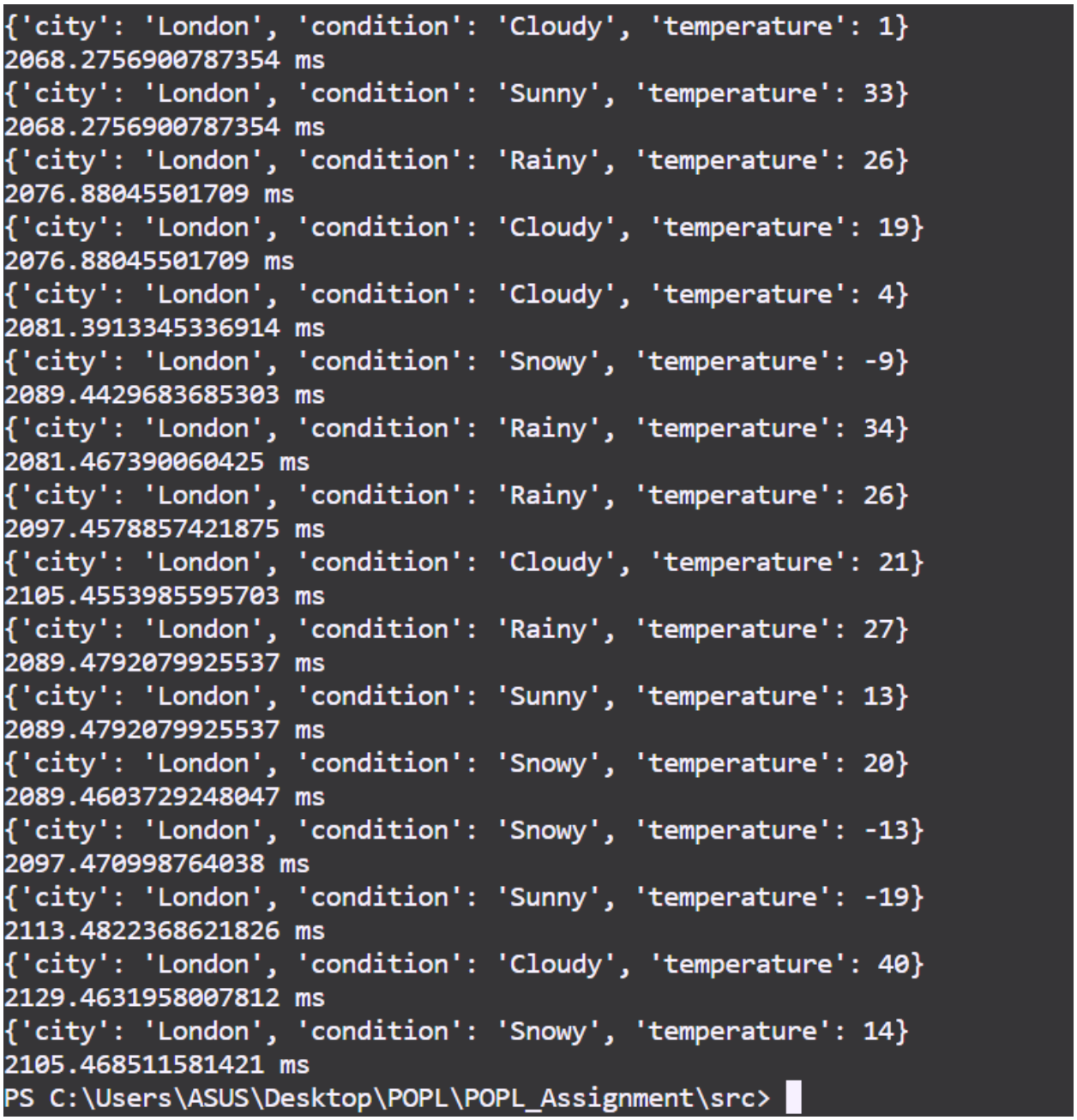
Results

```
┌──(rskbansal㉿TUF-A15)-[/mnt/c/Users/ASUS/Desktop/POPL/POPL_Assignment]
└─$ ab -n 20 -c 20 "http://localhost:5000/get_weather?city=Goa"
This is ApacheBench, Version 2.3 <$Revision: 1903618 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking localhost (be patient).....done


Server Software:        gunicorn/19.10.0
Server Hostname:        localhost
Server Port:            5000

Document Path:          /get_weather?city=Goa
Document Length:        31 bytes

Concurrency Level:      20
Time taken for tests:   0.064 seconds
Complete requests:      20
Failed requests:        0
Non-2xx responses:      20
Total transferred:      3880 bytes
HTML transferred:       620 bytes
Requests per second:    312.46 [#/sec] (mean)
Time per request:       64.008 [ms] (mean)
Time per request:       3.200 [ms] (mean, across all concurrent requests)
Transfer rate:          59.20 [Kbytes/sec] received

Connection Times (ms)
              min  mean[+/-sd] median   max
Connect:        0    1   0.4      1       1
Processing:     4   31  18.2     35      60
Waiting:        2   30  18.3     32      59
Total:          4   32  18.0     36      60

Percentage of the requests served within a certain time (ms)
  50%     36
  66%     44
  75%     47
  80%     50
  90%     57
  95%     60
  98%     60
  99%     60
 100%     60 (longest request)
```

APACHE BENCHMARK



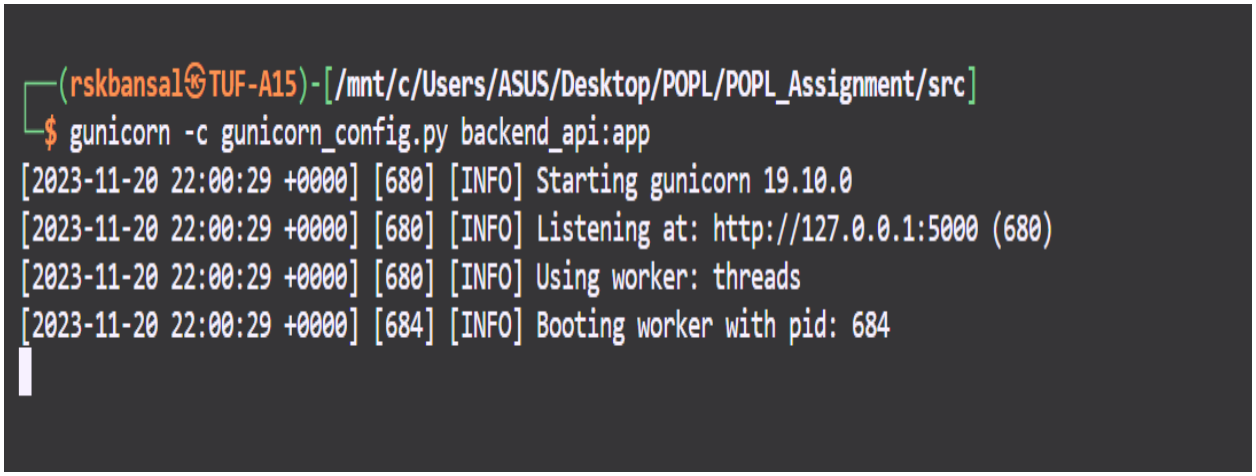
RESULTS FOR C++



RESULTS FOR PYTHON

```
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 338.7761ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Rainy\",\"temperature\":38}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 344.1674ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Cloudy\",\"temperature\":3}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 346.0162ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Cloudy\",\"temperature\":31}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 348.2016ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Rainy\",\"temperature\":12}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 350.5684ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Sunny\",\"temperature\":16}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 351.55ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Snowy\",\"temperature\":-9}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 353.2503ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Rainy\",\"temperature\":27}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 355.7076ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Sunny\",\"temperature\":37}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 358.7067ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Sunny\",\"temperature\":40}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 362.4549ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Sunny\",\"temperature\":13}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 364.2761ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Rainy\",\"temperature\":5}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 366.6395ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Rainy\",\"temperature\":35}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 368.9062ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Sunny\",\"temperature\":23}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 369.9165ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Cloudy\",\"temperature\":12}\n")
Response time for http://localhost:5000/get_weather?city=London&api_key=p0pl-15-fun: 373.988ms
body = Ok(b"{\"city\":\"London\",\"condition\":\"Sunny\",\"temperature\":-2}\n")
PS C:\Users\ASUS\Desktop\POPL\POPL_Assignment>
```

RESULTS FOR RUST



CODE FOR SERVER

CONCLUSION RESULT

As we can see clearly,the rust results are faster than the C++ code.