

计网实验 2:HTTP 客户端

502025330012 段斐

实验结果

程序使用 rust 编写，已成功通过 check2.py 测试

```
● (base) jduan@tian18:~/hello-rust/hello_world$ python check2.py target/debug/hello_world
preparing tests for target/debug/hello_world...

running 18 tests
test should work ... ok
test should include headers with -i ... ok
test should send GET request ... ok
test should send POST request ... ok
test should send POST request with data ... ok
test should send POST request with data by default ... ok
test should send POST request with custom header ... ok
test should send POST request with data and custom header ... ok
test should send POST request with duplicated custom header ... ok
test should send PUT request ... ok
test should send DELETE request ... ok
test should send custom method ... ok
test should return 404 for missing file ... ok
test should handle localhost URL ... ok
test should handle URL with query string ... ok
test should ignore URL fragment/hash ... ok
test should error with invalid option ... ok
test should be ok visit http://example.com/ ... ok

test result: ok. 18 passed; 0 failed; finished in 2.17s
```

遇到的问题及解决方法

使用 `stream.read_to_end` 从 tcp 端口中读取响应时，需要等到 tcp 连接断开时才能返回读取结果，延迟过长导致无法通过最后一个请求 `example.com` 的 test，而 HTTP1.1 默认 `keep-alive`。

通过逐字节读取的方法，首先通过 `"\r\n\r\n"` 分离响应头，再从响应头中读取 `content length`，可确定响应体的长度，读取固定长度的字节数后可立即结束 `stream` 的读取，进行后续处理。