

## (1). "2.1 Fetch a Web page" 任务

```
slxie@Xie:~/minnow$ telnet cs144.keithw.org 80
Trying 104.196.238.229...
Connected to cs144.keithw.org.
Escape character is '^]'.
GET /hello HTTP/1.1
Host: cs144.keithw.org

HTTP/1.1 200 OK
Date: Fri, 31 Oct 2025 10:26:58 GMT
Server: Apache
Last-Modified: Thu, 13 Dec 2018 15:45:29 GMT
ETag: "e-57ce93446cb64"
Accept-Ranges: bytes
Content-Length: 14
Content-Type: text/plain

Hello, CS144!
Connection: close
HTTP/1.1 400 Bad Request
Date: Fri, 31 Oct 2025 10:27:17 GMT
Server: Apache
Content-Length: 226
Connection: close
Content-Type: text/html; charset=iso-8859-1

<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>400 Bad Request</title>
</head><body>
<h1>Bad Request</h1>
<p>Your browser sent a request that this server could not understand.<br />
</p>
</body></html>
Connection closed by foreign host.
slxie@Xie:~/minnow$
```

```
slxie@Xie:~/minnow$ telnet cs144.keithw.org 80
Trying 104.196.238.229...
Connected to cs144.keithw.org.
Escape character is '^]'.
GET /lab0/23302010021 HTTP/1.1
Host: cs144.keithw.org

HTTP/1.1 200 OK
Date: Fri, 31 Oct 2025 11:17:52 GMT
Server: Apache
X-You-Said-Your-SunetID-Was: 23302010021
X-Your-Code-Is: 578786
Content-length: 115
Vary: Accept-Encoding
Content-Type: text/plain

Hello! You told us that your SUNet ID was "23302010021". Please see the HTTP headers (above) for your secret code.
Connection closed by foreign host.
slxie@Xie:~/minnow$
```

```
slxie@Xie:~/minnow$ netcat -v -l -p 9090
Listening on 0.0.0.0 9090
Connection received on localhost 45224
hello world from netcat
hello world too
^C
slxie@Xie:~/minnow$
```

```
slxie@Xie:~/minnow$ telnet localhost 9090
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
hello world from netcat
hello world too
Connection closed by foreign host.
slxie@Xie:~/minnow$
```

## (2). "3.4 Writing wget" 三三三三三

```
● slxie@Xie:~/minnow$ cmake --build build --target check_webget
Test project /home/slxie/minnow/build
  Start 1: compile with bug-checkers
1/2 Test #1: compile with bug-checkers ..... Passed    0.15 sec
  Start 2: t_webget
2/2 Test #2: t_webget ..... Passed    1.06 sec

100% tests passed, 0 tests failed out of 2

Total Test time (real) = 1.21 sec
Built target check_webget
```

## (3). "4 An in-memory reliable byte stream" 三三三三三

```
● slxie@Xie:~/minnow$ cmake --build build --target check0
Test project /home/slxiie/minnow/build
    Start 1: compile with bug-checkers
  1/10 Test #1: compile with bug-checkers ..... Passed   0.16 sec
    Start 2: t_webget
  2/10 Test #2: t_webget ..... Passed   1.05 sec
    Start 3: byte_stream_basics
  3/10 Test #3: byte_stream_basics ..... Passed   0.01 sec
    Start 4: byte_stream_capacity
  4/10 Test #4: byte_stream_capacity ..... Passed   0.01 sec
    Start 5: byte_stream_one_write
  5/10 Test #5: byte_stream_one_write ..... Passed   0.01 sec
    Start 6: byte_stream_two_writes
  6/10 Test #6: byte_stream_two_writes ..... Passed   0.01 sec
    Start 7: byte_stream_many_writes
  7/10 Test #7: byte_stream_many_writes ..... Passed   0.04 sec
    Start 8: byte_stream_stress_test
  8/10 Test #8: byte_stream_stress_test ..... Passed   0.02 sec
    Start 37: compile with optimization
  9/10 Test #37: compile with optimization ..... Passed   0.07 sec
    Start 38: byte_stream_speed_test
      ByteStream throughput: 18.07 Gbit/s
 10/10 Test #38: byte_stream_speed_test ..... Passed   0.07 sec

100% tests passed, 0 tests failed out of 10

Total Test time (real) = 1.45 sec
Built target check0
```