1. Requirement
    - JDK 1.8.0_171
    - Gradle 4.5.1

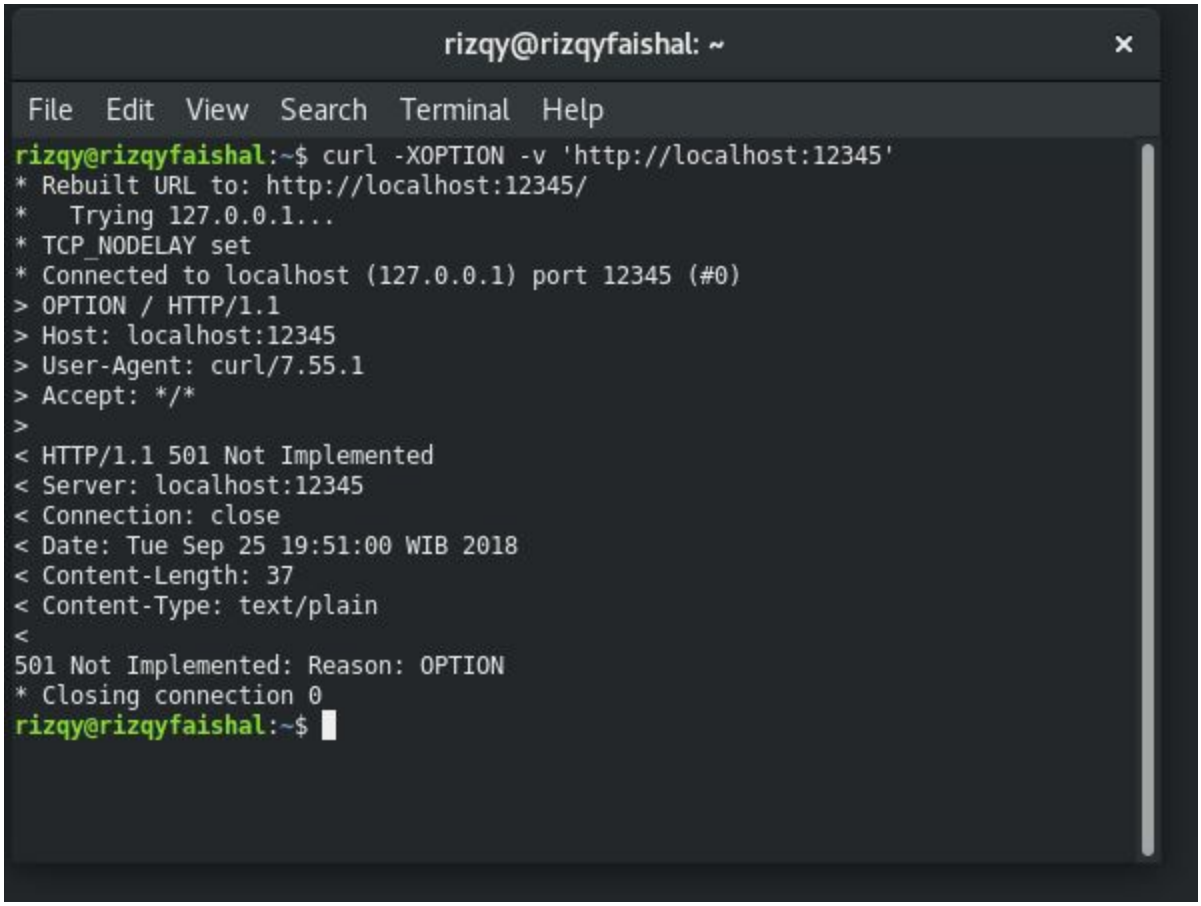
2. Installation
    - Unzip source code
    - gradle build
3. Running Server
    - gradle run (port default 12345)
    - Jika ingin menggunakan port custom gradle run -Pport=port_number
    - Buka client browser atau curl, buka link localhost:port_number ex: localhost:12345

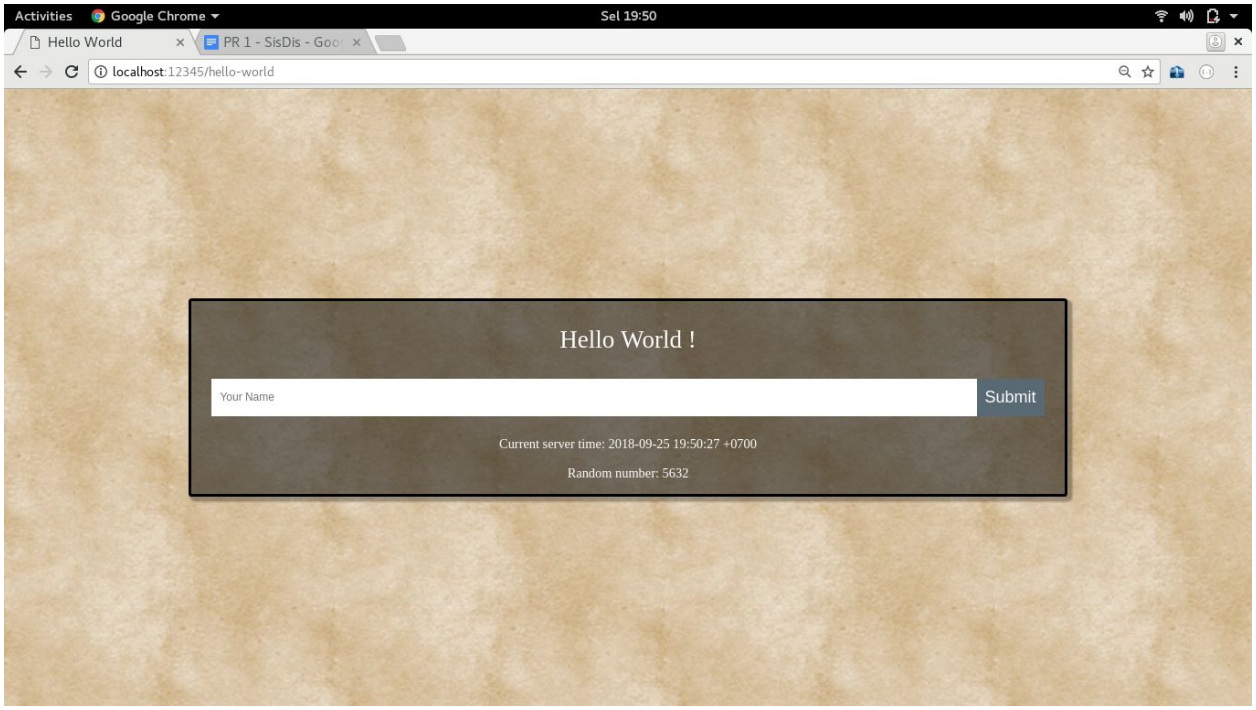
    -

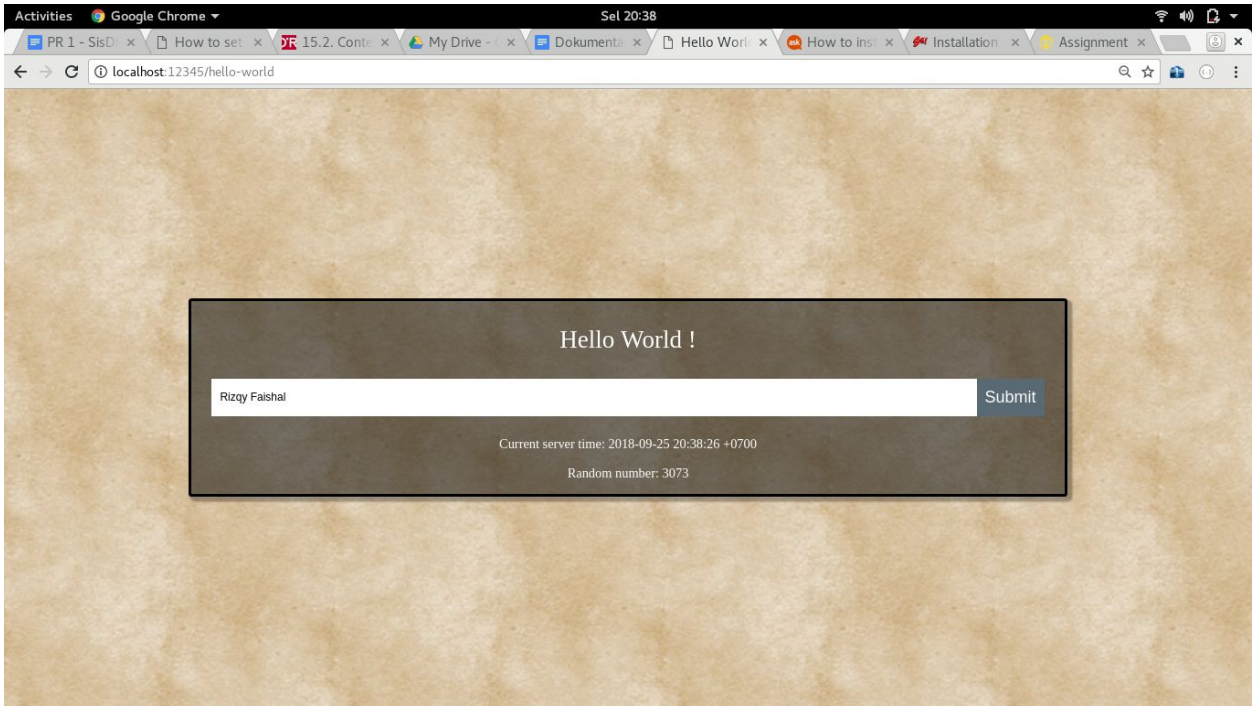
```
rizqy@rizqyfaishal:~$ curl localhost:12345/info?type=randoma -v
*   Trying 127.0.0.1...
* TCP_NODELAY set
* Connected to localhost (127.0.0.1) port 12345 (#0)
> GET /info?type=randoma HTTP/1.1
> Host: localhost:12345
> User-Agent: curl/7.55.1
> Accept: */*
>
< HTTP/1.1 200 OK
< Server: localhost:12345
< Connection: close
< Date: Tue Sep 25 20:12:35 WIB 2018
< Charset: UTF-8
< Content-Length: 9
< Content-Type: text/plain
<
No Data
* Closing connection 0
rizqy@rizqyfaishal:~$ curl -X POST localhost:12345/info?type=randoma -H 'Content-Type: applicat
ion/json'
400 Bad Request
rizqy@rizqyfaishal:~$ curl -X POST localhost:12345/info?type=randoma -H 'Content-Type: applicat
ion/json'
400 Bad Request
rizqy@rizqyfaishal:~$
```

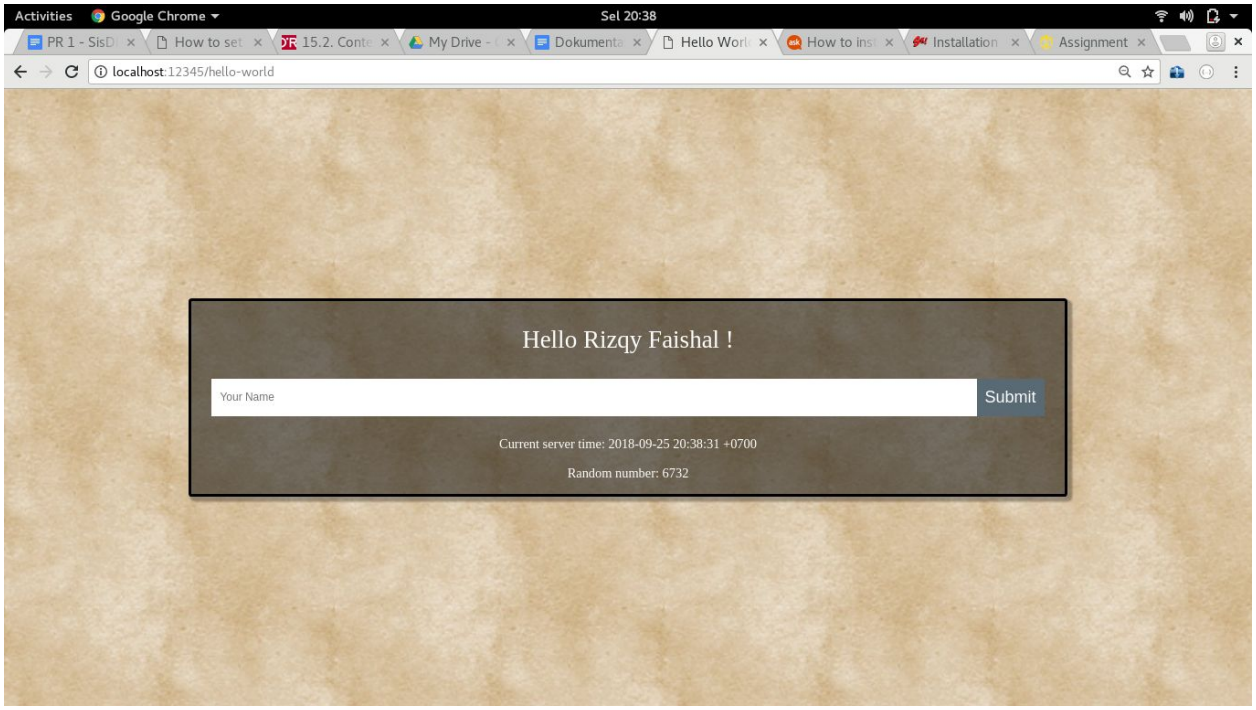
```
rizqy@rizqyfaishal:~$ curl -v 'http://localhost:12345/sasas'
*   Trying 127.0.0.1...
* TCP_NODELAY set
* Connected to localhost (127.0.0.1) port 12345 (#0)
> GET /sasas HTTP/1.1
> Host: localhost:12345
> User-Agent: curl/7.55.1
> Accept: */*
>
< HTTP/1.1 404 Not Found
< Server: localhost:12345
< Connection: close
< Date: Tue Sep 25 19:53:40 WIB 2018
< Content-Length: 0
< Content-Type: text/plain
<
* Closing connection 0
rizqy@rizqyfaishal:~$ curl localhost:12345
rizqy@rizqyfaishal:~$ curl localhost:12345 -v
* Rebuilt URL to: localhost:12345/
*   Trying 127.0.0.1...
* TCP_NODELAY set
* Connected to localhost (127.0.0.1) port 12345 (#0)
> GET / HTTP/1.1
> Host: localhost:12345
> User-Agent: curl/7.55.1
> Accept: */*
>
< HTTP/1.1 302 Found
< Server: localhost:12345
< Connection: close
< Date: Tue Sep 25 19:53:49 WIB 2018
< Content-Length: 0
< Content-Type: text/plain
< Location: /hello-world
<
* Closing connection 0
rizqy@rizqyfaishal:~$
```

```
rizqy@rizqyfaishal:~$ curl -v 'localhost:12345/hello-world' -d "name=John%20Cena"
*   Trying 127.0.0.1...
* TCP_NODELAY set
* Connected to localhost (127.0.0.1) port 12345 (#0)
> POST /hello-world HTTP/1.1
> Host: localhost:12345
> User-Agent: curl/7.55.1
> Accept: */*
> Content-Length: 16
> Content-Type: application/x-www-form-urlencoded
>
* upload completely sent off: 16 out of 16 bytes
< HTTP/1.1 200 OK
< Server: localhost:12345
< Connection: close
< Date: Tue Sep 25 19:52:03 WIB 2018
< Content-Length: 893
< Content-Type: text/html
<
<!DOCTYPE html>
<html>
<head>
        <title>Hello World</title>
        <link rel="stylesheet" href="/style">
</head>
<body>
        <div id="container">
                <p id="title">Hello John Cena !</p>
                <form id="form" method="POST">
                        <input id="form-name" type="text" name="name" placeholder="Your Name" />
                        <input id="form-submit" type="submit" value="Submit">
                </form>
                <p>Current server time: <span id="time"></span></p>
                <p>Random number: <span id="random"></span></p>
        </div>
        <script type="text/javascript" src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
        <script type="text/javascript">
                var timeSpan = $("#time");
                var randomSpan = $("#random");
                setInterval(function() {
                        $.get("/info?type=time", function(data) {
                                timeSpan.html(data);
                        });
                        $.get("/info?type=random", function(data) {
                                randomSpan.html(data);
```


rizqy@rizqyfaishal: ~
File Edit View Search Terminal Help
rizqy@rizqyfaishal:~$ curl -XOPTION -v 'http://localhost:12345'
* Rebuilt URL to: http://localhost:12345/
*   Trying 127.0.0.1...
* TCP_NODELAY set
* Connected to localhost (127.0.0.1) port 12345 (#0)
> OPTION / HTTP/1.1
> Host: localhost:12345
> User-Agent: curl/7.55.1
> Accept: */*
>
< HTTP/1.1 501 Not Implemented
< Server: localhost:12345
< Connection: close
< Date: Tue Sep 25 19:51:00 WIB 2018
< Content-Length: 37
< Content-Type: text/plain
<
501 Not Implemented: Reason: OPTION
* Closing connection 0
rizqy@rizqyfaishal:~$


Activities
Google Chrome
Sel 19:50
Hello World
PR 1 - SisDis - Goo
localhost:12345/hello-world
Hello World !
Your Name
Submit
Current server time: 2018-09-25 19:50:27 +0700
Random number: 5632





Hal-hal yang dipelajari dala pembuatan server ini:

- Mengerti bagaimana header HTTP bekerja dan berbagai formatnya
- Mengerti bagaimana sebenernya cara kerja alur data dari socket sampai bisa di proses menjadi data text, lalu di kembalikan response ke browser
- Mengerti cara menggunakan curl

- Mengerti kesalahan yang terjadi ketika menggunakan resource yang sama dalam multi thread, solusinya: melakukan cloning resource
- Mengerti arti dari content-content HTTP header