

LAPORAN PRAKTIKUM
PEMROGRAMAN BERBASIS WEB
LATIHAN 08

Untuk Memenuhi Latihan Praktikum Pemrograman Berbasis Web



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Disusun oleh:

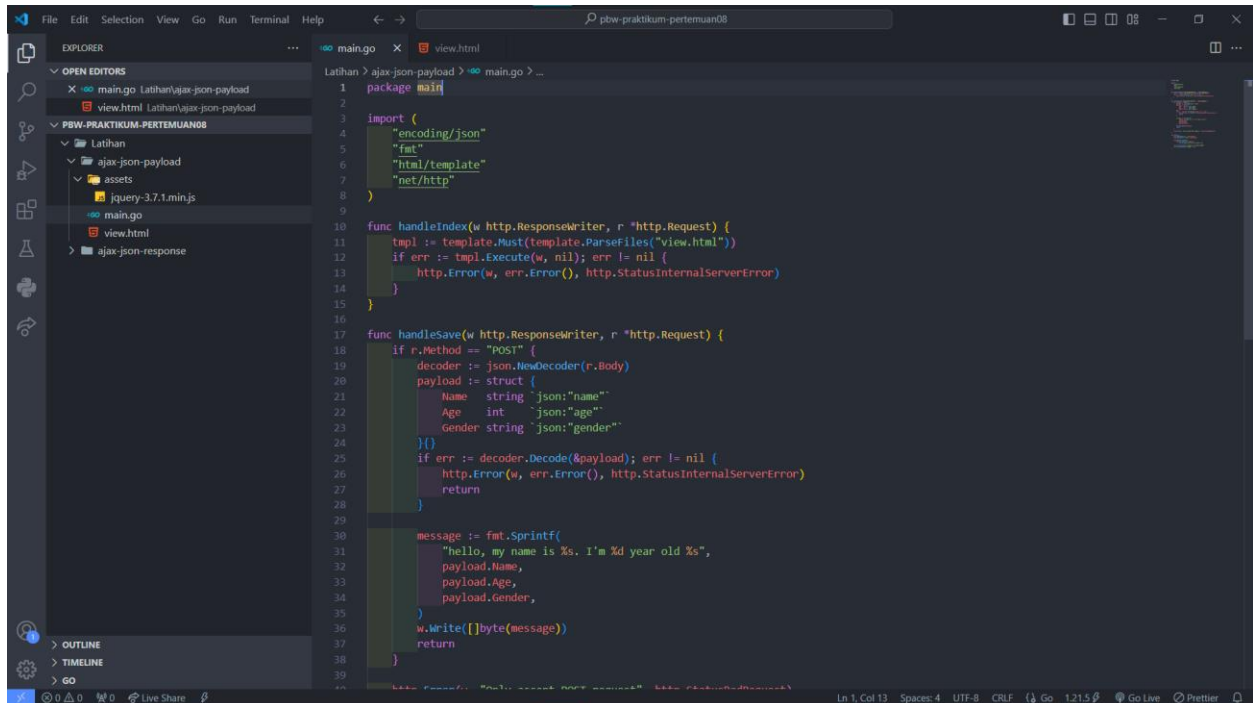
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PROGRAM STUDI TEKNIK INFORMATIKA
FAKULTAS TEKNIK
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JAKARTA SELATAN
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Link Github: <https://github.com/hotraa/PBW/>

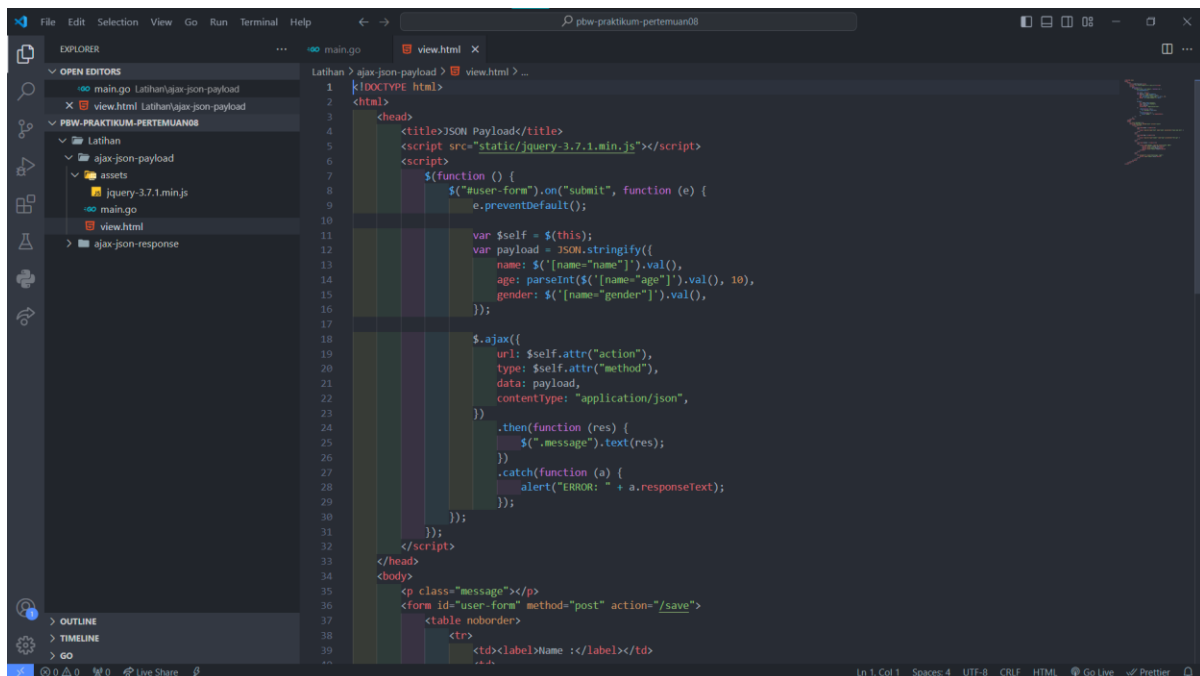
Screenshot Latihan 1 (AJAX JSON Payload)

Screenshot Source Code: *main.go*



```
1 package main
2
3 import (
4     "encoding/json"
5     "fmt"
6     "html/template"
7     "net/http"
8 )
9
10 func handleIndex(w http.ResponseWriter, r *http.Request) {
11     tmpl := template.Must(template.ParseFiles("view.html"))
12     if err := tmpl.Execute(w, nil); err != nil {
13         http.Error(w, err.Error(), http.StatusInternalServerError)
14     }
15 }
16
17 func handleSave(w http.ResponseWriter, r *http.Request) {
18     if r.Method == "POST" {
19         decoder := json.NewDecoder(r.Body)
20         payload := struct {
21             Name string `json:"name"`
22             Age  int   `json:"age"`
23             Gender string `json:"gender"`
24         }{}
25         if err := decoder.Decode(&payload); err != nil {
26             http.Error(w, err.Error(), http.StatusInternalServerError)
27             return
28         }
29
30         message := fmt.Sprintf(
31             "hello, my name is %s. I'm %d year old %s",
32             payload.Name,
33             payload.Age,
34             payload.Gender,
35         )
36         w.Write([]byte(message))
37         return
38     }
39 }
```

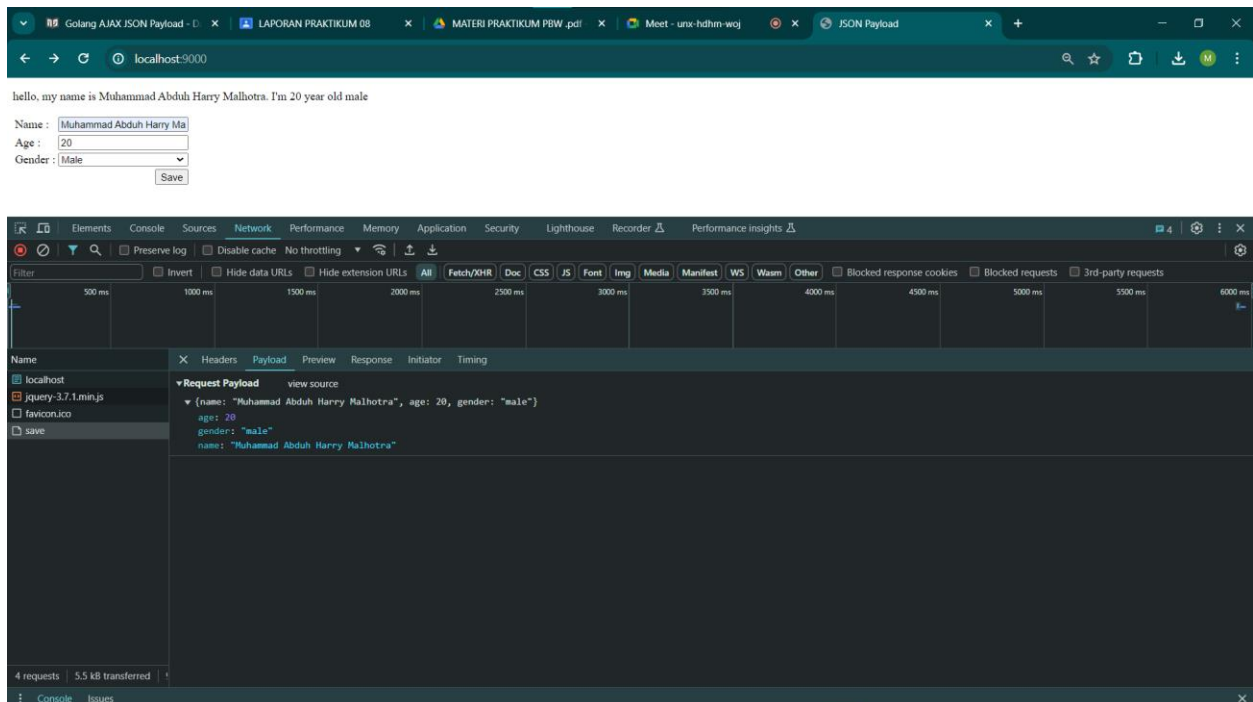
Screenshot Source Code: *view.html*



```
1 <!DOCTYPE html>
2 <html>
3 <head>
4     <title>JSON Payload</title>
5     <script src="static/jquery-3.7.1.min.js"></script>
6     <script>
7         $(function () {
8             $("user-form").on("submit", function (e) {
9                 e.preventDefault();
10
11                 var $self = $(this);
12                 var payload = JSON.stringify({
13                     name: $('[name="name"]').val(),
14                     age: parseInt($('[name="age"]').val(), 10),
15                     gender: $('[name="gender"]').val(),
16                 });
17
18                 $.ajax({
19                     url: $self.attr("action"),
20                     type: $self.attr("method"),
21                     data: payload,
22                     contentType: "application/json",
23                 })
24                 .then(function (res) {
25                     $(".message").text(res);
26                 })
27                 .catch(function (a) {
28                     alert("ERROR: " + a.responseText);
29                 });
30             });
31         });
32     </script>
33 </head>
34 <body>
35     <p class="message"></p>
36     <form id="user-form" method="post" action="/save">
37         <table noborder>
38             <tr>
39                 <td><label>Name </label></td>
40             </tr>
41         </table>
42     </form>
43 </body>
44 </html>
```

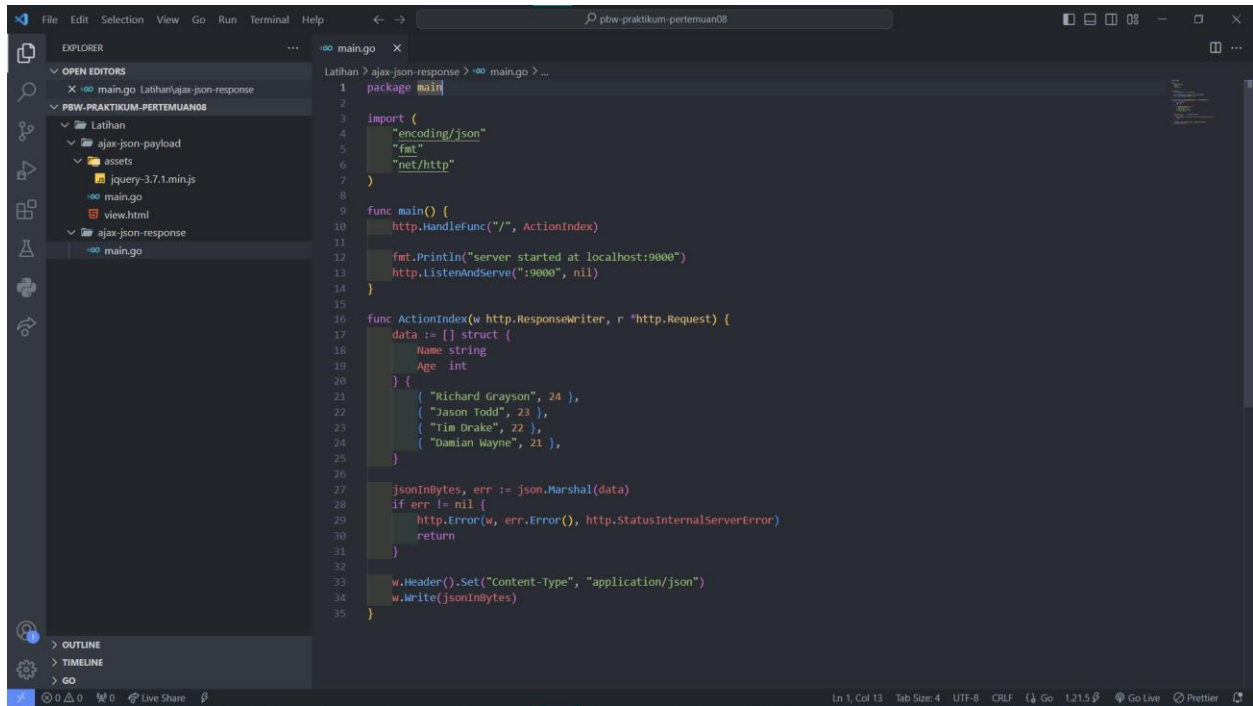
```
30  });
31  });
32  </script>
33  </head>
34  <body>
35    <p class="message"></p>
36    <form id="user-form" method="post" action="/save">
37      <table noborder>
38        <tr>
39          <td><label>Name :</label></td>
40          <td>
41            <input required type="text" name="name" placeholder="Type name here" />
42          </td>
43        </tr>
44        <tr>
45          <td><label>Age :</label></td>
46          <td>
47            <input required type="number" name="age" placeholder="Set age" />
48          </td>
49        </tr>
50        <tr>
51          <td><label>Gender :</label></td>
52          <td>
53            <select name="gender" required style="width: 100%">
54              <option value="">Select one</option>
55              <option value="male">Male</option>
56              <option value="female">Female</option>
57            </select>
58          </td>
59        </tr>
60        <tr>
61          <td colspan="2" style="text-align: right">
62            <button type="submit">Save</button>
63          </td>
64        </tr>
65      </table>
66    </form>
67  </body>
68 </html>
```

Screenshot Output



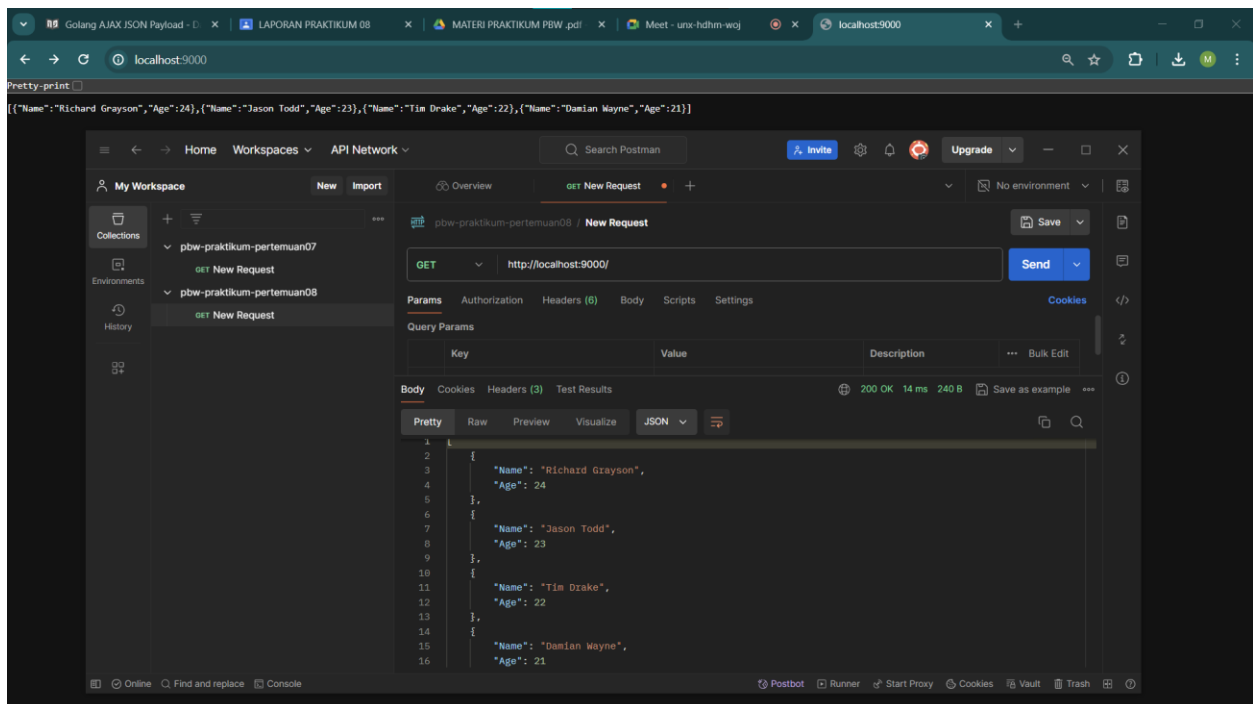
Screenshot Latihan 2 (AJAX JSON Payload)

Screenshot Source Code



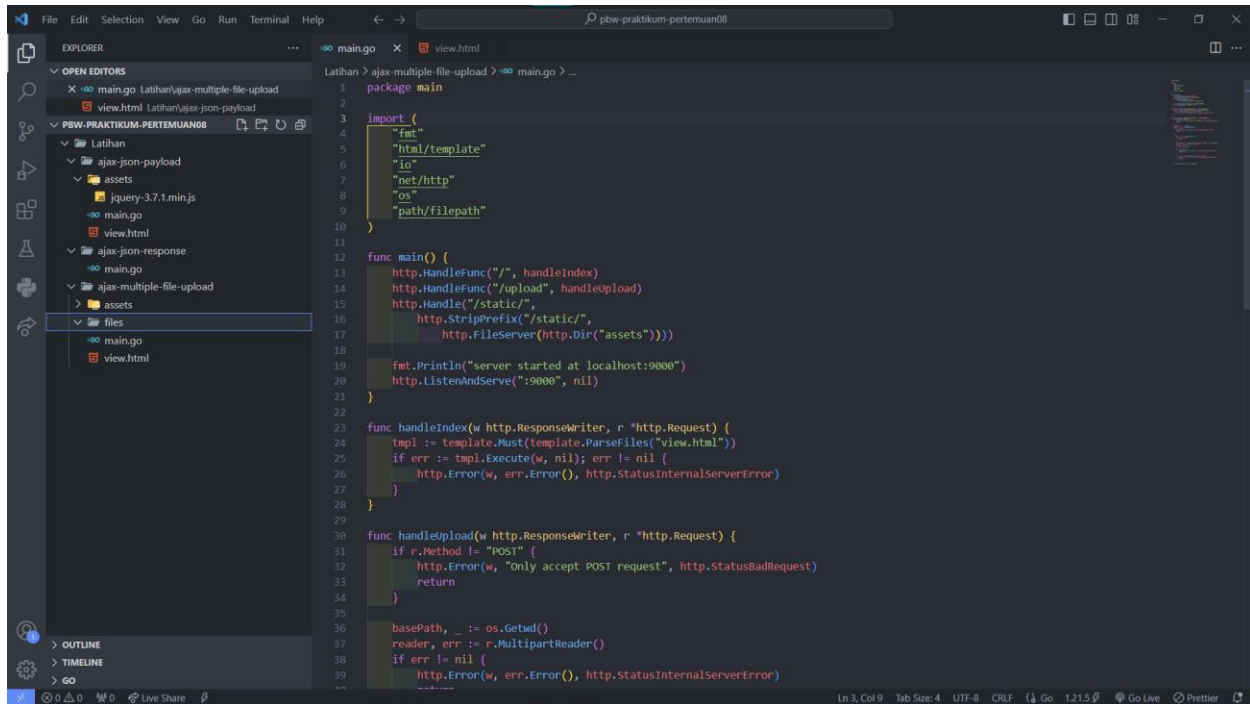
```
1 package main
2
3 import (
4     "encoding/json"
5     "fmt"
6     "net/http"
7 )
8
9 func main() {
10     http.HandleFunc("/", ActionIndex)
11
12     fmt.Println("server started at localhost:9000")
13     http.ListenAndServe(":9000", nil)
14 }
15
16 func ActionIndex(w http.ResponseWriter, r *http.Request) {
17     data := [] struct {
18         Name string
19         Age  int
20     } {
21         { "Richard Grayson", 24 },
22         { "Jason Todd", 23 },
23         { "Tim Drake", 22 },
24         { "Damian Wayne", 21 },
25     }
26
27     jsonBytes, err := json.Marshal(data)
28     if err != nil {
29         http.Error(w, err.Error(), http.StatusInternalServerError)
30         return
31     }
32
33     w.Header().Set("Content-Type", "application/json")
34     w.Write(jsonBytes)
35 }
```

Screenshot Output

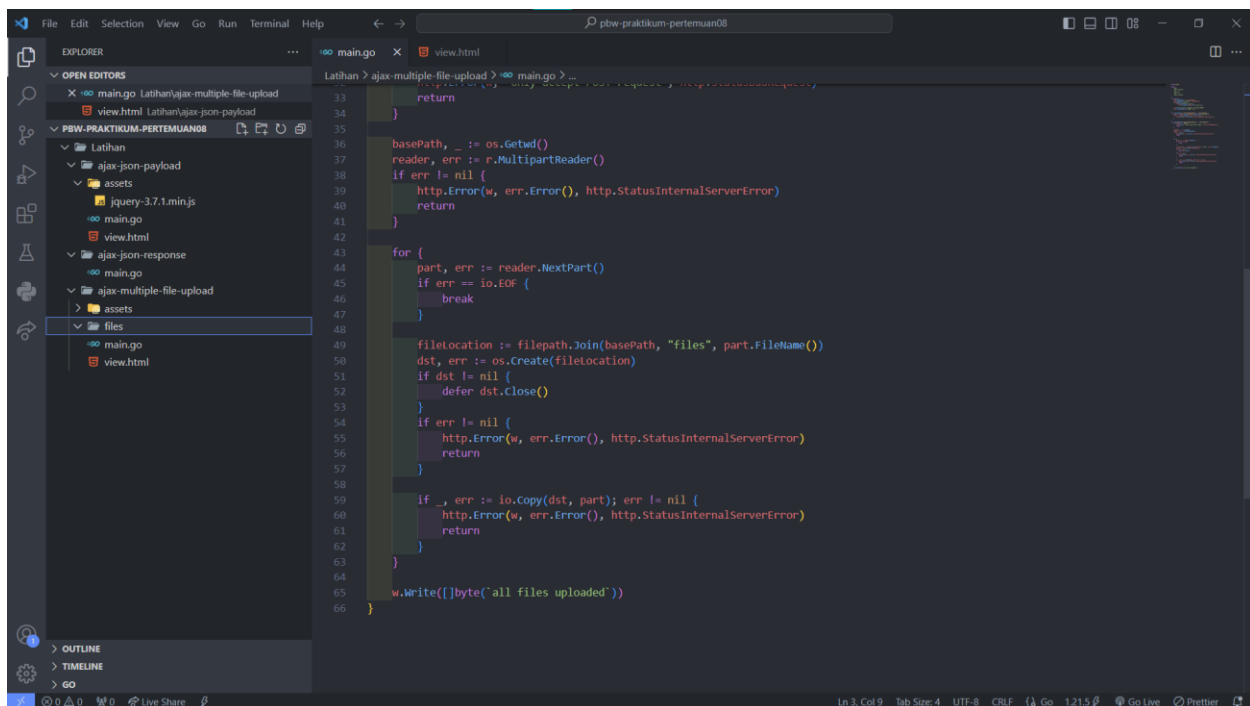


Screenshot Latihan 3 (AJAX Multiple File Upload)

Screenshot Source Code: *main.go*

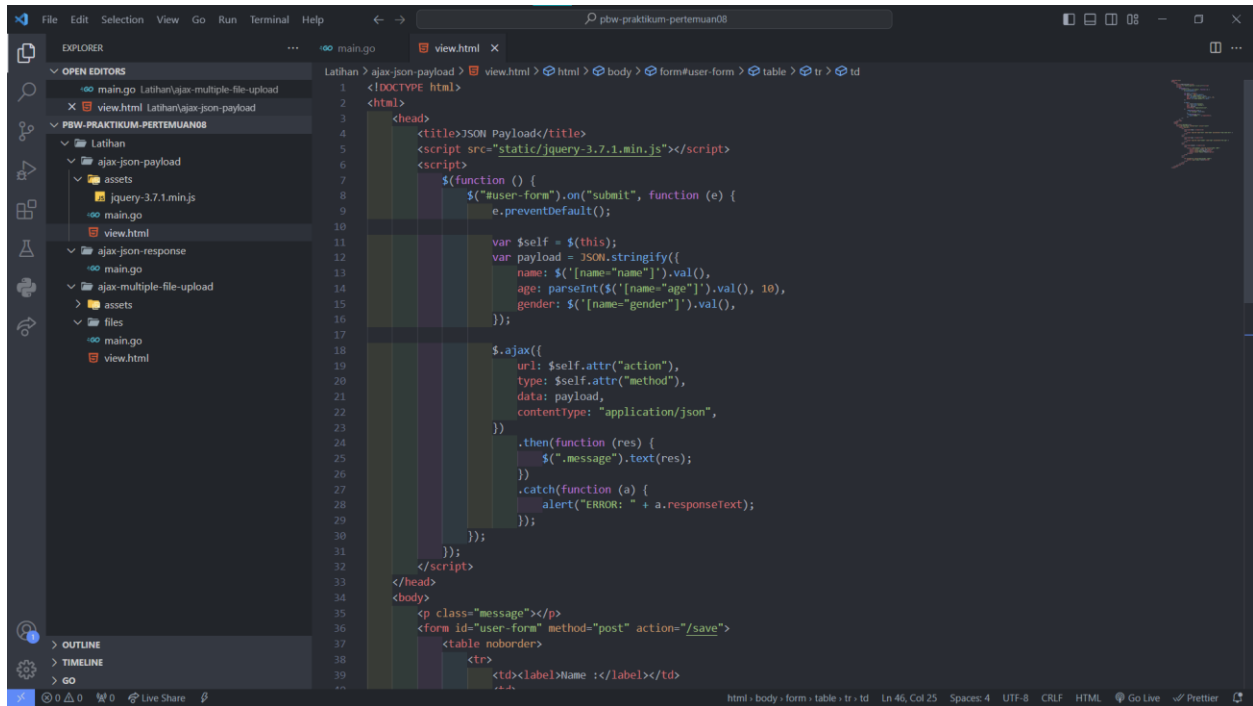


```
1 package main
2
3 import (
4     "fmt"
5     "html/template"
6     "io"
7     "net/http"
8     "os"
9     "path/filepath"
10 )
11
12 func main() {
13     http.HandleFunc("/", handleIndex)
14     http.HandleFunc("/upload", handleUpload)
15     http.Handle("/static/",
16         http.StripPrefix("/static/",
17             http.FileServer(http.Dir("assets"))))
18
19     fmt.Println("server started at localhost:9000")
20     http.ListenAndServe(":9000", nil)
21 }
22
23 func handleIndex(w http.ResponseWriter, r *http.Request) {
24     tmpl := template.Must(template.ParseFiles("view.html"))
25     if err := tmpl.Execute(w, nil); err != nil {
26         http.Error(w, err.Error(), http.StatusInternalServerError)
27     }
28 }
29
30 func handleUpload(w http.ResponseWriter, r *http.Request) {
31     if r.Method != "POST" {
32         http.Error(w, "Only accept POST request", http.StatusBadRequest)
33         return
34     }
35
36     basePath, _ := os.Getwd()
37     reader, err := r.MultipartReader()
38     if err != nil {
39         http.Error(w, err.Error(), http.StatusInternalServerError)
40     }
41
42     for {
43         part, err := reader.NextPart()
44         if err == io.EOF {
45             break
46         }
47
48         fileLocation := filepath.Join(basePath, "files", part.FileName())
49         dst, err := os.Create(fileLocation)
50         if dst != nil {
51             defer dst.Close()
52         }
53
54         if err != nil {
55             http.Error(w, err.Error(), http.StatusInternalServerError)
56             return
57         }
58
59         if _, err := io.Copy(dst, part); err != nil {
60             http.Error(w, err.Error(), http.StatusInternalServerError)
61             return
62         }
63     }
64
65     w.Write([]byte("all files uploaded"))
66 }
```

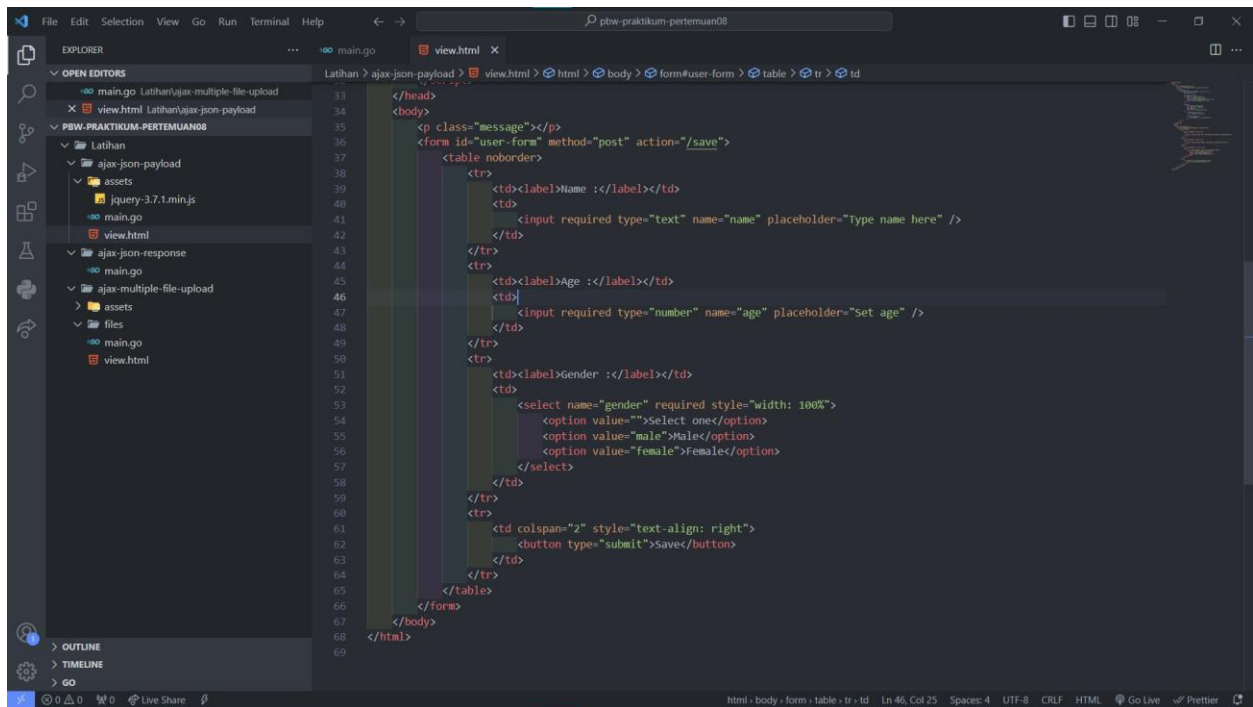


```
33     return
34 }
35
36 basePath, _ := os.Getwd()
37 reader, err := r.MultipartReader()
38 if err != nil {
39     http.Error(w, err.Error(), http.StatusInternalServerError)
40     return
41 }
42
43 for {
44     part, err := reader.NextPart()
45     if err == io.EOF {
46         break
47     }
48
49     fileLocation := filepath.Join(basePath, "files", part.FileName())
50     dst, err := os.Create(fileLocation)
51     if dst != nil {
52         defer dst.Close()
53     }
54
55     if err != nil {
56         http.Error(w, err.Error(), http.StatusInternalServerError)
57         return
58     }
59
60     if _, err := io.Copy(dst, part); err != nil {
61         http.Error(w, err.Error(), http.StatusInternalServerError)
62         return
63     }
64 }
65
66 w.Write([]byte("all files uploaded"))
67 }
```

Screenshot Source Code: *view.html*

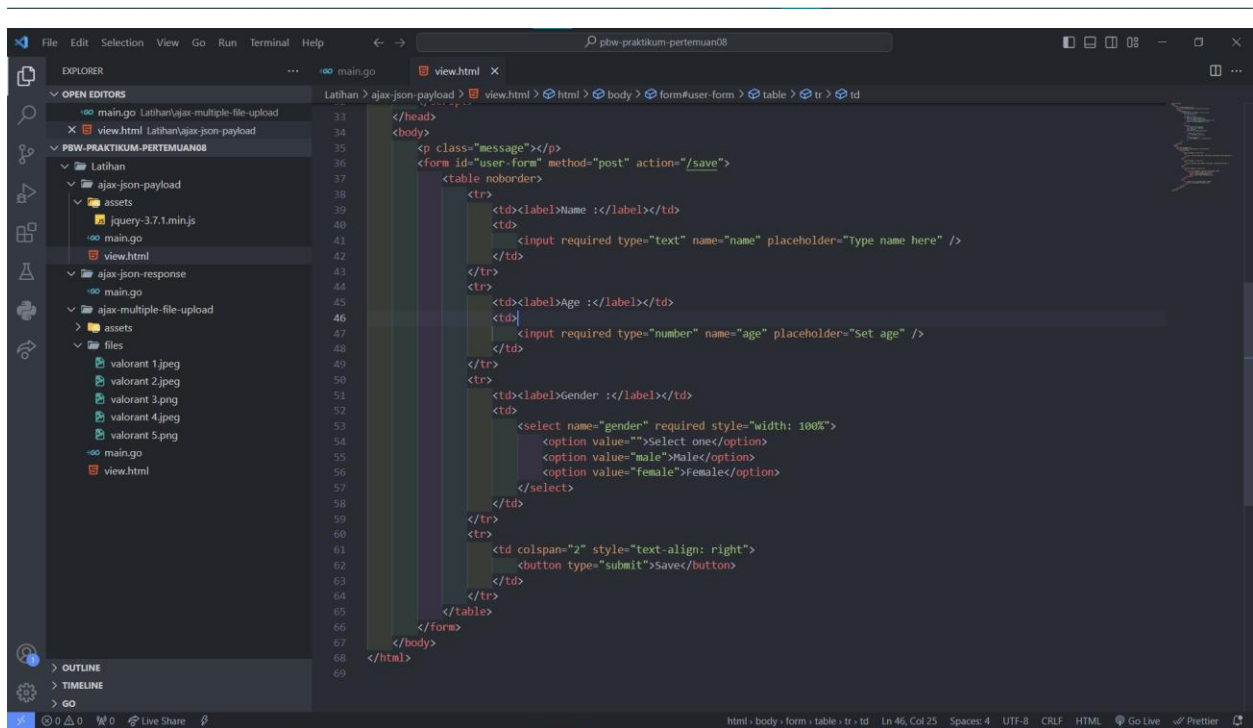
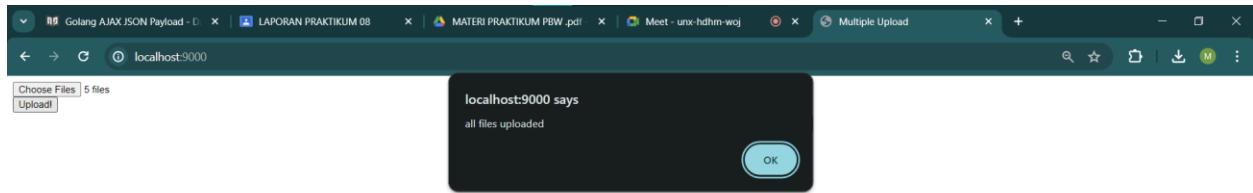


```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>JSON Payload</title>
5     <script src="static/jquery-3.7.1.min.js"></script>
6     <script>
7       $(function () {
8         $("#user-form").on("submit", function (e) {
9           e.preventDefault();
10
11           var $self = $(this);
12           var payload = JSON.stringify({
13             name: $('[name="name"]').val(),
14             age: parseInt($('[name="age"]').val(), 10),
15             gender: $('[name="gender"]').val(),
16           });
17
18           $.ajax({
19             url: $self.attr("action"),
20             type: $self.attr("method"),
21             data: payload,
22             contentType: "application/json",
23           })
24             .then(function (res) {
25               $(".message").text(res);
26             })
27             .catch(function (a) {
28               alert("ERROR: " + a.responseText);
29             });
30         });
31       });
32     </script>
33   </head>
34   <body>
35     <p class="message"></p>
36     <form id="user-form" method="post" action="/save">
37       <table noborder>
38         <tr>
39           <td><label>Name :</label></td>
```



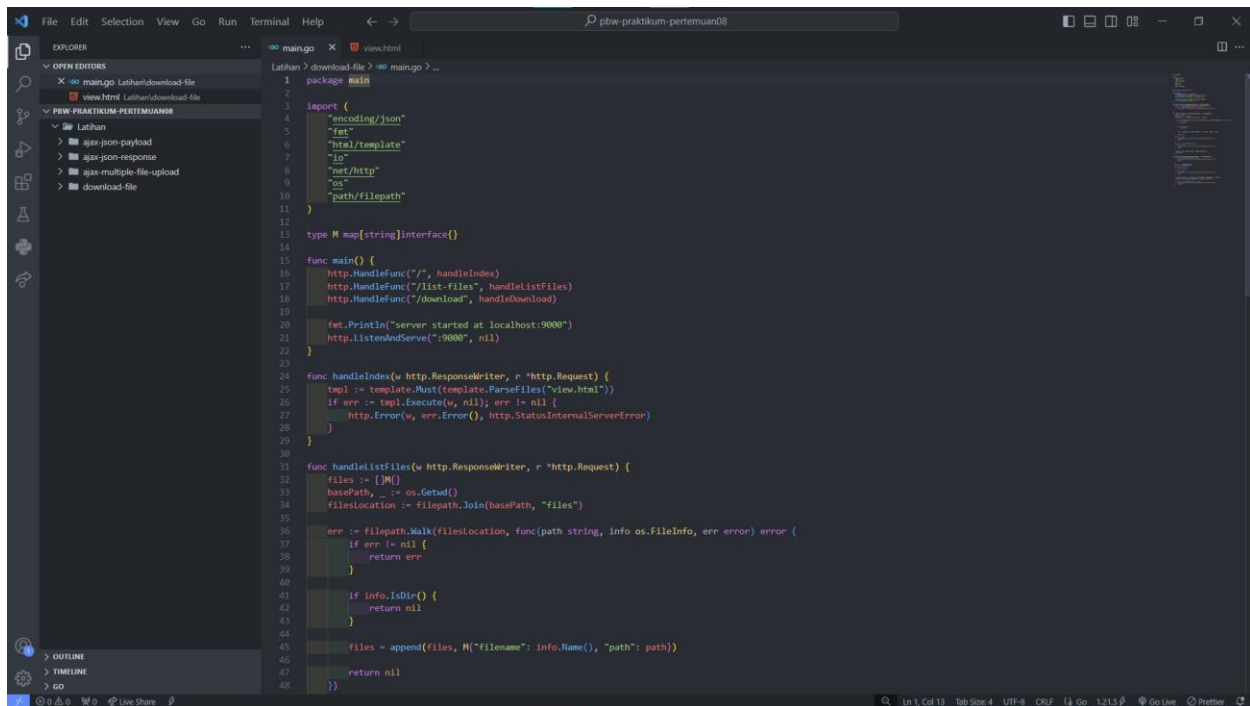
```
40           <td>
41             <input required type="text" name="name" placeholder="Type name here" />
42           </td>
43         </tr>
44         <tr>
45           <td><label>Age :</label></td>
46           <td>
47             <input required type="number" name="age" placeholder="Set age" />
48           </td>
49         </tr>
50         <tr>
51           <td><label>Gender :</label></td>
52           <td>
53             <select name="gender" required style="width: 100%">
54               <option value="">Select one</option>
55               <option value="male">Male</option>
56               <option value="female">Female</option>
57             </select>
58           </td>
59         </tr>
60         <tr>
61           <td colspan="2" style="text-align: right">
62             <button type="submit">Save</button>
63           </td>
64         </tr>
65       </table>
66     </form>
67   </body>
68 </html>
```

Screenshot Output

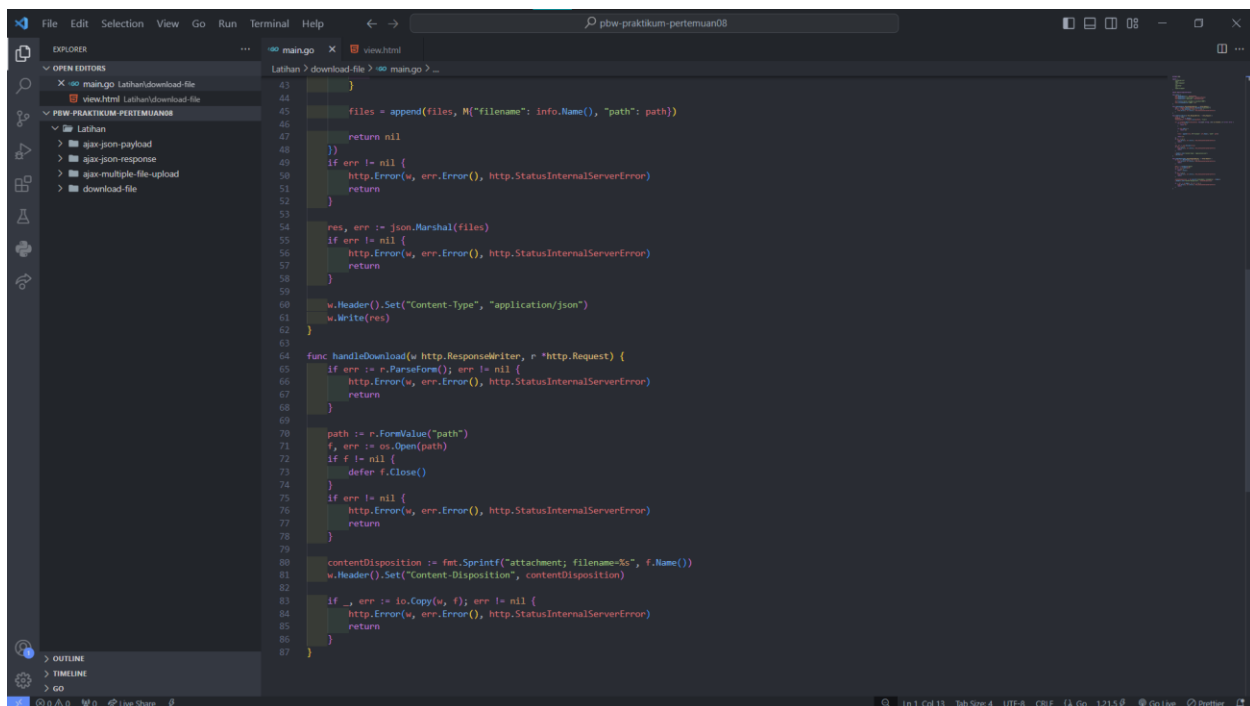


Screenshot Latihan 4 (Download File)

Screenshot Source Code: *main.go*

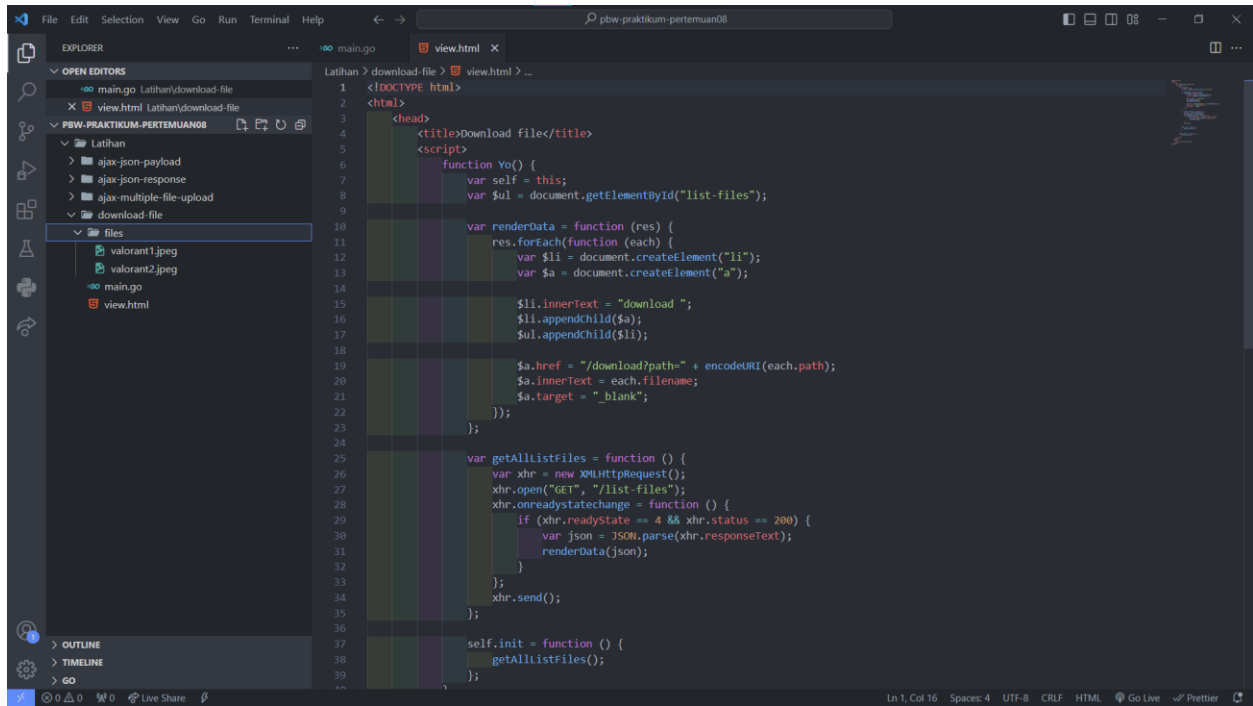


```
1 package main
2
3 import (
4     "encoding/json"
5     "fmt"
6     "html/template"
7     "io"
8     "net/http"
9     "os"
10    "path/filepath"
11)
12
13 type M map[string]interface{}
14
15 func main() {
16     http.HandleFunc("/", handleIndex)
17     http.HandleFunc("/list-files", handleListFiles)
18     http.HandleFunc("/download", handleDownload)
19
20     fmt.Println("server started at localhost:9000")
21     http.ListenAndServe(":9000", nil)
22 }
23
24 func handleIndex(w http.ResponseWriter, r *http.Request) {
25     tmpl := template.Must(template.ParseFiles("view.html"))
26     if err := tmpl.Execute(w, nil); err != nil {
27         http.Error(w, err.Error(), http.StatusInternalServerError)
28     }
29 }
30
31 func handleListFiles(w http.ResponseWriter, r *http.Request) {
32     files := []M{}
33     basePath, _ := os.Getwd()
34     filesLocation := filepath.Join(basePath, "files")
35
36     err := filepath.Walk(filesLocation, func(path string, info os.FileInfo, err error) error {
37         if err != nil {
38             return err
39         }
40
41         if info.IsDir() {
42             return nil
43         }
44
45         files = append(files, M{"filename": info.Name(), "path": path})
46     })
47     return nil
48 }
```

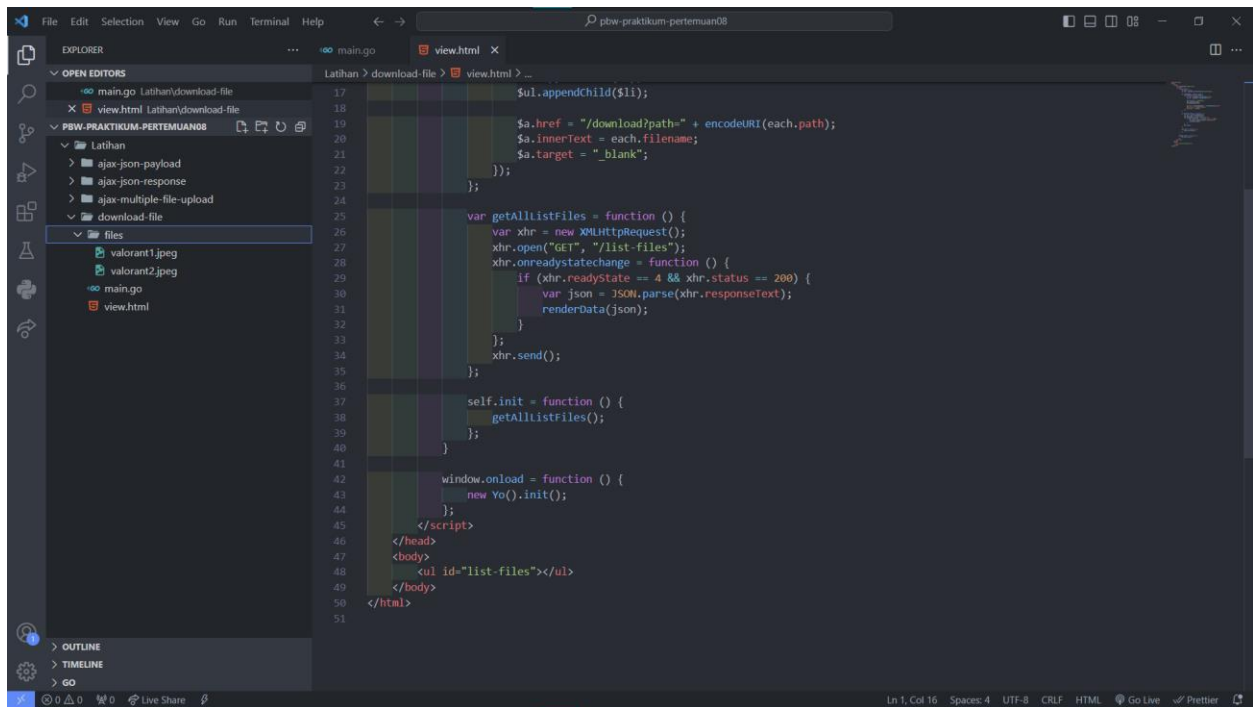


```
43
44
45     files = append(files, M{"filename": info.Name(), "path": path})
46
47     return nil
48 }
49
50 if err != nil {
51     http.Error(w, err.Error(), http.StatusInternalServerError)
52     return
53 }
54
55 res, err := json.Marshal(files)
56 if err != nil {
57     http.Error(w, err.Error(), http.StatusInternalServerError)
58     return
59 }
60
61 w.Header().Set("Content-Type", "application/json")
62 w.Write(res)
63 }
64
65 func handleDownload(w http.ResponseWriter, r *http.Request) {
66     if err := r.ParseForm(); err != nil {
67         http.Error(w, err.Error(), http.StatusInternalServerError)
68         return
69     }
70
71     path := r.FormValue("path")
72     f, err := os.Open(path)
73     if f != nil {
74         defer f.Close()
75     }
76
77     if err != nil {
78         http.Error(w, err.Error(), http.StatusInternalServerError)
79         return
80     }
81
82     contentDisposition := fmt.Sprintf("attachment; filename=%s", f.Name())
83     w.Header().Set("Content-Disposition", contentDisposition)
84
85     if _, err := io.Copy(w, f); err != nil {
86         http.Error(w, err.Error(), http.StatusInternalServerError)
87         return
88     }
89 }
```


Screenshot Source Code: *view.html*

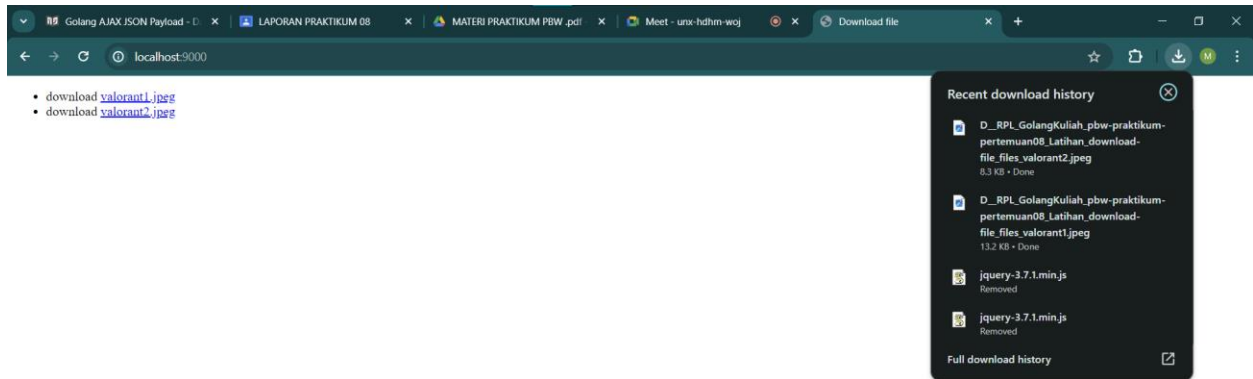


```
1 <!DOCTYPE html>
2 <html>
3
4   <head>
5     <title>Download file</title>
6     <script>
7       function Yo() {
8         var self = this;
9         var $ul = document.getElementById("list-files");
10
11         var renderData = function (res) {
12           res.forEach(function (each) {
13             var $li = document.createElement("li");
14             var $a = document.createElement("a");
15
16             $li.innerText = "download ";
17             $li.appendChild($a);
18             $ul.appendChild($li);
19
20             $a.href = "/download?path=" + encodeURIComponent(each.path);
21             $a.innerText = each.filename;
22             $a.target = "_blank";
23           });
24         };
25
26         var getAllListFiles = function () {
27           var xhr = new XMLHttpRequest();
28           xhr.open("GET", "/list-files");
29           xhr.onreadystatechange = function () {
30             if (xhr.readyState == 4 && xhr.status == 200) {
31               var json = JSON.parse(xhr.responseText);
32               renderData(json);
33             }
34           };
35           xhr.send();
36         };
37
38         self.init = function () {
39           getAllListFiles();
40         };
41       };
42     </script>
43   </head>
44   <body>
45     <ul id="list-files"></ul>
46   </body>
47 </html>
```



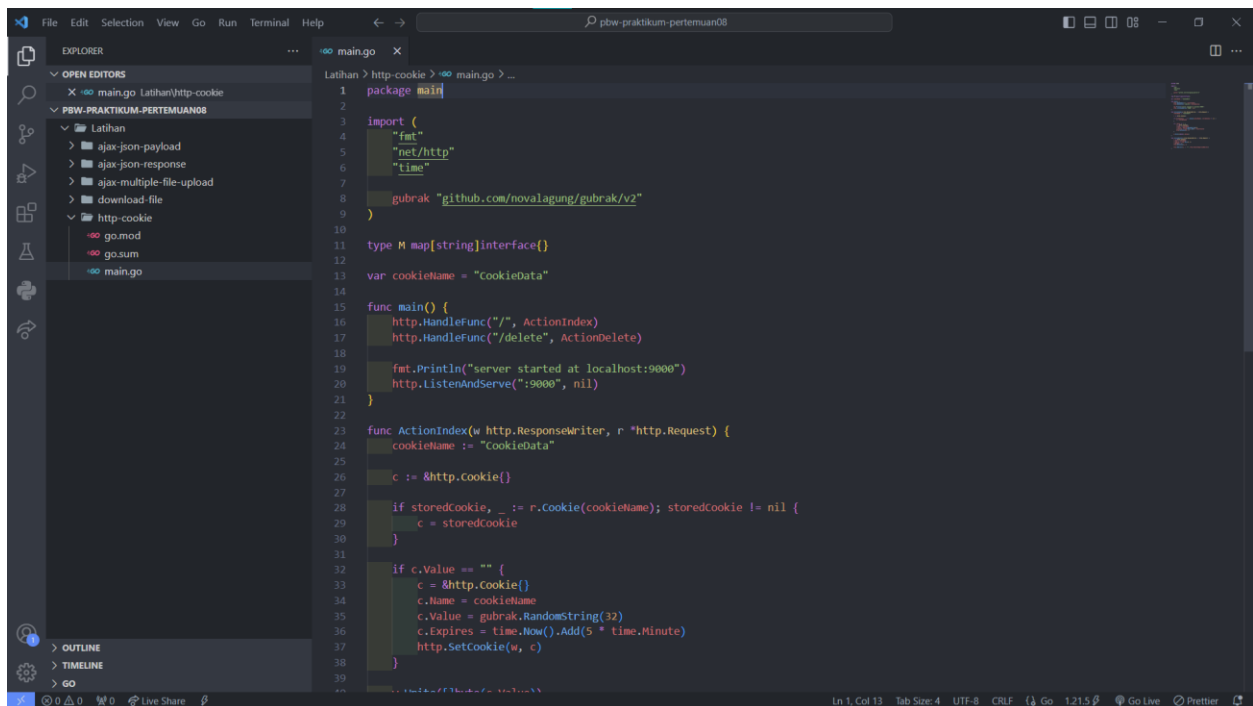
```
17 $ul.appendChild($li);
18
19 $a.href = "/download?path=" + encodeURIComponent(each.path);
20 $a.innerText = each.filename;
21 $a.target = "_blank";
22 });
23 };
24
25 var getAllListFiles = function () {
26   var xhr = new XMLHttpRequest();
27   xhr.open("GET", "/list-files");
28   xhr.onreadystatechange = function () {
29     if (xhr.readyState == 4 && xhr.status == 200) {
30       var json = JSON.parse(xhr.responseText);
31       renderData(json);
32     }
33   };
34   xhr.send();
35 };
36
37 self.init = function () {
38   getAllListFiles();
39 };
40
41
42 window.onload = function () {
43   new Yo().init();
44 };
45 </script>
46 </head>
47 <body>
48   <ul id="list-files"></ul>
49 </body>
50 </html>
```

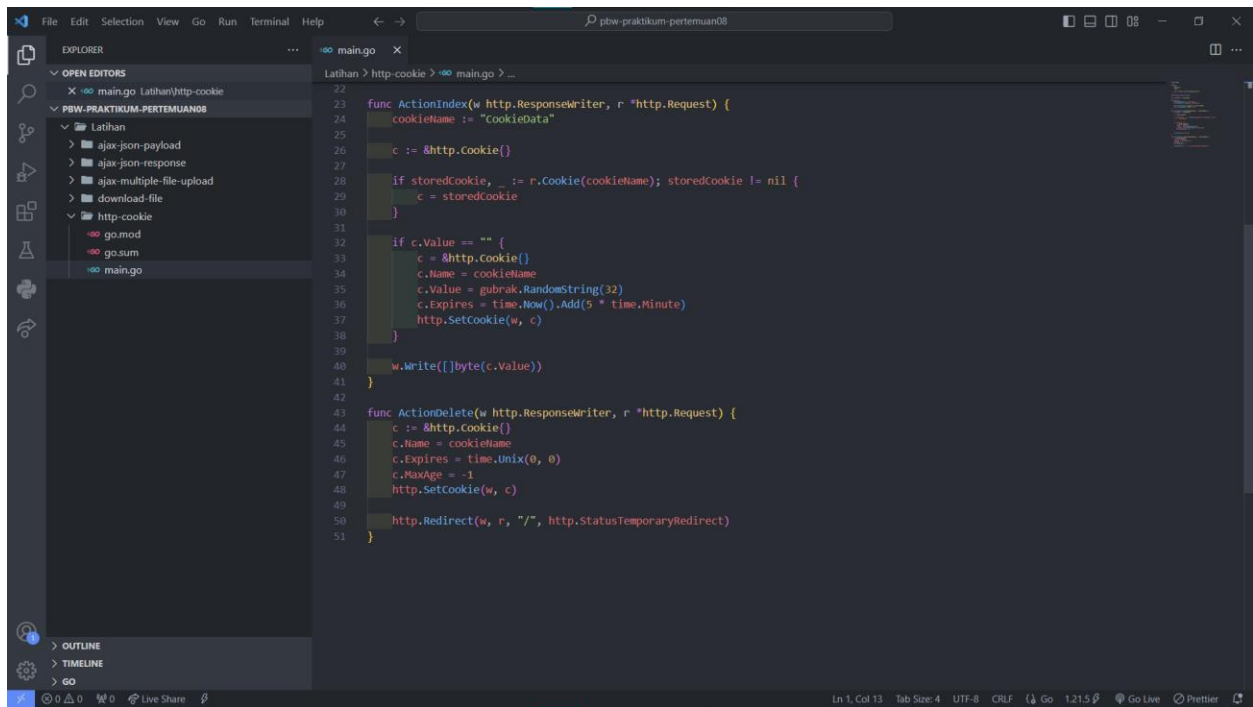
Screenshot Output



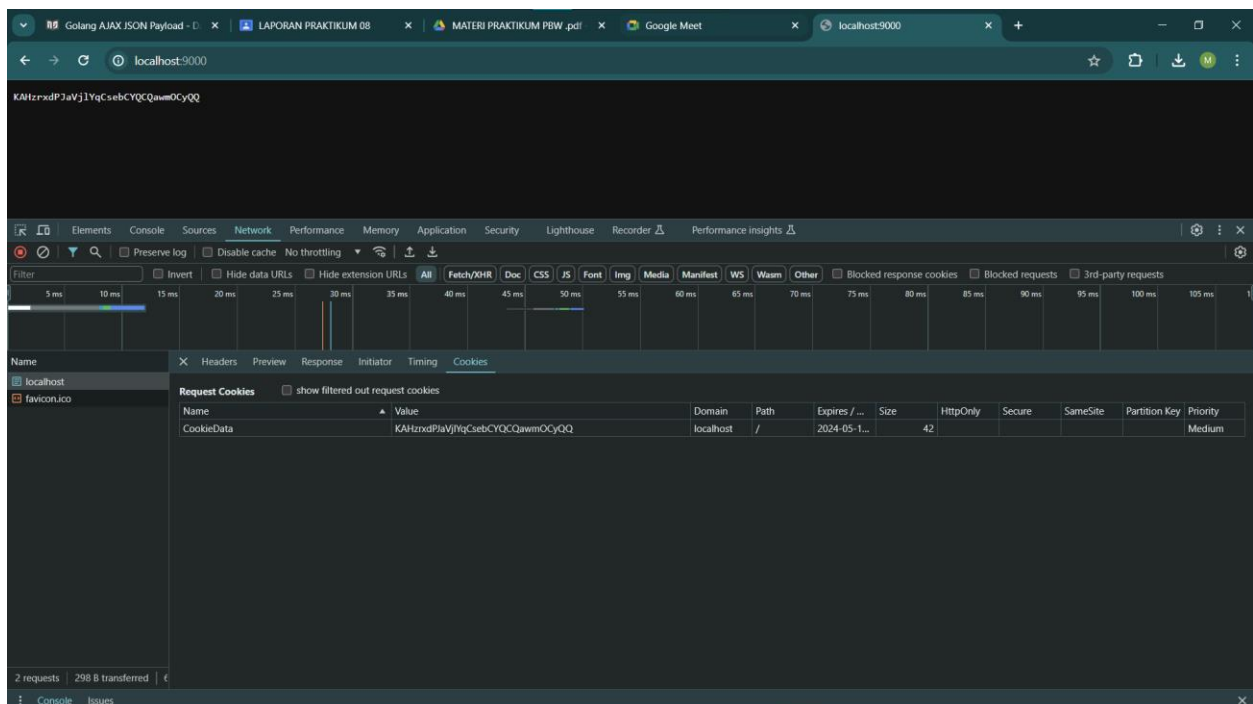
Screenshot Latihan 5 (HTTP Cookie)

Screenshot Source Code





Screenshot Output



Browser tabs: Golang AJAX JSON Payload - D..., LAPORAN PRAKTIKUM 08, MATERI PRAKTIKUM PBW .pdf, Google Meet, localhost:9000

Address bar: localhost:9000

Page content: VKNMygLYNiagmQLagGaLYAYGeuy5gFBj

Network tab: Filter, Invert, Hide data URLs, Hide extension URLs, All, Fetch/XHR, Doc, CSS, JS, Font, Img, Media, Manifest, WS, Wasm, Other, Blocked response cookies, Blocked requests, 3rd-party requests

Timeline: 5 ms, 10 ms, 15 ms, 20 ms, 25 ms, 30 ms, 35 ms, 40 ms, 45 ms, 50 ms, 55 ms, 60 ms, 65 ms, 70 ms, 75 ms, 80 ms, 85 ms, 90 ms, 95 ms, 100 ms, 105 ms, 110 ms

Request Cookies

| Name | Value | Domain | Path | Expires / ... | Size | HttpOnly | Secure | SameSite | Partition Key | Priority |
|------------|--------------------------------|-----------|------|---------------|------|----------|--------|----------|---------------|----------|
| CookieData | KAHzxdPJaVjYqCsebcYQCQawmOCyCQ | localhost | / | 2024-05-1... | 42 | | | | | Medium |

Response Cookies

| Name | Value | Domain | Path | Expires / ... | Size | HttpOnly | Secure | SameSite | Partition Key | Priority |
|------------|-------|-----------|------|---------------|------|----------|--------|----------|---------------|----------|
| CookieData | | localhost | | 0 | 61 | | | | | Medium |

3 requests | 614 B transferred |

Console Issues

Browser tabs: Golang AJAX JSON Payload - D..., LAPORAN PRAKTIKUM 08, MATERI PRAKTIKUM PBW .pdf, Google Meet, localhost:9000

Address bar: localhost:9000

Page content: VKNMygLYNiagmQLagGaLYAYGeuy5gFBj

Network tab: Filter, Invert, Hide data URLs, Hide extension URLs, All, Fetch/XHR, Doc, CSS, JS, Font, Img, Media, Manifest, WS, Wasm, Other, Blocked response cookies, Blocked requests, 3rd-party requests

Timeline: 5 ms, 10 ms, 15 ms, 20 ms, 25 ms, 30 ms, 35 ms, 40 ms, 45 ms, 50 ms, 55 ms, 60 ms, 65 ms, 70 ms, 75 ms, 80 ms, 85 ms, 90 ms, 95 ms, 100 ms, 105 ms, 110 ms

Request Cookies

| Name | Value | Domain | Path | Expires / ... | Size | HttpOnly | Secure | SameSite | Partition Key | Priority |
|------------|---------------------------------|-----------|------|---------------|------|----------|--------|----------|---------------|----------|
| CookieData | VKNMgLYNiagmQLagGaLYAYGeuy5gFBj | localhost | | 2024-05-1... | 82 | | | | | Medium |

Response Cookies

| Name | Value | Domain | Path | Expires / ... | Size | HttpOnly | Secure | SameSite | Partition Key | Priority |
|------------|-------|-----------|------|---------------|------|----------|--------|----------|---------------|----------|
| CookieData | | localhost | | | | | | | | |

3 requests | 614 B transferred |

Console Issues

Soal dan Jawaban

1. Apa itu AJAX?

AJAX (Asynchronous JavaScript and XML) adalah teknik untuk membuat permintaan HTTP secara asinkron tanpa harus me-refresh halaman web. sehingga memungkinkan halaman web memperbarui data secara dinamis.

2. Apa itu JSON? Apa Kegunaannya?

JSON (JavaScript Object Notation) adalah format data yang digunakan untuk pertukaran data. JSON mudah dibaca dan ditulis oleh manusia dan mesin serta mempunyai kegunaan seperti mentransfer data antara server dan aplikasi web.

3. Apa itu ParseMultipartForm dan MultipartReader? Jelaskan Perbedaannya!

ParseMultipartForm adalah fungsi di Go yang digunakan untuk mengurai data form multipart dari permintaan HTTP. Digunakan untuk mengurai dan menyimpan semua bagian dari data multipart sekaligus.

MultipartReader adalah Objek di Go yang digunakan untuk membaca data multipart secara bertahap. Digunakan untuk membaca bagian data multipart satu per satu.

4. Apa itu JavaScript? Jelaskan Kegunaannya dalam Frontend!

JavaScript adalah bahasa pemrograman yang digunakan untuk membuat konten web interaktif. Dalam frontend, JavaScript digunakan untuk memanipulasi HTML dan CSS, menangani event, dan membuat aplikasi web dinamis.

5. Jelaskan Apa Itu EventHandler!

EventHandler adalah fungsi atau blok kode yang dijalankan sebagai respons terhadap suatu event, seperti klik tombol atau pengisian formulir. EventHandler digunakan untuk menangani interaksi pengguna dengan aplikasi web.

Upload ke Github

```
MINGW64/d/RPL/GolangKuliah/pbw-praktikum-pertemuan08
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <files>..." to unstage)
    new file:   Latihan/ajax-json-payload/assets/jquery-3.7.1.min.js
    new file:   Latihan/ajax-json-payload/main.go
    new file:   Latihan/ajax-json-payload/view.html
    new file:   Latihan/ajax-json-response/main.go
    new file:   Latihan/ajax-multiple-file-upload/assets/jquery-3.7.1.min.js
    new file:   Latihan/ajax-multiple-file-upload/files/valorant 1.jpeg
    new file:   Latihan/ajax-multiple-file-upload/files/valorant 2.jpeg
    new file:   Latihan/ajax-multiple-file-upload/files/valorant 3.png
    new file:   Latihan/ajax-multiple-file-upload/files/valorant 4.jpeg
    new file:   Latihan/ajax-multiple-file-upload/files/valorant 5.png
    new file:   Latihan/ajax-multiple-file-upload/main.go
    new file:   Latihan/ajax-multiple-file-upload/view.html
    new file:   Latihan/download-file/files/valorant1.jpeg
    new file:   Latihan/download-file/files/valorant2.jpeg
    new file:   Latihan/download-file/main.go
    new file:   Latihan/download-file/view.html
    new file:   Latihan/http-cookie/go.mod
    new file:   Latihan/http-cookie/go.sum
    new file:   Latihan/http-cookie/main.go

muhamdlaptop-CSP00KWN MINGW64 /d/RPL/GolangKuliah/pbw-praktikum-pertemuan08 (master)
$ git commit -m "Laporan Praktikum Latihan 08"
[master calb09a] Laporan Praktikum Latihan 08
19 files changed, 472 insertions(+),
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-json-payload/assets/jquery-3.7.1.min.js
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-json-payload/main.go
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-json-payload/view.html
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-json-response/main.go
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-multiple-file-upload/assets/jquery-3.7.1.min.js
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-multiple-file-upload/files/valorant 1.jpeg
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-multiple-file-upload/files/valorant 2.jpeg
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-multiple-file-upload/files/valorant 3.png
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-multiple-file-upload/files/valorant 4.jpeg
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-multiple-file-upload/files/valorant 5.png
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-multiple-file-upload/main.go
create mode 100644 pbw-praktikum-pertemuan08/Latihan/ajax-multiple-file-upload/view.html
create mode 100644 pbw-praktikum-pertemuan08/Latihan/download-file/files/valorant1.jpeg
create mode 100644 pbw-praktikum-pertemuan08/Latihan/download-file/files/valorant2.jpeg
create mode 100644 pbw-praktikum-pertemuan08/Latihan/download-file/main.go
create mode 100644 pbw-praktikum-pertemuan08/Latihan/download-file/view.html
create mode 100644 pbw-praktikum-pertemuan08/Latihan/http-cookie/go.mod
create mode 100644 pbw-praktikum-pertemuan08/Latihan/http-cookie/go.sum
create mode 100644 pbw-praktikum-pertemuan08/Latihan/http-cookie/main.go

muhamdlaptop-CSP00KWN MINGW64 /d/RPL/GolangKuliah/pbw-praktikum-pertemuan08 (master)
$ git push -u origin master
Enumerating objects: 29, done.
Counting objects: 100% (29/29), done.
Delta compression using up to 12 threads
Compressing objects: 100% (25/25), done.
Writing objects: 100% (28/28), 79.02 KiB | 4.16 MiB/s, done.
Total 28 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
To https://github.com/hotraa/pbw.git
 957a1c1..calb09a master -> master
branch 'master' set up to track 'origin/master'.
```