

LAPORAN PRAKTIKUM

MATA KULIAH PRAKTIKUM PEMROGRAMAN JARINGAN

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KELAS : D5

PRAKTIKUM KE 5

```
Leri > jwt.php
1  <?php
2  $header = ['typ' => 'JWT', 'alg' => 'HS256'];
3  $payload = [
4      'sub' => 3,
5      'name' => 'Leri',
6      'role' => 'admin',
7      'iat' => time(),
8      'exp' => time() + 100
9  ];
10
11 $secret = 'password_hash_leri_99_numerik_api';
12
13 function base64UrlEncode($data) {
14     return rtrim(strtr(base64_encode($data), '+/_', '-_'), '=');
15 }
16
17 $header64 = base64UrlEncode(json_encode($header));
18 $payload64 = base64UrlEncode(json_encode($payload));
19 $signature = base64UrlEncode(hash_hmac('sha256', "$header64.$payload64", $secret, true));
20
21 $jwt = "$header64.$payload64.$signature";
22 echo $jwt;
```

The screenshot shows the MySQL Workbench interface. On the left, the 'Environment' sidebar lists databases: 'Recent', 'Favorites', 'Flows', 'History', and several system databases like 'information_schema', 'mysql', 'performance_schema', 'perpus_leri_db', 'produk_db', and 'sys'. A connection named 'apiphp' is selected, and its schema tree shows a single table named 'users'. The main pane displays the results of a query: 'Showing rows 0 - 1 (2 total, Query took 0.0006 seconds.)'. The SQL query is: 'SELECT * FROM `users`'. Below the results, there are buttons for 'Edit', 'Copy', 'Delete', 'Check all', 'With selected...', 'Edit', 'Copy', 'Delete', and 'Export'. At the bottom, there are buttons for 'Show all', 'Number of rows: 25', 'Filter rows: Search this table', 'Sort by key: None', and 'Query results operations'.

	id	name	email	password_hash	role	created_at
<input type="checkbox"/>	1	Admin	admin@example.com	\$2y\$10\$F4C9bQ0Z1m0b2d7dHl3GJe4d0F1K0v8a0h2u0YQvGk0...	admin	2025-10-29 08:56:26
<input type="checkbox"/>	3	Leri	Leri@example.com	\$2y\$10\$9oHEVtM.KH12.inaleqnmuXIOBDqECuolbJcO6x7p8j...	admin	2025-10-29 08:56:26

Overview | GET Untitled Request | GET Get data | + | No environment | ▾

HTTP My Collection / Get data | Save | Share |

GET <http://localhost/api-php-native/Leri/jwt.php> | Send

Params Authorization Headers (7) Body Scripts • Settings Cookies

Query Params

	Key	Value	Description	Bulk Edit
	Key	Value	Description	

Body Cookies Headers (7) Test Results (1/1) |

200 OK | 5 ms | 433 B | Save Response |

HTML | Preview | Visualize |

```

1 eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.
eyJzdWIiOiJMsIm5hbWUiOiJMXjIiwicm9sZSI6ImFkbWluIiwiaWF0IjoxNzYxODI1NDI4LCJleHAiOjE3NjE4MjU1Mjh9.
wMKmZB7z0M6Cewqs2JsD3PUrXvRtfQ-k4uDwt0J5ZpA

```

EXPLORER

- API-PHP...
- Leri
 - config
 - env.php
 - logs
 - public
 - .htaccess
 - index.php
 - src
 - Config
 - Database.php
 - Controllers
 - AuthController.php
 - BaseController.php
 - HealthController.php
 - UserController.php
 - VersionController.php
 - Helpers
 - Middlewares
 - Repositories
 - Validation
 - api-contract.php
 - composer.json
 - jwt.php
 - README.md

```

Leri > jwt.php
1 <?php
2 // JWT.php - Generate dan Verifikasi Token JWT
3 header('Content-Type: application/json');
4
5 // ===== KONFIGURASI =====
6 $secret = 'password_hash_lieri_99_numerik_api';
7 $token_ttl_seconds = 60; // 1 menit = 60 detik
8
9 // ===== FUNGSI BANTU =====
10 function base64UrlEncode($data) {
11   return rtrim(strtr(base64_encode($data), '+/','-_.'), '=');
12 }
13 function base64UrlDecode($data) {
14   $remainder = strlen($data) % 4;
15   if ($remainder) $data .= str_repeat('=', 4 - $remainder);
16   return base64_decode(strtr($data, '-_.', '+/'));
17 }
18 function getAuthorizationHeader() {
19   if (function_exists('getallheaders')) {
20     $headers = getallheaders();
21     foreach ($headers as $k => $v) {
22       if (strtolower($k) === 'authorization') return $v;
23     }
24   }
25   if (!empty($_SERVER['HTTP_AUTHORIZATION'])) return $_SERVER['HTTP_AUTHORIZATION'];
26   if (!empty($_SERVER['REDIRECT_HTTP_AUTHORIZATION'])) return $_SERVER['REDIRECT_HTTP_AUTHORIZATION'];
27   return null;
28 }
29 function json_response($data, $code = 200) {
30   http_response_code($code);
31   echo json_encode($data, JSON_UNESCAPED_UNICODE | JSON_UNESCAPED_SLASHES);
32   exit;
33 }

```

```

35 // ===== CEK APAKAH ADA TOKEN DI HEADER =====
36 $authHeader = getAuthorizationHeader();
37
38 // Jika ADA token (verifikasi)
39 if ($authHeader) {
40     if (!preg_match('/Bearer\s(\S+)/i', $authHeader, $matches)) {
41         json_response(['status' => 'error', 'message' => 'Format Authorization salah (gunakan Bearer <token>)'], 400);
42     }
43     $jwt = $matches[1];
44
45     // Pisah token
46     $parts = explode('.', $jwt);
47     if (count($parts) != 3) {
48         json_response(['status' => 'error', 'message' => 'Format token tidak valid'], 400);
49     }
50
51     list($header64, $payload64, $signatureProvided) = $parts;
52
53     // Buat ulang signature
54     $expected = rtrim(strtr(base64_encode(hash_hmac('sha256', "$header64.$payload64", $secret, true)), '+/-' , '_'), '=');
55
56     // Cek signature
57     if (!hash_equals($expected, $signatureProvided)) {
58         json_response(['status' => 'error', 'message' => 'Signature token tidak valid'], 401);
59     }
60
61     // Decode payload
62     $payload = json_decode(base64UrlDecode($payload64), true);
63     if (!is_array($payload)) {
64         json_response(['status' => 'error', 'message' => 'Payload tidak bisa dibaca'], 400);
65     }
66
67     // Cek waktu kadaluarsa
68     if (!isset($payload['exp'])) {
69         json_response(['status' => 'error', 'message' => 'Token tidak memiliki waktu kadaluarsa (exp)'], 400);
70     }
71

```

Leri > jwt.php

```

39 if ($authHeader) {
40     if ($payload['exp'] < time()) {
41         json_response([
42             'status' => 'expired',
43             'message' => 'Token Anda sudah kadaluarsa, silahkan Generate Ulang!',
44             'expired_at' => date('Y-m-d H:i:s', $payload['exp']),
45             'now' => date('Y-m-d H:i:s')
46         ], 401);
47
48     // Kalau semua valid
49     json_response([
50         'status' => 'valid',
51         'message' => 'Token Anda masih berlaku saat Ini!',
52         'payload' => $payload,
53         'expires_in_seconds' => $payload['exp'] - time(),
54         'expired_at' => date('Y-m-d H:i:s', $payload['exp']),
55         'now' => date('Y-m-d H:i:s')
56     ]);
57
58 }
59
60 // ===== JIKA TIDAK ADA TOKEN (Generate token baru) =====
61 $header = ['typ' => 'JWT', 'alg' => 'HS256'];
62 $payload = [
63     'sub' => 3,
64     'name' => 'Leri',
65     'role' => 'admin',
66     'iat' => time(),
67     'exp' => time() + $token_ttl_seconds
68 ];
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```

```

102 $header64 = base64UrlEncode(json_encode($header));
103 $payload64 = base64UrlEncode(json_encode($payload));
104 $signature = rtrim(strtr(base64_encode(hash_hmac('sha256', "$header64.$payload64", $secret, true)), '+/-.'), '=');
105 $jwt = "$header64.$payload64.$signature";
106
107 // kirim token
108 json_response([
109     'status' => 'token_generated',
110     'token' => $jwt,
111     'payload' => $payload,
112     'expired_at' => date('Y-m-d H:i:s', $payload['exp'])
113 ]);

```

HTTP My Collection / Get data

Save Share ↗

GET http://localhost/api-php-native/Leri/jwt.php Send

Params Authorization Headers (7) Body Scripts Settings Cookies

Auth Type

No Auth

No Auth

This request does not use any authorization. ⓘ

Body Cookies Headers (7) Test Results (1/1) ⏱ 200 OK 4 ms 582 B ⓘ Save Response ⚡

{ JSON Preview Visualize

```

1 {
2     "status": "token_generated",
3     "token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.
4         eyJzdWIiOiMsIm5hbWUiOjMZXJpIiwicm9sZSI6ImFkbWluIiwiWF0IjoxNzYxODQxNzM2LCJleHAiOjE3NjE4NDE3OTZ9.
5         H0ByZD9GRZQTZX3xQotUSe3naehsc0eLZ5beJbBzJJ4",
6     "payload": {
7         "sub": 3,
8         "name": "Lexi",
9         "role": "admin",
10        "iat": 1761841736,
11        "exp": 1761841796
12    },
13    "expired_at": "2025-10-30 16:29:56"
14 }

```

Runner Start Proxy Cookies Vault Trash

HTTP My Collection / Get data

Save Share

GET http://localhost/api-php-native/Leri/jwt.php

Send

Params Authorization • Headers (8) Body Scripts • Settings Cookies

Auth Type Bearer Token Token

The authorization header will be automatically generated when you send the request. Learn more about Bearer Token authorization.

Body Cookies Headers (7) Test Results (1/1) 41

200 OK 5 ms 467 B Save Response

{ } JSON Preview Visualize

```
1 {  
2   "status": "valid",  
3   "message": "Token masih berlaku",  
4   "payload": {  
5     "sub": 3,  
6     "name": "Lexi",  
7     "role": "admin",  
8     "iat": 1761841736,  
9     "exp": 1761841796  
10    },  
11    "expires_in_seconds": 3,  
12    "expired_at": "2025-10-30 16:29:56",  
13    "now": "2025-10-30 16:29:53"  
14  }
```

Runner Start Proxy Cookies Vault Trash

HTTP My Collection / Get data

Save Share

GET http://localhost/api-php-native/Leri/jwt.php

Send

Actions Params Authorization • Headers (8) Body Scripts • Settings Cookies

Auth Type Bearer Token Token

The authorization header will be automatically generated when you send the request. Learn more about Bearer Token authorization.

Body Cookies Headers (7) Test Results (0/1) 41

401 Unauthorized 4 ms 376 B Save Response

{ } JSON Preview Debug with AI

```
1 {  
2   "status": "expired",  
3   "message": "Token sudah kadaluarsa",  
4   "expired_at": "2025-10-30 16:29:56",  
5   "now": "2025-10-30 16:30:28"  
6 }
```