

Membangun Web Service dengan PHP

Husni

Framework Pengembangan Web Service

- SOAP:
 - *WSO2 Web Service Framework for PHP (WSF/PHP)*
 - NuSOAP

- REST:
 - No Framework
 - Laravel
 - CodeIgniter
 - Flight PHP
 - Slim

Contoh SOAP: Server

```
<?php
// server.php
class MyService
{
    public function add($x, $y)
    {
        return $x + $y;
    }
}

$options = array(
    'uri' => 'http://server/namespace',
    'location' => 'http://server/location',
);

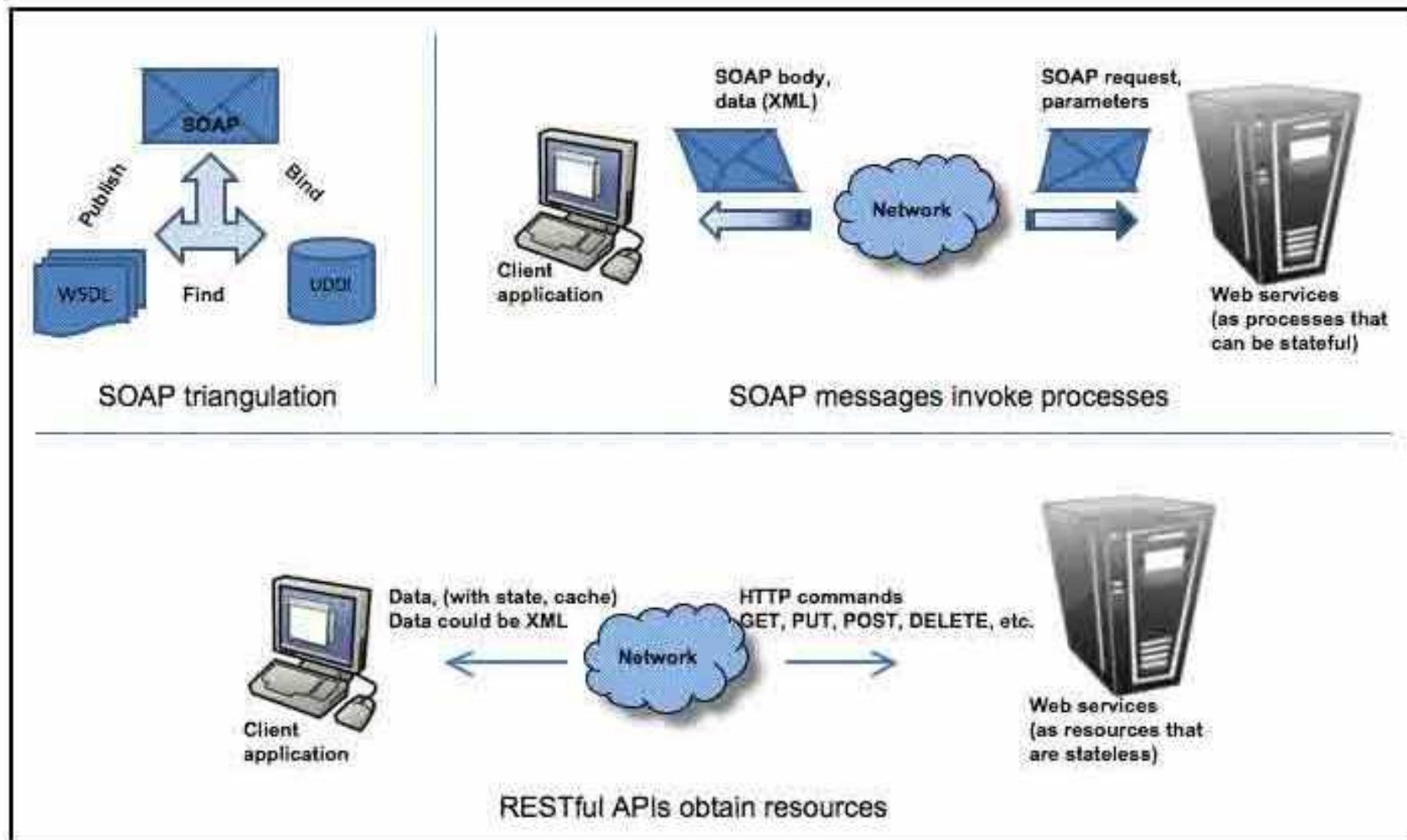
$server = new SOAPServer(null, $options);
$server->setObject(new MyService());
$server->handle();
```

Contoh SOAP: Client

- Client menjalankan perintah atau fungsi yang terdapat di server
- Mirip dengan Remote Procedure Call (RPC)

```
<?php
// client.php
$options = array(
    'uri' => 'http://server/namespace',
    'location' => 'http://server/location',
);
$client = new SOAPClient(null, $options);
echo $client->add(10, 10);
```

SOAP vs. REST




Web Service Sederhana: index.php

```
1 <?php
2
3 include('connectdb.php');
4
5 $something = $_GET['s'];
6 $sqlcode = mysqli_query($con, "Select $something from tb_01 limit 5");
7
8 $jsonObj= array();
9 while($result = mysqli_fetch_object($sqlcode))
10 {
11     $jsonObj[] = $result;
12 }
13
14 $final_res =json_encode($jsonObj) ;
15 echo $final_res;
16
17 ?>
```

Web Service Sederhana: connectdb.php

```
1 <?php
2     $hostname="localhost";
3     $username="root";    //username
4     $password="";      //password
5     $db_name="db_ws";  //nama database
6     $con = mysqli_connect($hostname, $username, $password);
7     mysqli_select_db($con, $db_name) or die ("Cannot connect the Database");
8     mysqli_query($con, "SET NAMES 'utf8'");
9 ?>
```

#	Name	Type	Collation	Attributes	Null	Default	Extra
1	Id 	int(11)			No	None	AUTO_INCREMENT
2	Nama	varchar(50)			No	None	
3	Email	varchar(50)			No	None	
4	Telp	varchar(20)			No	None	

Database: db_ws
Tabel: tb_01

Mengakses Web Service: readws.php

```
1 <?php
2     $jsonObj = file_get_contents('http://localhost/ws0/?s>Nama');
3     $final_res = json_decode($jsonObj, true) ;
4     var_dump( $final_res );
5 ?>
```



```
array(2) { [0]=> array(1) { ["Nama"]=> string(5) "Husni" } [1]=> array(1) { ["Nama"]=> string(6) "Nafisa" } }
```


Mengakses Web Service dari Android:

UserFunctions.java

```
1 import java.util.ArrayList;
2 import java.util.List;
3 import org.apache.http.NameValuePair;
4 import org.apache.http.message.BasicNameValuePair;
5 import org.json.JSONObject;
6
7     /* function make webservice Request
8     @param myparameter */
9     public JSONObject loginUser(String myparameter){
10         String webserviceURL = "http://localhost/ws0/";
11         JSONParser jsonParser = new JSONParser();
12         // Building Parameters
13         List params = new ArrayList();
14         params.add(new BasicNameValuePair("s", myparameter));
15         JSONObject json = jsonParser.getJSONFromUrl(webserviceURL, params);
16         // return json
17         // Log.e("JSON", json.toString());
18         return json;
19     }
```

Contoh Server REST: ws01.php

```
$from = $_GET['from'];  
$to = $_GET['to'];  
  
/* 1 rupiah = ? */  
$dataCurr['ID']['US'] = '13500';  
$dataCurr['ID']['JP'] = '1200';  
$dataCurr['ID']['AU'] = '10000';  
$dataCurr['ID']['SG'] = '6700';  
  
$data['from'] = $from;  
$data['to'] = $to;  
$data['value'] = $dataCurr[$from][$to];  
$data['status'] = 'success';  
  
$dataJson = json_encode($data);  
  
echo $dataJson;
```

Contoh Client REST: client01.php

```
$json = file_get_contents('http://url_server/ws01.php?from=ID&to=US');  
$data = json_decode($json);  
  
if($data->status == 'success') {  
    echo 'DARI MATA UANG ' . $data->from;  
    echo 'KE MATA UANG ' . $data->to;  
    echo 'NILAI TUKAR ' . $data->value;  
}
```



Integrasi 2 Aplikasi

- Aplikasi A (di mesin 192.168.1.1) menyimpan data login setiap pengguna, data ini boleh dimanfaatkan oleh aplikasi lain yang diijinkan.
- Aplikasi B (di mesin 192.168.2.2) menyediakan halaman login untuk penggunanya. Aplikasi ini memeriksa data pengguna di Server A (data pengguna tidak dipegang oleh Aplikasi B)
- Pendekatan ini yang sedang trend saat ini. Akun google, twitter dan facebook dapat digunakan untuk login ke berbagai layanan yang berjalan di Internet.

Data di Aplikasi A (Mesin 192.168.1.1)

```
//nama database: db_crossuser
```

```
CREATE TABLE `tb_user` (  
  `username` varchar(20),  
  `password` varchar(20),  
  PRIMARY KEY (`username`)  
)
```

```
INSERT INTO `user` VALUES ('user1', 'password1');  
INSERT INTO `user` VALUES ('user2', 'password2');
```

Layanan Pengecekan Username & Password

WScckpassword.php

```
// koneksi ke database di sistem A
mysql_connect("dbhost", "dbuser", "dbpass");
mysql_select_db("dbname");

// membaca username dan password dari GET request
$user = $_GET['username'];
$pass = $_GET['password'];

// membaca data password user berdasar usernamenya
$query = "SELECT * FROM user WHERE username = '$user'";
$hasil = mysql_query($query);
$data = mysql_fetch_array($hasil);
$password = $data['password'];

// mencocokkan password user dari db dan dari GET request
// jika cocok, maka responnya TRUE, jika tidak cocok responnya FALSE
if ($pass == $password) $response = "TRUE";
else $response = "FALSE";

// membuat header dokumen XML
header('Content-Type: text/xml');
echo "<?xml version='1.0'?>";

// membuat tag data respon pada dokumen XML
echo "<data>";
echo "<response>".$response."</response>";
echo "</data>";
```

Aplikasi B

- Berjalan pada mesin 192.168.2.2
- Menyediakan layanan login, cek di aplikasi B, jika username & password cocok → login berhasil.

```
<h1>Form Login</h1>

<form method="post" action="login.php">
<table>
  <tr><td>Username</td><td><input type="text" name="username"></td></tr>
  <tr><td>Password</td><td><input type="password" name="password"></td></tr>
  <tr><td></td><td><input type="submit" name="submit" value="Submit"></td></tr>
</form>
```

Aplikasi B: Login.php

```
// membaca username dan password dari form login
$username = $_POST['username'];
$password = $_POST['password'];

// membuat URL GET request ke server A
$url = "http://server_A/wscekpassword.php?username=" . $username . "&password=" . $password;

// mengirim GET request ke server A dan membaca respon XML dari server A
$bacaxml = simplexml_load_file($url);

// membaca data XML hasil dari respon server A
foreach($bacaxml->response as $respon)
{
    // jika responnya TRUE maka login sukses
    // jika FALSE maka login gagal
    if ($respon == "TRUE") echo "Login Sukses";
    else if ($respon == "FALSE") echo "Login Gagal";
}
```


Aplikasi A Cek Kode API Consumer

```
// membaca username, password & kode API dari GET request
$user = $_GET['username'];
$pass = $_GET['password'];
$api = $_GET['api'];

// jika kode API nya '1234' maka lakukan proses validasi username dan password
// jika kode API nya salah, maka proses validasi tidak dilakukan (diberikan respon "FALSE")
if ($api == "1234")
{
    // membaca data password user berdasar usernamenya
    $query = "SELECT * FROM user WHERE username = '$user'";
    $hasil = mysql_query($query);
    $data = mysql_fetch_array($hasil);
    $password = $data['password'];

    // mencocokkan password user dari db dan dari GET request
    // jika cocok, maka responnya TRUE, jika tidak cocok responnya FALSE
    if ($pass == $password) $response = "TRUE";
    else $response = "FALSE";
}
else $response = "FALSE";
```

Aplikasi B mendapatkan Kode API "1234"

```
// membaca username & password dari form login
$username = $_POST['username'];
$password = $_POST['password'];

// membuat URL GET request ke server A
$url = "http://server_A/wscekpassworddgnkey.php?username="
      . $username . "&password=" . $password . "&api=1234";

// mengirim GET request ke server A dan membaca respon XML dari server A
$bacaxml = simplexml_load_file($url);

// membaca data XML hasil dari respon server A
foreach($bacaxml->response as $respon)
{
    // jika responnya TRUE maka login sukses
    // jika FALSE maka login gagal
    if ($respon == "TRUE") echo "Login Sukses";
    else if ($respon == "FALSE") echo "Login Gagal";
}
```

Contoh Login Antar Server (lagi)

Server B menyediakan layanan login, data user di server A

Database db_ws01

- Tabel tb_user
 - CREATE TABLE user (
 email varchar(100) NOT NULL,
 name varchar(100),
 password varchar(200),
 PRIMARY KEY (email)
)
- 2 record data awal:
 - INSERT INTO tb_user (email, name, password)
VALUES ('lunix96@gmail.com', 'Husni Ilyas', '21232f297a57a5a743894a0e4a801fc3');
 - INSERT INTO tb_user (email, name, password)
VALUES ('azzam@altaf.com', 'Azzam Altaf', ' fe01ce2a7fbac8fafaed7c982a04e229');
 - 21232f297a57a5a743894a0e4a801fc3 = admin
 - fe01ce2a7fbac8fafaed7c982a04e229 = demo

Web Service api.php di Server A

```
1. <?php
2. //Koneksi ke database
3. mysql_connect("localhost", "root", "") or die(mysql_error());
4. mysql_select_db("test") or die(mysql_error());
5.
6. //cek email & passwordnya
7. $email = $_POST['email'];
8. $password = $_POST['password'];
9.
10. $Q = mysql_query("SELECT * FROM user WHERE email='$email'
11.                AND PASSWORD='$password'") or die(mysql_error());
12. if($Q){
13.     $posts = array();
14.     if(mysql_num_rows($Q)) {
15.         while($post = mysql_fetch_assoc($Q)){ $posts[] = $post; }
16.     }
17.     echo json_encode(array('user'=>$posts));
18. }
19. ?>
```

Server A: Formlogin.php

1. `<form class="form-signin" action="" method="post">`
2. `<h2 class="form-signin-heading">Please sign in</h2>`
3. `<input type="text" class="input-block-level" name="email" placeholder="Email address">`
4. `<input type="password" class="input-block-level" name="password" placeholder="Password">`
5. `<button class="btn btn-large btn-primary" type="submit">Sign in</button>`
6. `</form>`

Server B: Login.php

```
1. <?php
2. function doLogin($url, $email, $password){
3.
4.     $datauser = array(
5.         //'API_key' => $key,
6.         'email' => $email,
7.         'password' => $password,
8.     );
9.
10.    $postdatauser = "";
11.    foreach($datauser as $k => $v) {
12.        $postdatauser .= $k . "=" . $v."&";
13.    }
14.    //$postData = http_build_query($user_data);
15.    $curlHandle = curl_init();
16.    curl_setopt($curlHandle, CURLOPT_URL, $url);
17.    curl_setopt($curlHandle, CURLOPT_POSTFIELDS, $postdatauser); //
18.    curl_setopt($curlHandle, CURLOPT_HEADER, 0);
```

Server B: Login.php

```
19.     curl_setopt($curlHandle, CURLOPT_RETURNTRANSFER, 1);
20.     curl_setopt($curlHandle, CURLOPT_TIMEOUT,30);
21.     curl_setopt($curlHandle, CURLOPT_POST, 1);
22.     $string = curl_exec($curlHandle);
23.     curl_close($curlHandle);
24.
25.     return $string;
27. }
```

```
27. //cara login
```

```
28. echo doLogin("http://Server_A/login/api.php", $_POST["email"],
    $_POST["password"]);
```


Server B: Login.php

```
29. //proses JSON yang dikembalikan Server A
30. //$string = doLogin("http://localhost/public/login/api.php", $username, $password);
31. $arr = json_decode($string,true);
32. $email = $arr['user'][0]['email'];
33. $password = $arr['user'][0]['password'];
34. //cek keberhasilan login
35. if($email != ""){
36.     session_start();
37.     $_SESSION['email'] = $email;
38.     $_SESSION['password'] = $password;
39.     header("Location:suksess.php"); //arahkan ke halaman suksess
40. } else { echo "Authentication Failed!"; }
```

Membuat Aplikasi Pelanggan RESTful Sederhana dengan PHP + curl

Contoh: Mengirimkan Permintaan GET

```
$service_url = 'http://localhost/wslim/api/todo/5';
$curl = curl_init($service_url);
curl_setopt($curl, CURLOPT_RETURNTRANSFER, true);
$curl_response = curl_exec($curl);
if ($curl_response === false) {
    $info = curl_getinfo($curl);
    curl_close($curl);
    die('error occured during curl exec. Additioanl info: ' . var_export($info));
}
curl_close($curl);
$decoded = json_decode($curl_response);
if (isset($decoded->response->status) && $decoded->response->status == 'ERROR') {
    die('error occured: ' . $decoded->response->errorMessage);
}
echo 'response ok!';
var_export($decoded->response);
```

Contoh: Mengirimkan Permintaan POST

```
$service_url = 'http://localhost/wslim/api/todo';  
$curl = curl_init($service_url);  
$curl_post_data = array(  
    'task' => 'testing modul baru',  
    'status' => '0',  
);  
curl_setopt($curl, CURLOPT_RETURNTRANSFER, true);  
curl_setopt($curl, CURLOPT_POST, true);  
curl_setopt($curl, CURLOPT_POSTFIELDS, $curl_post_data);  
$curl_response = curl_exec($curl);
```

Contoh: Memanggil Permintaan POST

```
if ($curl_response === false) {  
    $info = curl_getinfo($curl);  
    curl_close($curl);  
    die('error occured during curl exec. Additioanl info: ' . var_export($info));  
}  
curl_close($curl);  
$decoded = json_decode($curl_response);  
if (isset($decoded->response->status) && $decoded->response->status == 'ERROR')  
{  
    die('error occured: ' . $decoded->response->errormessage);  
}  
echo 'response ok!';  
var_export($decoded->response);
```

Contoh: Mengirimkan Permintaan PUT

```
$service_url = 'http://localhost/wslim/api/todo/3';
$ch = curl_init($service_url);

curl_setopt($ch, CURLOPT_RETURNTRANSFER, true); curl_setopt($ch, CURLOPT_CUSTOMREQUEST, "PUT");
$data = array("status" => '1');
curl_setopt($ch, CURLOPT_POSTFIELDS, http_build_query($data));
$response = curl_exec($ch);
if ($response === false) {
    $info = curl_getinfo($ch); curl_close($ch);
    die('error occured during curl exec. Additioanl info: ' . var_export($info));
}
curl_close($ch);
$decoded = json_decode($response);
if (isset($decoded->response->status) && $decoded->response->status == 'ERROR') {
    die('error occured: ' . $decoded->response->errorMessage);
}
echo 'response ok!';
var_export($decoded->response);
```

Contoh: Mengirimkan Permintaan DELETE

```
$service_url = 'http://localhost/wslim/api/todo/4';
$ch = curl_init($service_url);
curl_setopt($ch, CURLOPT_RETURNTRANSFER, true); curl_setopt($ch, CURLOPT_CUSTOMREQUEST, "DELETE");
curl_setopt($curl, CURLOPT_POSTFIELDS, $curl_post_data);
$response = curl_exec($ch);
if ($curl_response === false) {
    $info = curl_getinfo($curl); curl_close($curl);
    die('error occured during curl exec. Additioanl info: ' . var_export($info));
}
curl_close($curl);
$decoded = json_decode($curl_response);
if (isset($decoded->response->status) && $decoded->response->status == 'ERROR') {
    die('error occured: ' . $decoded->response->errormessage);
}
echo 'response ok!';
var_export($decoded->response);
```