

# LAPORAN TUGAS PEMROGRAMAN WEB LANJUT

## Jobsheet 8 Implementasi Restful API





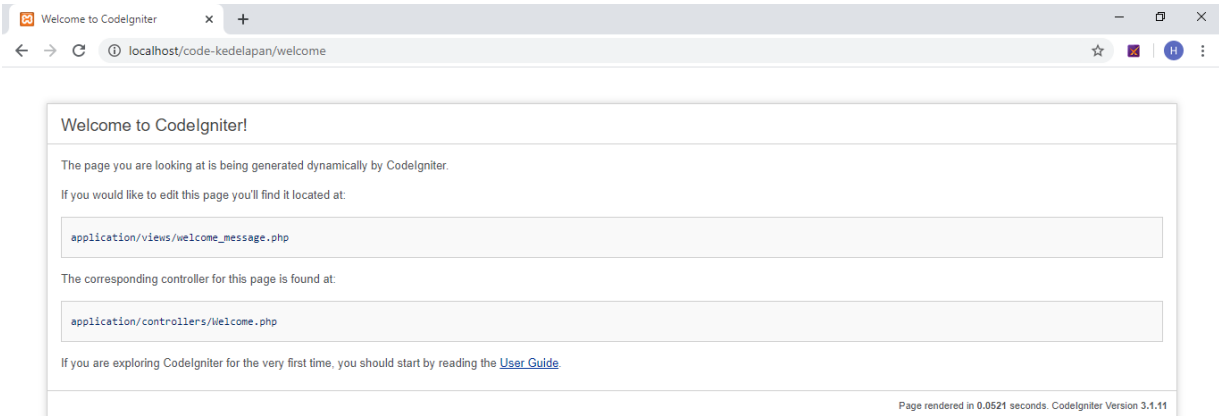


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## Praktikum – Bagian 1: Instalasi library restful codeigniter

Langkah	Keterangan
1	<p>Silahkan unduh aplikasi Postman terlebih dahulu.</p> <p> Postman-win64-7.20.1-Setup 3/18/2020 7:00 AM Application 79,711 KB</p> <p></p> <p>Pada praktikum kali ini kita akan menggunakan source codeigniter yang baru dan Library Rest Server. Untuk versi codeigniter yang digunakan adalah versi 3.1.9. sedangkan untuk Library Rest Server dapat di unduh pada link berikut :</p> <p><a href="https://github.com/dimas1984/CI/tree/master/Belajar-rest">https://github.com/dimas1984/CI/tree/master/Belajar-rest</a></p> <p> ci-restserver-master 3/23/2020 8:33 AM WinRAR archive 1,290 KB</p> <p> ci-restserver-master 3/23/2020 8:31 AM File folder</p> <p>Extract codeigniter yang sudah di unduh dan letakkan pada folder htdocs. Beri nama Code-kedelapan dan coba akses di <a href="http://localhost/Code-kedelapan/">http://localhost/Code-kedelapan/</a>. Pastikan tampilan seperti gambar dibawah ini:</p> 
2	<p>Selanjutnya lakukan konfigurasi dasar pada <b>config.php</b> seperti berikut:</p> <pre> 25  */ 26  \$config['base_url'] = ''; 27 28  /* </pre> <pre> 37  */ 38  \$config['index_page'] = 'index.php'; 39 40  /* </pre> <p>Menjadi seperti berikut :</p> <pre> 25  */ 26  \$config['base_url'] = 'http://localhost/rest_server/'; 27 28  /* </pre> <pre> 37  */ 38  \$config['index_page'] = ''; 39 40  /* </pre> <p>Dan file <b>autoload.php</b> menjadi :</p>

```

60  */
61  $autoload['libraries'] = array('database');
62
63  /*

```

```

91  */
92  $autoload['helper'] = array('url');
93
94  /*

```

Dan database.php seperti berikut:

```

76  $db['default'] = array(
77      'dsn' => '',
78      'hostname' => 'localhost',
79      'username' => 'root',
80      'password' => '',
81      'database' => 'rest_server',
82      'dbdriver' => 'mysqli',
83      'dbprefix' => '',

```

3

Selanjutnya buatlah database **rest\_server** pada phpmyadmin dan masukkan data dummy. Untuk data dummy dapat dibuat sebagai berikut:

```

CREATE TABLE `mahasiswa` (
  `id` int(11) NOT NULL,
  `nrp` char(9) NOT NULL,
  `nama` varchar(250) NOT NULL,
  `email` varchar(250) DEFAULT NULL,
  `jurusan` varchar(64) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `mahasiswa` (`id`, `nrp`, `nama`, `email`, `jurusan`) VALUES
(1, '043040001', 'Doddy Ferdiansyah', 'doy@gmail.com', 'Teknik Mesin'),
(2, '023040123', 'Erik', 'erik@gmail.com', 'Teknik Industri'),
(3, '043040321', 'Rommy Fauzi', 'rommy@gmail.com', 'Teknik Planologi'),
(4, '033040023', 'Fajar Darmawan ', 'fajar@yahoo.com', 'Teknik Informatika'),
(5, '113040321', 'Ferry Mulyanto', 'ferry@yahoo.com', 'Manajemen');

ALTER TABLE `mahasiswa`
  ADD PRIMARY KEY (`id`);

ALTER TABLE `mahasiswa`
  MODIFY `id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=33;

```

Server: 127.0.0.1 » Database: rest\_server » Table: mahasiswa

Browse Structure SQL Search Insert Export Import Privileges Operations

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	nrp	char(9)	latin1_swedish_ci		No	None			Change Drop More
3	nama	varchar(250)	latin1_swedish_ci		No	None			Change Drop More
4	email	varchar(250)	latin1_swedish_ci		Yes	NULL			Change Drop More
5	jurusan	varchar(64)	latin1_swedish_ci		No	None			Change Drop More

Server: 127.0.0.1 » Database: rest\_server » Table: mahasiswa

Browse Structure SQL Search Insert Export Import Pri

Showing rows 0 - 4 (5 total, Query took 0.0016 seconds.)

SELECT \* FROM `mahasiswa`

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: No

+ Options

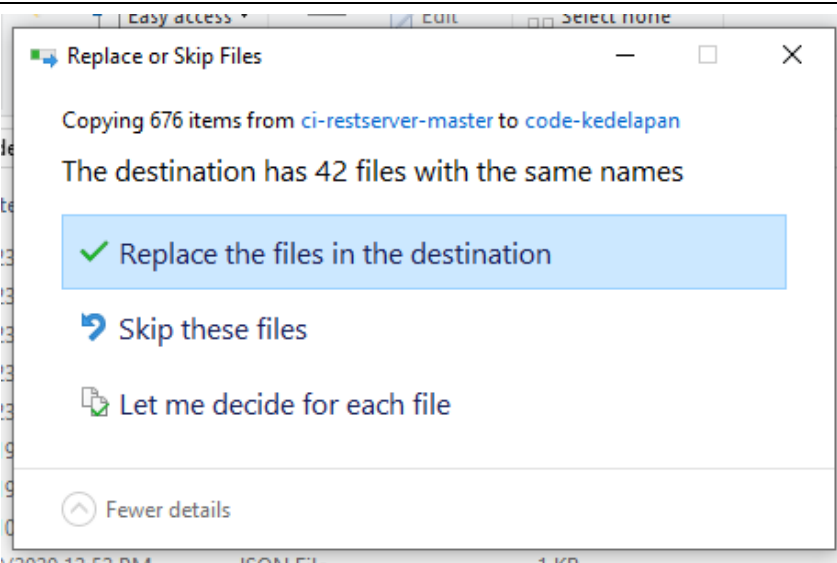
			id	nrp	nama	email	jurusan
<input type="checkbox"/>	Edit	Copy	1	043040001	Doddy Ferdiansyah	doy@gmail.com	Teknik Mesin
<input type="checkbox"/>	Edit	Copy	2	023040123	Erik	erik@gmail.com	Teknik Industri
<input type="checkbox"/>	Edit	Copy	3	043040321	Rommy Fauzi	rommy@gmail.com	Teknik Planologi
<input type="checkbox"/>	Edit	Copy	4	033040023	Fajar Darmawan	fajar@yahoo.com	Teknik Informatika
<input type="checkbox"/>	Edit	Copy	5	113040321	Ferry Mulyanto	ferry@yahoo.com	Manajemen

4

Selanjutnya extract file Library Rest Server, buka folder **application** dan duplikasi file dan folder tersebut kedalam folder **application** pada project **Code-kedelapan**. Klik **Replace files** jika ada notifikasi duplikat.

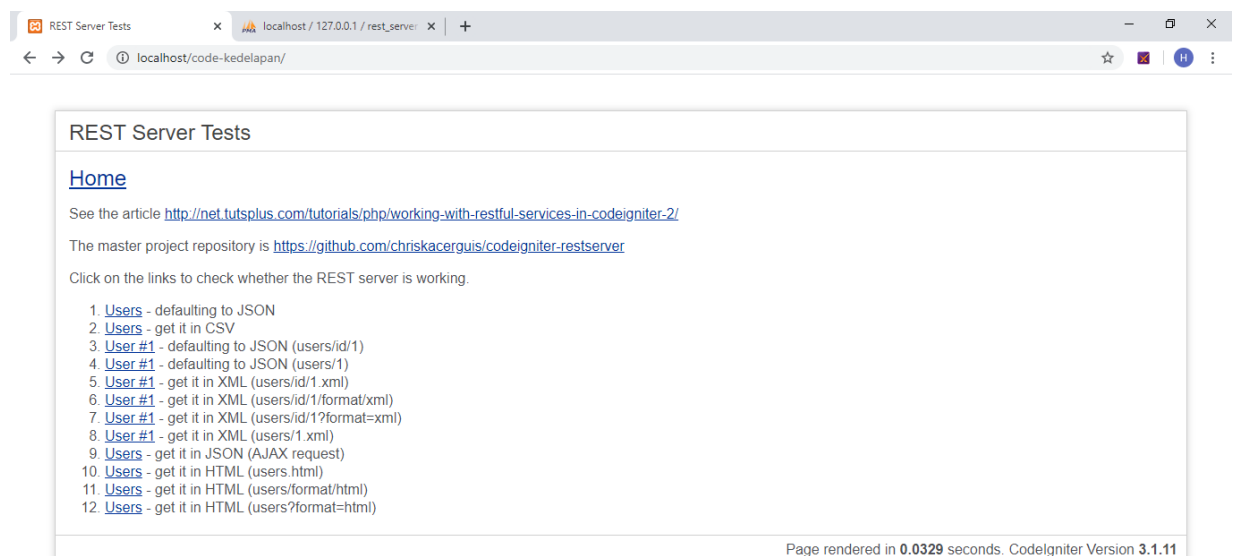
This PC » Windows 10 (C:) » xampp » htdocs » code-kedelapan » application

Name	Date modified	Type	Size
cache	3/23/2020 7:53 AM	File folder	
config	3/23/2020 8:40 AM	File folder	
controllers	3/23/2020 8:40 AM	File folder	
core	3/23/2020 7:53 AM	File folder	
helpers	3/23/2020 7:53 AM	File folder	
hooks	3/23/2020 7:53 AM	File folder	
language	3/23/2020 8:40 AM	File folder	
libraries	3/23/2020 8:40 AM	File folder	
logs	3/23/2020 8:00 AM	File folder	
models	3/23/2020 7:53 AM	File folder	
tests	3/23/2020 8:40 AM	File folder	
third_party	3/23/2020 7:53 AM	File folder	
views	3/23/2020 8:40 AM	File folder	
index	3/23/2020 8:31 AM	Chrome HTML Do...	1 KB



Setelah proses duplikasi file selesai, pastikan file-file yang kita sudah konfigurasi di awal tetap terkonfigurasi.

- 5 Selanjutnya buka project <http://localhost/Code-kedelapan/>. Jika berhasil, tampilan akan berubah menjadi seperti ini:



- 6 Tahap instalasi Library Rest Server selesai

## Praktikum – Bagian 2: Membuat Aplikasi CRUD Restful Codeigniter

Langkah	Keterangan
1	<p>Buatlah file <b>Mahasiswa.php</b> pada <b>controller/api</b>. Selanjutnya tuliskan kode berikut:</p> <pre> CODE-KEDELAPAN ├── application │   ├── cache │   ├── config │   ├── controllers │   │   └── api │   │       ├── Example.php │   │       ├── index.html │   │       ├── Key.php │   │       └── Mahasiswa.php │   └── Home.php </pre>

application > controllers > api > Mahasiswa.php > PHP Intelephense > Mahasiswa > index\_delete

```
1 <?php
2
3 defined('BASEPATH') or exit('No direct script access allowed');
4
5 require APPPATH . 'libraries/REST_Controller.php';
6
7 use Restserver\Libraries\REST_Controller;
8
9 require APPPATH . 'libraries/Format.php';
10
11 class Mahasiswa extends REST_Controller
12 {
13
14     public function __construct()
15     {
16         parent::__construct();
17         $this->load->model('Mahasiswa_model', 'mahasiswa');
18     }
19 }
```

application > controllers > api > Mahasiswa.php > PHP Intelephense > Mahasiswa > index\_get

```
1 <?php
2
3 defined('BASEPATH') or exit('No direct script access allowed');
4
5 require APPPATH . 'libraries/REST_Controller.php';
6 require APPPATH . 'libraries/Format.php';
7
8 class Mahasiswa extends REST_Controller
9 {
10
11     public function __construct()
12     {
13         parent::__construct();
14         $this->load->model('Mahasiswa_model', 'mahasiswa');
15     }
16     public function index_get()
17     {
18         $id = $this->get('id');
19         if ($id === null) {
20             $mahasiswa = $this->mahasiswa->getMahasiswa();
21         } else {
22             $mahasiswa = $this->mahasiswa->getMahasiswa($id);
23         }
24
25         if ($mahasiswa) {
26             $this->response([
27                 'status' => true,
28                 'data' => $mahasiswa
29             ], REST_Controller::HTTP_OK);
30         } else {
31
32
33
34
35
36
37
38 }
```

```
25         if ($mahasiswa) {
26             $this->response([
27                 'status' => true,
28                 'data' => $mahasiswa
29             ], REST_Controller::HTTP_OK);
30         } else {
31             $this->response([
32                 'status' => false,
33                 'message' => 'id not found'
34             ], REST_Controller::HTTP_NOT_FOUND);
35         }
36     }
37 }
38 }
```

Activate Windows

2

Selanjutnya Buatlah file **Mahasiswa\_model.php** pada model. Selanjutnya tuliskan kode berikut:

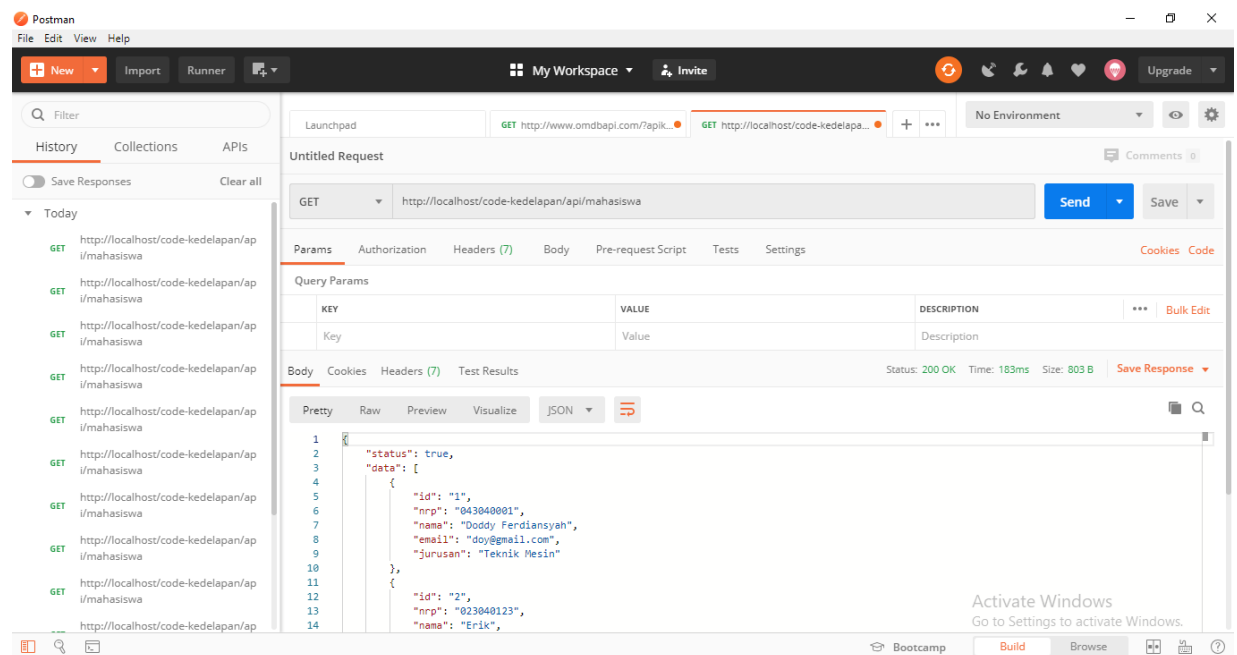
```

application > models > Mahasiswa_model.php > ...
1  <?php
2
3  defined('BASEPATH') or exit('No direct script access allowed');
4
5  class Mahasiswa_model extends CI_Model
6  {
7
8      public function getMahasiswa($id = null)
9      {
10         if ($id === null) {
11             return $this->db->get('mahasiswa')->result_array();
12         } else {
13             return $this->db->get_where('mahasiswa', ['id' => $id])->result_array();
14         }
15     }
16 }
17
18 /* End of file mahasiswa_model.php */
19

```

3

Buka aplikasi postman, masukkan alamat <http://localhost/Code-kedelapan/api/mahasiswa> dengan metode GET. dan jika berhasil maka tampilannya akan seperti ini:



4

Untuk fungsi lain **Create**, **Update** dan **Delete**. Lanjutkan kode berikut pada file **mahasiswa.php**:

application > controllers > api > Mahasiswa.php > PHP Intelephense > Mahasiswa > index\_post

```
41 public function index_delete()
42 {
43     $id = $this->delete('id');
44
45     if ($id === null) {
46         $this->response([
47             'status' => false,
48             'message' => 'provide an id!'
49         ], REST_Controller::HTTP_BAD_REQUEST);
50     } else {
51         if ($this->mahasiswa->deleteMahasiswa($id) > 0) {
52             //ok
53             $this->response([
54                 'status' => true,
55                 'id' => $id,
56                 'message' => 'deleted.'
57             ], REST_Controller::HTTP_OK);
58         } else {
59             //id not found
60             $this->response([
61                 'status' => false,
62                 'message' => 'id not found!'
63             ], REST_Controller::HTTP_BAD_REQUEST);
64         }
65     }
66 }
67
68 public function index_post()
69 {
```

application > controllers > api > Mahasiswa.php > PHP Intelephense > Mahasiswa > index\_put

```
68 public function index_post()
69 {
70     $data = [
71         'nrp' => $this->post('nrp'),
72         'nama' => $this->post('nama'),
73         'email' => $this->post('email'),
74         'jurusan' => $this->post('jurusan'),
75     ];
76
77     if ($this->mahasiswa->createMahasiswa($data) > 0) {
78         $this->response([
79             'status' => true,
80             'message' => 'new mahasiswa has been created'
81         ], REST_Controller::HTTP_CREATED);
82     } else {
83         //id not found
84         $this->response([
85             'status' => false,
86             'message' => 'failed to create new data!'
87         ], REST_Controller::HTTP_BAD_REQUEST);
88     }
89 }
90
91 public function index_put()
92 {
```



```

application > controllers > api > Mahasiswa.php > ...
91     public function index_put()
92     {
93         $id = $this->put('id');
94         $data = [
95             'nrp' => $this->put('nrp'),
96             'nama' => $this->put('nama'),
97             'email' => $this->put('email'),
98             'jurusan' => $this->put('jurusan'),
99         ];
100
101         if ($this->mahasiswa->updateMahasiswa($data, $id) > 0) {
102             $this->response([
103                 'status' => true,
104                 'message' => 'data mahasiswa has been updated'
105             ], REST_Controller::HTTP_OK);
106         } else {
107             //id not found
108             $this->response([
109                 'status' => false,
110                 'message' => 'failed to update data!'
111             ], REST_Controller::HTTP_BAD_REQUEST);
112         }
113     }
114 }
115
116 /* End of file Controllername.php */
117

```

5

Dan lanjutkan kode pada file **Mahasiswa\_model.php**:

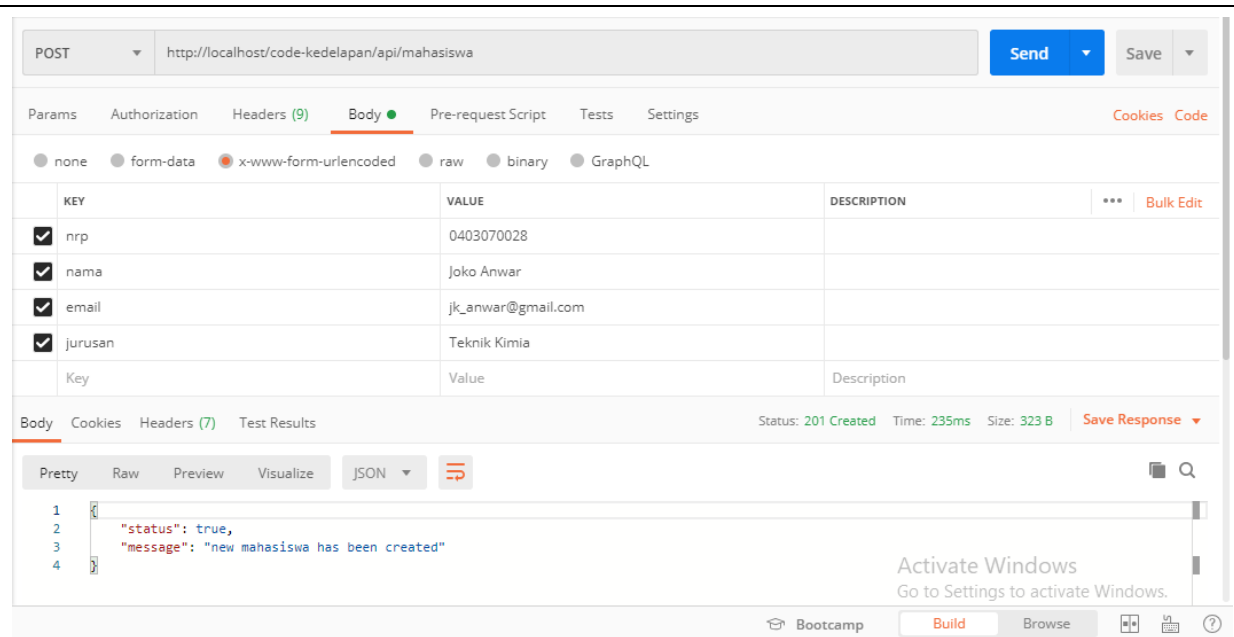
```

application > models > Mahasiswa_model.php > PHP Intelephense > Mahasiswa_model > updateMahasiswa
8     public function getMahasiswa($id = null)
9     {
10         if ($id === null) {
11             return $this->db->get('mahasiswa')->result_array();
12         } else {
13             return $this->db->get_where('mahasiswa', ['id' => $id])->result_array();
14         }
15     }
16
17     public function deleteMahasiswa($id)
18     {
19         $this->db->delete('mahasiswa', ['id' => $id]);
20         return $this->db->affected_rows();
21     }
22
23     public function createMahasiswa($data)
24     {
25         $this->db->insert('mahasiswa', $data);
26         return $this->db->affected_rows();
27     }
28
29     public function updateMahasiswa($data, $id)
30     {
31         $this->db->update('mahasiswa', $data, ['id' => $id]);
32         return $this->db->affected_rows();
33     }
34 }
35
36 /* End of file mahasiswa_model.php */

```

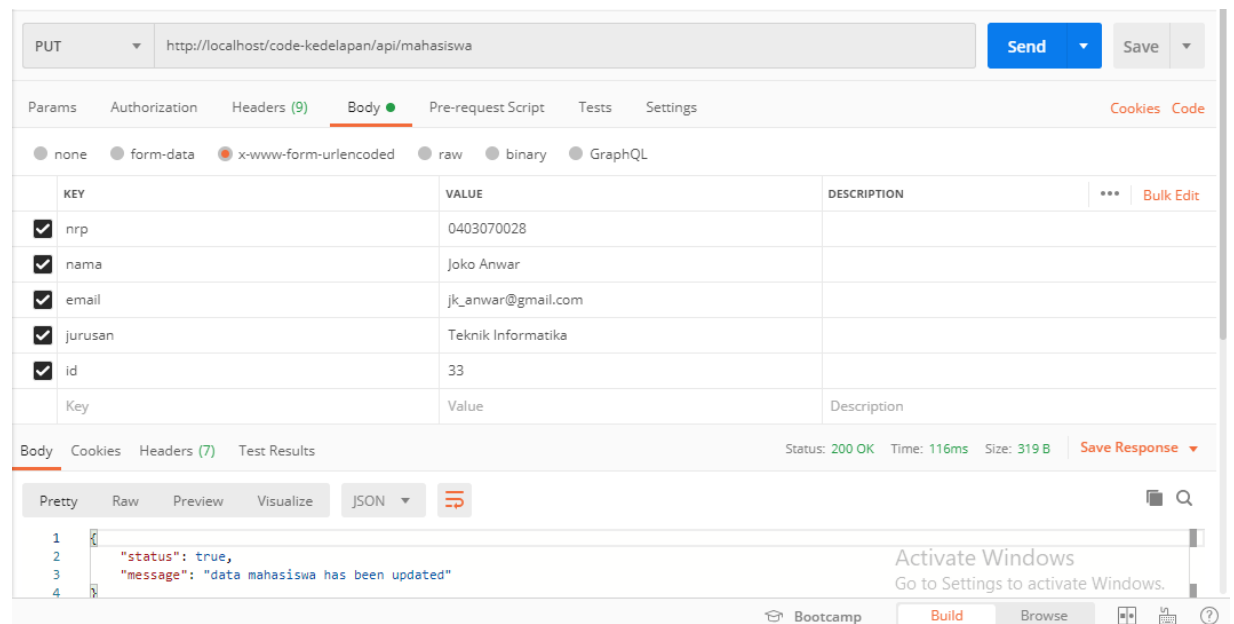
6

Selanjutnya lakukan operasi **Create** data pada aplikasi postman, untuk operasi **Create**, **Update** dan **Delete**, arahkan parameter ke **Body** dan **x-www-form-urlencoded** seperti berikut:



7

Lakukan juga operasi **Update** data pada aplikasi postman, masukkan parameter id seperti berikut:



Lakukan juga operasi **Delete** data pada aplikasi postman, parameter yang dimasukkan cukup id saja, seperti berikut:

DELETE

http://localhost/code-kedelapan/api/mahasiswa

Send

Save

Params

Authorization

Headers (9)

Body

Pre-request Script

Tests

Settings

Cookies

Code

none

form-data

x-www-form-urlencoded

raw

binary

GraphQL

	KEY	VALUE	DESCRIPTION	...	Bulk Edit
<input type="checkbox"/>	nrp	0403070028			
<input type="checkbox"/>	nama	Joko Anwar			
<input type="checkbox"/>	email	jk_anwar@gmail.com			
<input type="checkbox"/>	jurusan	Teknik Informatika			
<input checked="" type="checkbox"/>	id	33			
	Key	Value	Description		

Body

Cookies

Headers (7)

Test Results

Status: 200 OK

Time: 115ms

Size: 306 B

Save Response

Pretty

Raw

Preview

Visualize

JSON

1

2

3

4

5

"status": true,

"id": "33",

"message": "deleted."

Activate Windows  
Go to Settings to activate Windows.

Bootcamp

Build

Browse

