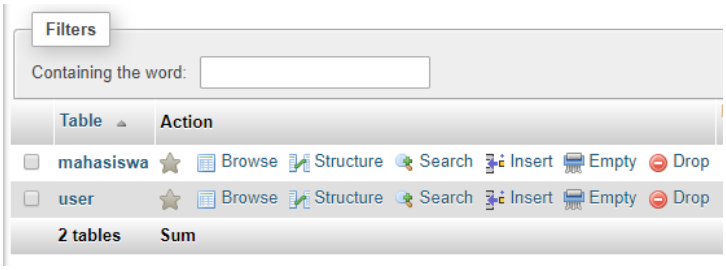
UTS

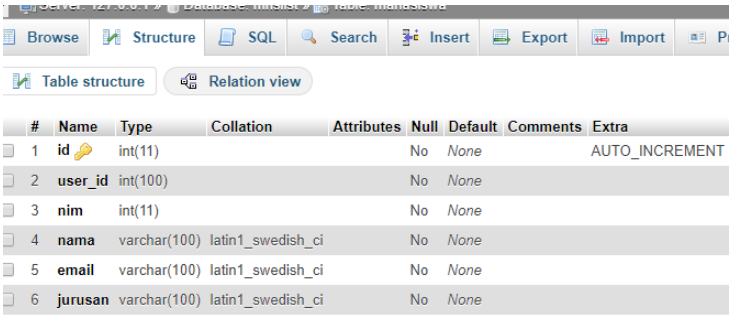
Advanced Web Programming

I. Database

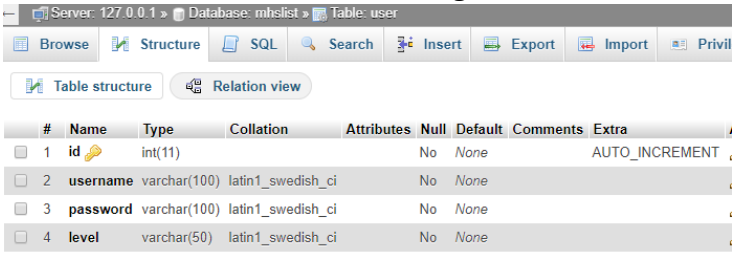
1. To set up the database you should turn on your xampp both apache and mysql services.
2. In this case you should make new database named mhslist, we provide the sql file named mhslist.sql.
3. On phpMyAdmin we have create mhslist database that contain mahasiswa table and user table.




4. Mahasiswa table is used to store student information like nim, nama, email, and jurusan.




5. While user table us used to store login information.




In the password field we use sha1 encryption that make it more secure.

II. Server Rest-API

1. We have 2 models, mahasiswa_model and user_model on rest-api/application/models directory. This php class are contains CRUD methods that connected to the database.
   **Mahasiswa_model.php**

```
class Mahasiswa_model extends CI_Model {
    public function getMahasiswa($id=null){
        if($id===null){
            return $this->db->get('mahasiswa')->result_array();
        }else{
```

```
                return $this->db->get_where('mahasiswa', ['user_id'=>$id])-
>result_array();
            }
        }

        public function deleteMahasiswa($id){
            $this->db->delete('mahasiswa',['user_id'=>$id]);
            return $this->db->affected_rows();
        }

        public function createMahasiswa($data){
            $this->db->insert('mahasiswa', $data);
            return $this->db->affected_rows();
        }
        public function updateMahasiswa($data,$id){
            $this->db->update('mahasiswa', $data, ['user_id'=>$id]);
            return
            $this->db->affected_rows();
        }
    }
```

**User_model.php**

```
class User_model extends CI_Model{
    public function getUser($username=null){
        if($username===null){
            return $this->db->get('user')->result_array();
        }else{
            return $this->db->get_where('user', ['username'=>$username])->result_array();
        }
    }
    public function deleteUser($id){
        $this->db->delete('user',['id'=>$id]);
        return$this->db->affected_rows();
    }
    public function createUser($data){
        $this->db->insert('user', $data);
        return $this->db->affected_rows();
    }
    public function updateUser($data,$username){
        $this->db->update('user', $data, ['username'=>$username]);
        return $this->db->affected_rows();
    }
}
```

2. We also make 2 api that contain GET, POST, DELETE, and PUT request method on application/api directory.
   **Mahasiswa API**

```
class Mahasiswa extends REST_Controller {
    public function __construct()
    {
        parent::__construct();
        $this->load->helper('url');

        $this->load->model('Mahasiswa_model','mahasiswa');
        $this->load->model('User_model','user');
    }

    public function index_get()
    {
        $id=$this->get('id');
        if($id==null){
            $mahasiswa=$this->mahasiswa->getMahasiswa();
        } else{
            $mahasiswa=$this->mahasiswa->getMahasiswa($id);
        }
        if($mahasiswa){
            $this->response([
                'status'=>true,
                'data'=>$mahasiswa
            ], REST_Controller::HTTP_OK);
        }else{
            $this->response([
                'status'=>false,
                'data'=>'id not found'
            ], REST_Controller::HTTP_NOT_FOUND);
        }
    }

    public function index_delete(){
        $id=$this->delete('id');
        if($id==null){
            $this->response([
                'status'=>false,
                'message'=>'provide an id!'
            ], REST_Controller::HTTP_BAD_REQUEST);
        }else{
            if($this->mahasiswa->deleteMahasiswa($id)>0){
                $this->response([
```

```
                    'status'=>true,
                    'id'=>$id,
                    'message'=>'deleted'
                ], REST_Controller::HTTP_OK);
            }else{
                $this->response([
                    'status'=>false,
                    'message'=>'id not found!'
                ], REST_Controller::HTTP_BAD_REQUEST);
            }
        }
    }

    public function index_post(){
        $data=[
            'user_id'=>$this->post('user_id'),
            'nim'=>$this->post('nim'),
            'nama'=>$this->post('nama'),
            'email'=>$this->post('email'),
            'jurusan'=>$this->post('jurusan')
        ];
        if($this->mahasiswa->createMahasiswa($data)>0){
            $this->response([
                'status'=>true,
                'message'=>'new mahasiswa has been created'
            ], REST_Controller::HTTP_CREATED);
        }else{
            $this->response([
                'status'=>false,
                'message'=>'failed to create new data'
            ], REST_Controller::HTTP_BAD_REQUESTD);
        }
    }

    public function index_put(){
        $id=$this->put('id');
        $data=[
            'nim'=>$this->put('nim'),
            'nama'=>$this->put('nama'),
            'email'=>$this->put('email'),
            'jurusan'=>$this->put('jurusan')
        ];
        if($this->mahasiswa->updateMahasiswa($data,$id)>0){
            $this->response([
                'status'=>true,
```

```
                    'message'=>'data mahasiswa has been updated'
                ], REST_Controller::HTTP_OK);
            }else{
                $this->response([
                    'status'=>false,
                    'message'=>'failed to update data!'
                ],REST_Controller::HTTP_BAD_REQUEST);
            }
        }
    }
```

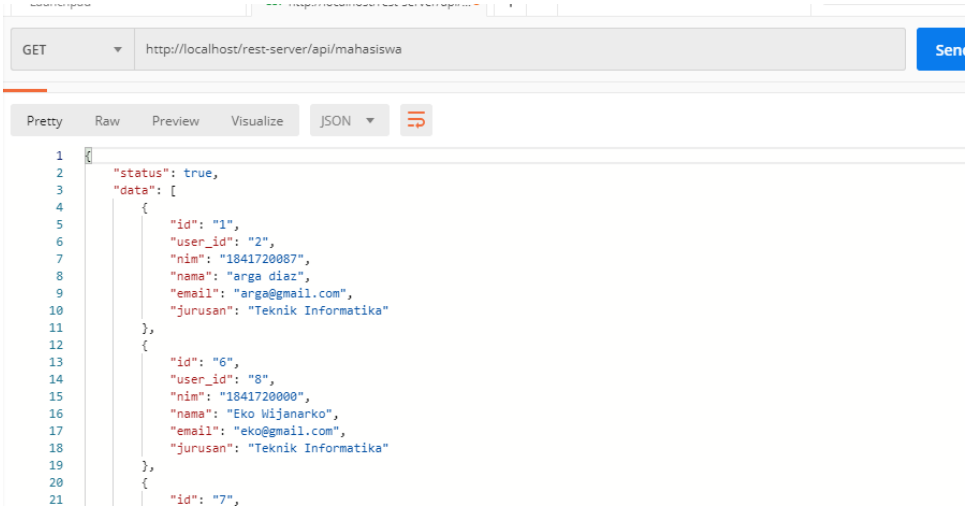
**User API**

```
class User extends REST_Controller{
    public function __construct($config = 'rest') {
        parent::__construct($config);
        $this->load->helper('url');
        $this->load->model('User_model','user');
    }
    public function index_get()
    {
        $username=$this->get('username');
        if($username==null){
            $user=$this->user->getUser();
        } else{
            $user=$this->user->getUser($username);
        }
        if($user){
            $this->response([
                'status'=>true,
                'data'=>$user
            ], REST_Controller::HTTP_OK);
        }else{
            $this->response([
                'status'=>false,
                'data'=>'id not found'
            ], REST_Controller::HTTP_NOT_FOUND);
        }
    }

    public function index_delete(){
        $id=$this->delete('id');
        if($id===null){
            $this->response([
                'status'=>false,
                'message'=>'provide an id!'
```

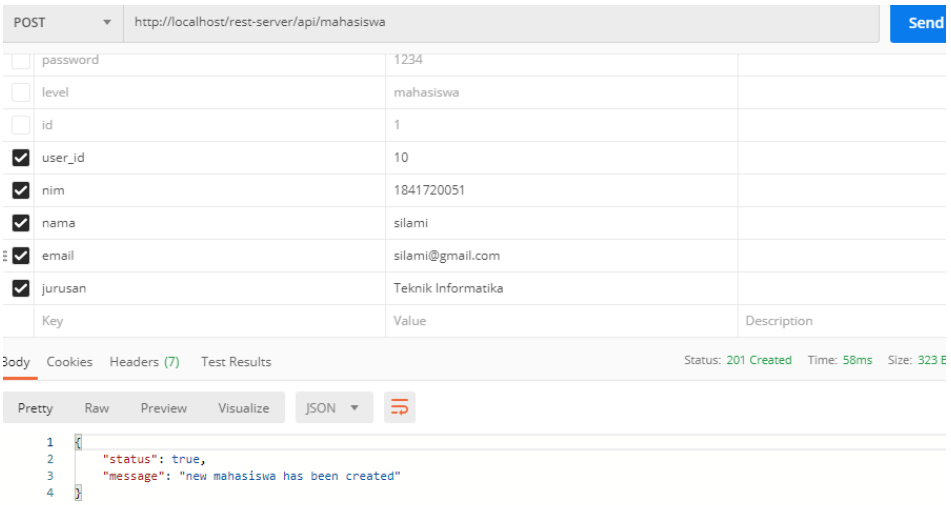
```
            ], REST_Controller::HTTP_BAD_REQUEST);
        }else{
            if($this->user->deleteUser($id)>0){
                $this->response([
                    'status'=>true,
                    'id'=>$id,
                    'message'=>'deleted'
                ], REST_Controller::HTTP_OK);
            }else{
                $this->response([
                    'status'=>false,
                    'message'=>'id not found!'
                ], REST_Controller::HTTP_BAD_REQUEST);
            }
        }
    }

    public function index_post(){
        $data=[
            'username'=> $this->post('username'),
            'password'=> sha1($this->post('password')),
            'level'=> $this->post('level')
        ];
        if($this->user->createUser($data)>0){
            $this->response([
                'status'=>true,
                'message'=>'User has been created'
            ], REST_Controller::HTTP_CREATED);
        }else{
            $this->response([
                'status'=>false,
                'message'=>'failed to create new data'
            ], REST_Controller::HTTP_BAD_REQUEST);
        }
    }
    public function index_put(){
        $username=$this->put('username');
        $data=[
            'password'=> sha1($this->put('password')),
            'level'=> $this->put('level')
        ];
        if($this->user->updateUser($data,$username)>0){
            $this->response([
                'status'=>true,
                'message'=>'data User has been updated'
```

```
            ], REST_Controller::HTTP_OK);
        }else{
            $this->response([
                'status'=>false,
                'message'=>'failed to update data!'
            ],REST_Controller::HTTP_BAD_REQUEST);
        }
    }
}
```

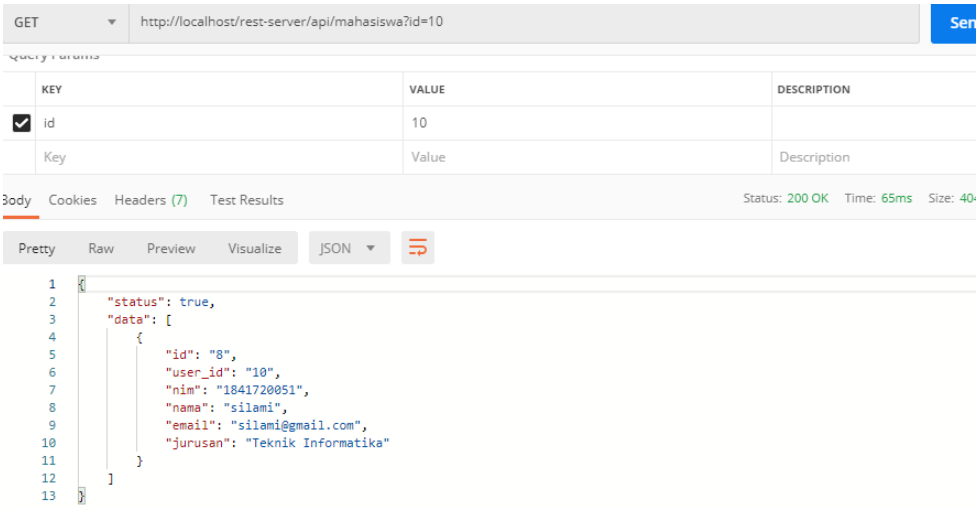
3. To test the API, first turn on your xampp both apache and mysql services. We use postman to try to send some request. For example, we use Mahasiswa database. Use 'http://localhost/rest-server/api/mahasiswa/' for the url prefix.
   a) GET



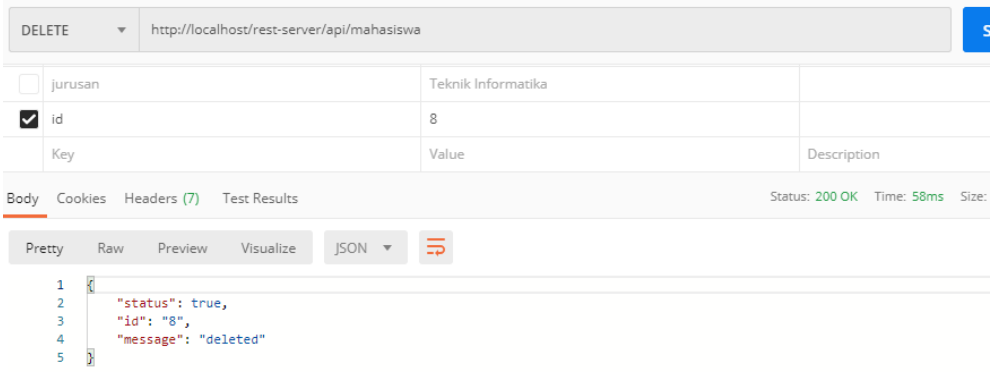

   b) POST – in post, delete, and put, use 'x-www-form-urlencoded' in body navbar below the url field.



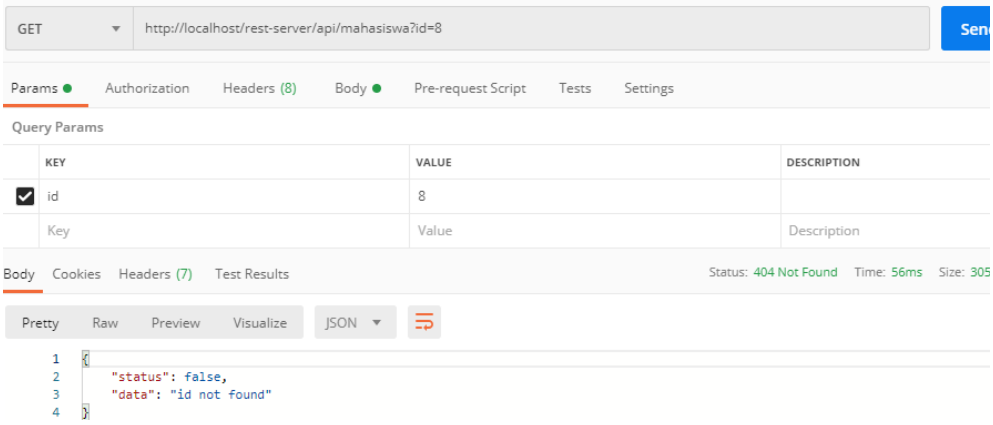

Then Silami is saved with id number 8.



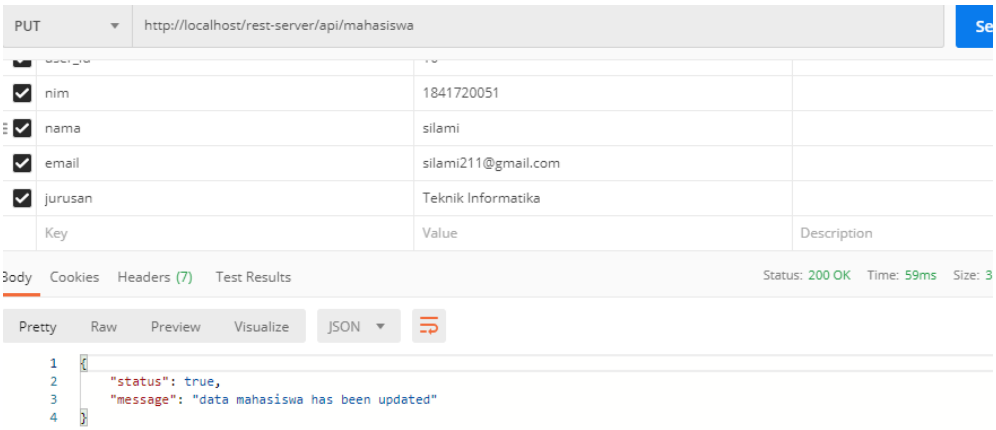

c) DELETE - We try to delete silami's information



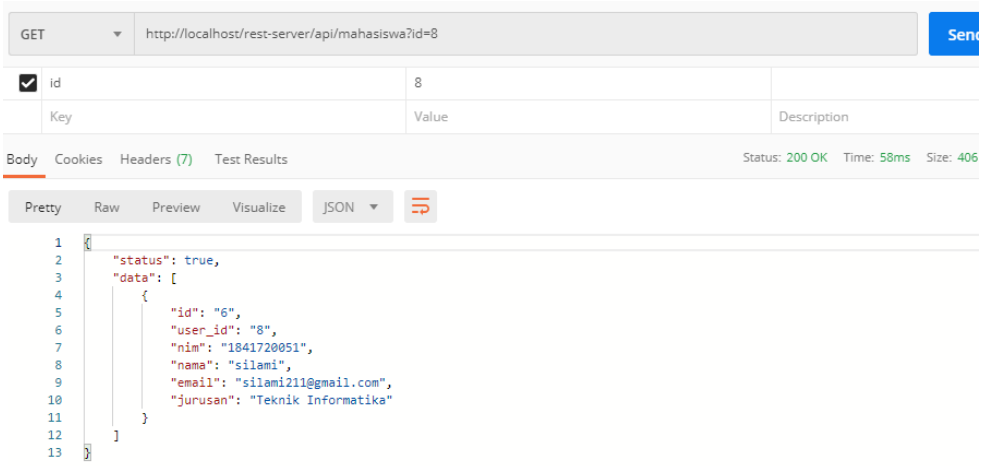

Then the data no longer in the database.




d) PUT - We try to change silami's email.




The email record changed.




III. Client Web-Based

1. First, we need to make the model of each table in database on application/models.
   Mahasiswa_model.php

```
    class Mahasiswa_model extends CI_Model {
        public function getMahasiswa($id){
            return $this->db->get_where('mahasiswa', ['user_id'=>$id])-
>result_array();
        }
        public function getMahasiswaInfo($id){
            return $this->db->get_where('mahasiswa', ['id'=>$id])-
>result_array();
        }
    }
```

   Login_model.php

```
class login_model extends CI_Model {

    function login($username,$password){
```

```
        $this->db->select('id,username,password,level');
        $this->db->from('user');
        $this->db->where('username', $username);
        $this->db->where('password', sha1($password));
        $this->db->limit(1);

        $query=$this->db->get();
        if($query->num_rows()==1){
            return $query->result_array();
        }else{
            return false;
        }
    }
}
```

2. Second, we need to make the controller on application/controller.
   Login.php

```
class login extends CI_Controller
{

    public function __construct()
    {
        parent::__construct();
        $this->load->model('login_model');
    }

    public function index()
    {
        $this->session->sess_destroy();
        $data['title']='Login';

        $this->load->view('template/header_login',$data);
        $this->load->view('login/index',$data);
        $this->load->view('template/footer');
    }

    public function proses_login(){
        $username=htmlspecialchars($this->input->post('uname1'));
        $password=htmlspecialchars($this->input->post('pwd1'));

        $check= $this->login_model->login($username, $password);
        if($check){
            foreach($check as $chk);
            $this->session->set_userdata('id', $chk["id"]);
            $this->session->set_userdata('username',$chk["username"]);
```

```
                $this->session->set_userdata('level',$chk["level"]);

                if($this->session->userdata('level')=="dosen"){
                    redirect('mahasiswa/index');
                }
            }else{
                $data['pesan']="username dan password anda salah";
                $data['title']='login';
                $this->load->view('template/header_login',$data);
                $this->load->view('login/index',$data);
                $this->load->view('template/footer');
            }
        }
        public function logout(){
            $this->session->sess_destroy();

            redirect('login','refresh');

        }
    }
```

Mahasiswa.php

```
    class mahasiswa extends CI_Controller {

        public function __construct(){
            parent::__construct();
            $this->load->model('Mahasiswa_model', 'mahasiswa');
            $this->load->library('form_validation');

            if($this->session->userdata('level')!="dosen"){
                redirect('login','refresh');
            }
        }

        public function index()
        {
            $data['title']=ucfirst($this->session->userdata('username'));
            $key=$this->input->post('keyword');
            $data['mahasiswa']=$this->mahasiswa->getMahasiswa($this->session-
>userdata('id'));
            $this->load->view('template/header_datatables',$data);
            $this->load->view('mahasiswa/index',$data);
            $this->load->view('template/footer_datatables');
        }
```

```
        public function detail($id){
            $data['title']='Dosen';
            $data['mahasiswa']=$this->mahasiswa->getMahasiswaInfo($id);
            $this->load->view('template/header', $data);
            $this->load->view('mahasiswa/detail', $data);
            $this->load->view('template/footer');

        }

    }
```

3. Third make the view of login, List mahasiswa, and details.
   Login (application/views/login/index.php)

```
<?=
form_open('login/proses_login');
?>


<div class="container">
    <div class="row py-5">
        <div class="col-md-12 min-vh-100 d-flex flex-column justify-content-center">
            <div class="row">
                <div class="col-lg-6 col-md-8 mx-auto">


                    <!-- form card login -->
                    <div class="card rounded shadow shadow-sm">
                        <div class="card-header">
                            <h3 class="mb-0">Login</h3>
                            <div class='alert alert-info mt-3' role='alert'>
                                <?php
                                    if(isset($pesan)){
                                        echo $pesan;
                                    }else{
                                        echo "Masukkan username dan password anda";
                                    }
                                ?>
                            </div>
                        </div>
                        <div class="card-body">
                            <form class="form" role="form" autocomplete="off" id="formLogin" novalidate="" metho
d="POST">

                                <div class="form-group">
                                    <label for="uname1">Username</label>
                                    <input type="text" class="form-control form-control-lg rounded-
0" name="uname1" id="uname1" required="">
                                    <div class="invalid-feedback">Oops, you missed this one.</div>
```

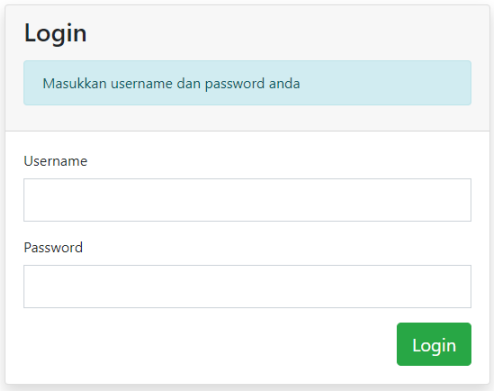
```
                                </div>
                                <div class="form-group">
                                    <label>Password</label>
                                    <input type="password" class="form-control form-control-lg rounded-
0" id="pwd1" name="pwd1" required="" autocomplete="new-password">
                                    <div class="invalid-feedback">Enter your password too!</div>
                                </div>
                                <button type="submit" class="btn btn-success btn-lg float-
right" id="btnLogin">Login</button>
                            </form>
                        </div>
                        <!--/card-block-->
                    </div>
                    <!-- /form card login -->
                </div>
            </div>
            <!--/row-->
        </div>
        <!--/col-->
    </div>
    <!--/row-->
</div>
<!--/container-->
<?=
form_close();
?>
```

List Mahasiswa (application/views/mahasiswa/index.php)

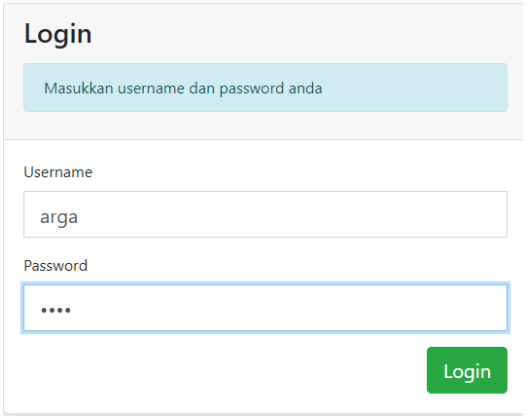
```
<div class="container">
    <div class="row mt-3">
        <div class="col-md-6">
                            <div class="list-mahasiswa">
                            <div class="col-md-12">
                        <h1 style="text-align: center; margin-bottom:30px">List Mahasiswa</h1>
                    </div>
                    <table class="table table-striped table-bordered" id="list_mhs">
                        <thead>
                            <tr>
                                <th>No</th>
                                <th>Nama</th>
                            </tr>
                        </thead>
                        <tbody>
                            <?php
                                $no=1;
```

```
                                foreach($mahasiswa as $mhs){?>
                                <tr>
                                    <td><?=$no++?></td>
                                    <td><?=$mhs['nama']?><a class="badge badge-primary float-
right" href="<?=base_url()?>mahasiswa/detail/<?=$mhs["id"]?>">Detail</a></td>
                                </tr>
                                <?php }?>
                            </tbody>
                        </table>
                    </div>
                </div>
            </div>
        </div>
```

4. Then to access the website, turn on your xampp, both of apache and mysql services.
5. Access the web using url below:
   ‘http://localhost/Project/’ or you can use ‘http://localhost/Project/login’
6. In the client website, we provide login as an authentication. Every time the user access login page, the session will reset so they can’t go back to the previous page.

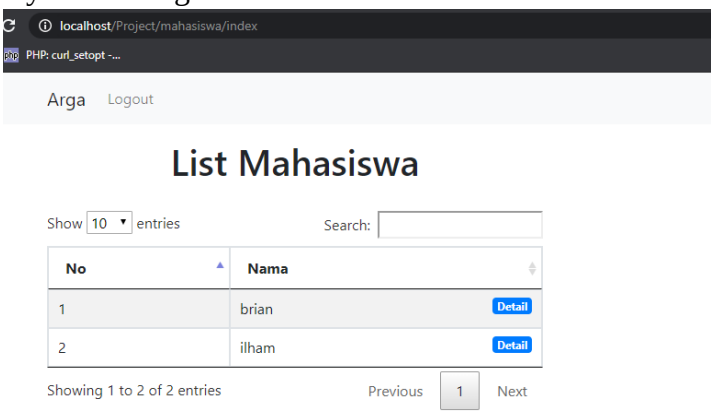



After login the user can see all of their student so, each teacher has its student. For example we login as ‘arga’ with password 1234.

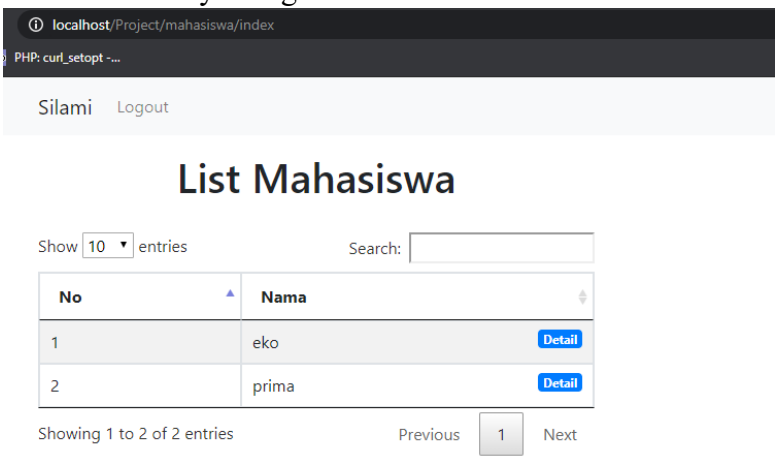



Note that the password in database is encrypted, so notice the password based on this report. The encryption itself are using sha1 method.

7. It will appear 2 students brian and ilham. Note that the teacher has their own students. The layout is using data tables.




8. Then we will try to login with different user. Username ‘silami’ and password ‘12345’.




Of course he has students named eko and prima.

9. On page detail is used to show the personal information of each student. For example, we click on eko’s detail.