

LAMPIRAN

1. Dokumentasi *Source Code*

Controllerdiagnosa.php

```
<?php
defined('BASEPATH') or exit('No direct script access allowed');
class Controllerdiagnosa extends CI_Controller
{
    public function __construct()
    {
        parent::__construct();
        $this->load->model('modeldiagnosa');
        $_SESSION['ruledb'] = "rule";
    }
    private function debugging($data)
    {
        echo "<pre>";
        print_r($data);
        echo "</pre>";
    }
    public function index()
    {
        $this->load->view('templates/header');
        $this->load->view('halaman-menu-utama');
        $this->load->view('templates/footer');
    }
    public function diagnosa()
    {
        $data['kondisi'] = $this->modeldiagnosa->gejala();
        $this->load->view('templates/header');
        $this->load->view('halaman-diagnosa',$data);
        $this->load->view('templates/footer');
    }
    public function proses_diagnosa()
    {
        $data['penyakit'] = $this->modeldiagnosa->get_all_penyakit();
        $post = $this->input->post();
        $invalid = false;
        foreach($post as $p)
        {
            if($p == 'Pilih Gejala')
            {
```

```

        $invalid = true;
    }
}
if($invalid == true)
{
    $_SESSION['error_message'] = "Gejala harus di isi!";
    redirect(base_url('controllerdiagnosa/diagnosa'));
    die();
}
$gejala = $this->modeldiagnosa->gejala();
$input_user = array();

foreach($gejala as $key => $g)
{
    foreach($g['indikator'] as $key2 => $gi)
    {
        if($gejala[$key]['indikator'][$key2]['keparahan_gejala'] == "Parah")
        {
            $Mp = 0;
            $nilai = $post["$g[id_gejala]_range"];
            if($nilai>0.6 && $nilai<0.4)
            {
                $Mp = (($nilai-0.6)/(0.7-0.6));
            }
            else
            {
                if($nilai>= 0.7 && $nilai<=1)
                {
                    $Mp = 1;
                }
                else
                {
                    if($nilai < 0.6)
                    {
                        $Mp = "Null";
                    }
                    else
                    {
                        $Mp = "0";
                    }
                }
            }
        }
        if($Mp != "Null")
        {
            $input_user[$gi['kode_gejala']] = $Mp;
        }
    }
}

```

```

    }
  }
elseif($gejala[$key]['indikator'][$key2]['keparahan_gejala'] == "Agak
Parah")
{
  $Map = 0;
  $nilai = $post["$g[id_gejala]_range"];

  if($nilai == 0.3 || $nilai == 0.7)
  {
    $Map = "0";
  }
  else
  {
    if($nilai > 0.3 && $nilai < 0.4)
    {
      $Map = (($nilai-0.3) / (0.4-0.3));
    }
    else
    {
      if($nilai >= 0.4 && $nilai <= 0.6)
      {
        $Map = 1;
      }
      else
      {
        if($nilai > 0.6 && $nilai < 0.7)
        {
          $Map = ((0.7-$nilai) - (0.7-0.6));
        }
        else
        {
          $Map = "Null";
        }
      }
    }
  }
  if($Map != "Null")
  {
    $input_user[$gi['kode_gejala']] = $Map;
  }
}
elseif($gejala[$key]['indikator'][$key2]['keparahan_gejala'] ==
"Normal")
{

```

```

    $Mn = 0;
    $nilai = $post["$g[id_gejala]_range"];
    if($nilai >= 0 && $nilai <= 0.3)
    {
        $Mn = 1;
    }
    else
    {
        if($nilai > 0.3 && $nilai < 0.4)
        {
            $Mn = ((0.4 - $nilai) / (0.4-0.3));
        }
        else
        {
            if($nilai > 0.4)
            {
                $Mn = "Null";
            }
            else
            {
                $Mn = "0";
            }
        }
    }
    if($Mn != "Null")
    {
        $input_user[$gi['kode_gejala']] = $Mn;
    }
}
}
$input_user[$post['9']] = "1";
ksort($input_user);
$count_rules = $this->modeldiagnosa->count_all_id_rules();
$rule_cocok = array();
$m = array();
foreach($count_rules as $key => $cr)
{
    $rules = $this->modeldiagnosa->get_rules_by_id($cr);
    $invalid = false;
    foreach($rules as $key2 => $ru)
    {
        $no = 1;
        if(array_key_exists($ru['kode_gejala'],$input_user))
        {

```

```

        $m[$cr][$ru['kode_gejala']] = $input_user[$ru['kode_gejala']];
        $z[$cr][$ru['kode_gejala']] = $post[$no.'_range'];
    }
    else
    {
        $invalid = true;
    }
    $no++;
}
if($invalid == false)
{
    array_push($rule_cocok,$cr);
}
else
{
    unset($m[$cr]);
}
}
foreach($m as $key => $mvalue)
{
    foreach($mvalue as $mv => $mv1)
    {
        if($mv == 25 || $mv == 26 || $mv == 27 || $mv == 28)
        {
            unset($m[$key][$mv]);
        }
    }
}
$sa = array();
$sz = array();
foreach($rule_cocok as $key => $r)
{
    $sa[$r] = 0;
    $sz[$r] = 0;
    $no = 1;
    foreach($m[$r] as $key2 => $mr)
    {
        if($no != 9)
        {
            $sa[$r] += ($mr*$post[$no.'_range']);
        }
        $sz[$r] += $mr;
        $no++;
    }
}

```

```

    }
    $wa = array();
    foreach($rule_cocok as $key => $rc)
    {
        $wa[$rc] = $sa[$rc]/$sz[$rc];
        arsort($wa);
    }
    foreach($wa as $key => $w)
    {
        $wa[$key] = array();
        $rule = $this->modeldiagnosa->get_rules_by_id($key);
        $penyakit = $this->modeldiagnosa-
>get_penyakit_byid($rule[0]['id_penyakit']);
        $wa[$key]['nama_penyakit'] = $penyakit[0]['nama_penyakit'];
        $wa[$key]['foto_penyakit'] = $penyakit[0]['foto_penyakit'];
        $wa[$key]['keterangan_penyakit'] =
$penyakit[0]['keterangan_penyakit'];
        $wa[$key]['solusi_penyakit'] = $penyakit[0]['solusi_penyakit'];
        $wa[$key]['total_seluruh'] = $w;
    }
    $data['hasil_diagnosis'] = $wa;
    $this->load->view('templates/header');
    $this->load->view('halaman-hasil-diagnosa',$data);
    $this->load->view('templates/footer');
}
public function pengetahuan()
{
    $rule = $this->modeldiagnosa->get_all_rules();
    $penyakit = $this->modeldiagnosa->get_all_rules_penyakit();
    $data['rule'] = $this->modeldiagnosa->get_all_rules_penyakit();
    $this->load->view('templates/header');
    $this->load->view('halaman-pengetahuan',$data);
    $this->load->view('templates/footer');
}
public function penyakit()
{
    $data['penyakit'] = $this->modeldiagnosa->get_all_penyakit();
    $this->load->view('templates/header');
    $this->load->view('halaman-penyakit',$data);
    $this->load->view('templates/footer');
}
}
}

```

modeldiagnosa.php

```
<?php
class modeldiagnosa extends CI_Model
{
    private function debugging($data)
    {
        echo "<pre>";
        print_r($data);
        echo "</pre>";
    }
    public function gejala()
    {
        $array = array();
        $query = $this->db->get('gejala')->result_array();
        foreach($query as $q)
        {
            $this->db->where('id_gejala',$q['id_gejala']);
            $this->db->order_by('kode_gejala','desc');
            $ye = $this->db->get('indikator_gejala')->result_array();
            $array[$q['id_gejala']] = array('nama_gejala' =>
"$q[nama_gejala]","id_gejala" => $q['id_gejala'], 'ket_gejala' =>
"$q[ket_gejala]");
            $array[$q['id_gejala']]['indikator'] = array();
            foreach($ye as $y)
            {
                array_push($array[$q['id_gejala']]['indikator'],array(
                    'kode_gejala' => $y['kode_gejala'],
                    'id_gejala' => $y['id_gejala'],
                    'nama_indikator' => $y['nama_indikator'],
                    'keparahan_gejala' => $y['keparahan_gejala']
                ));
            }
        }
        return $array;
    }
    public function get_all_rules_penyakit()
    {
        $semua_penyakit = array();
        $penyakit = $this->db->query("SELECT * FROM penyakit")->result_array();
        foreach($penyakit as $key => $p)
        {
            $semua_penyakit[$p['nama_penyakit']] = array();
        }
    }
}
```

```

        $rules = $this->get_rule_byid($p['id_penyakit']);
        foreach($rules as $key2 => $r)
        {
            $rule = $this-
>get_rule_bypenyakit_and_rule($p['id_penyakit'],$r['id_rule']);

            $semua_penyakit[$p['nama_penyakit']][$r['id_rule']] = array();
            foreach($rule as $key3 => $ru)
            {
                array_push($semua_penyakit[$p['nama_penyakit']][$r['id_rule']], $r
u['nama_indikator']);
            }
        }
        return $semua_penyakit;
    }
    public function get_all_rules()
    {
        $rules = $this->db->query("SELECT * FROM rule left join penyakit on
rule.id_penyakit = penyakit.id_penyakit left join indikator_gejala on
indikator_gejala.kode_gejala = rule.kode_gejala");
        $rule = array();
        return $rules->result_array();
    }
    public function get_rules_by_id($id_rule)
    {
        $rules = $this->db->query("SELECT * FROM rule left join penyakit on
rule.id_penyakit = penyakit.id_penyakit left join indikator_gejala on
indikator_gejala.kode_gejala = rule.kode_gejala where
rule.id_rule='$id_rule'")->result_array();
        return $rules;
    }
    public function count_all_id_rules()
    {
        $rules = $this->db->query("SELECT * FROM rule group by id_rule")-
>result_array();
        $id_rule = array();
        foreach($rules as $key => $r)
        {
            array_push($id_rule,$r['id_rule']);
        }
        return $id_rule;
    }
    public function bobot_byid($id)
    {

```



```

        $this->db->where('kode_gejala',$id);
        $this->db->get('bobot');
    }
    public function get_all_penyakit()
    {
        return $this->db->get('penyakit')->result_array();
    }
    public function get_penyakit_byid($id_penyakit)
    {
        $this->db->where('id_penyakit',$id_penyakit);
        return $this->db->get('penyakit')->result_array();
    }
    public function get_rule_byid($id_penyakit)
    {
        $this->db->where('id_penyakit',$id_penyakit);
        return $this->db->get($_SESSION['ruledb'])->result_array();
    }
    public function get_rule_bypenyakit_and_rule($id_penyakit,$id_rule)
    {
        $this->db->join('penyakit','penyakit.id_penyakit = rule.id_penyakit');
        $this->db->join('indikator_gejala','indikator_gejala.kode_gejala =
rule.kode_gejala');
        $this->db->where('rule.id_penyakit',$id_penyakit);
        $this->db->where('rule.id_rule',$id_rule);
        $data = $this->db->get('rule')->result_array();
        return $data;
    }
    public function cek_gejala_penyakit($id_penyakit,$kode_gejala)
    {
        $this->db->where('id_penyakit',$id_penyakit);
        $this->db->where('kode_gejala',$kode_gejala);
        return count($this->db->get($_SESSION['ruledb'])->result_array());
    }
    public function get_bobot_byid($kode_gejala)
    {
        $this->db->where('kode_gejala',$kode_gejala);
        return $this->db->get('bobot')->result_array();
    }
    public function kondisi()
    {
        $query = $this->db->get('kondisi');
        return $query->result_array();
    }
    public function kondisi_byid($id)
    {

```

```

$this->db->where('cf_user',$id);
$query = $this->db->get('kondisi');
return $query->result_array();
}
public function gejala_byid($id)
{
$this->db->where('kode_gejala',$id);
$query = $this->db->get('gejala');
return $query->result_array();
}
}

```

halaman_diagnosa.php

```

<div class="page-wrapper">
  <div class="page-breadcrumb bg-white">
    <div class="row align-items-center">
      <div class="col-lg-3 col-md-4 col-sm-4 col-xs-12">
        <h4 class="page-title">Diagnosa</h4>
      </div>
      <div class="col-lg-9 col-sm-8 col-md-8 col-xs-12">
        <div class="d-md-flex">
          </div>
        </div>
      </div>
    </div>
  </div>
  <div class="container-fluid">
    <div class="row">
      <div class="col-md-12">
        <div class="white-box">
          <?php if(isset($_SESSION['error_message'])): ?>
          <div class="alert alert-danger">
            [ERROR] Gejala harus di isi!
          </div>
          <?php
            unset($_SESSION['error_message']);
          endif; ?>
          <div class="box-body">
            <form action="<?=
base_url('controllerdiagnosa/proses_diagnosa') ?>" method="POST">
              <table class="table table-hover">
                <tr>
                  <th>No</th>

```

```

        <th>Gejala</th>
        <th>Keterangan</th>
        <th>Range</th>
        <th hidden>Indikator</th>
    </tr>
    <?php
    $no = 1;
    foreach($kondisi as $k):
        ?>
    <tr>
        <td><?= $no++ ?></td>
        <td><?= $k['nama_gejala']; ?></td>
        <?php if($k['nama_gejala'] != "Tempat"): ?>
        <td><?= $k['ket_gejala']; ?></td>
        <td>
            <input name="<?= $k['id_gejala'] ?>_range"
type="range" min="0" max="1" step="0.1" value="0"
oninput="this.nextElementSibling.value = this.value">
            <output>0</output>
        </td>
        <?php else: ?>
        <td>
            <select name="<?= $k['id_gejala']; ?>"
class="form-control">
                <option>Pilih Gejala</option>
                <?php foreach($k['indikator'] as $i): ?>
                <option value="<?= $i['kode_gejala']
?>"><?= $i['nama_indikator'] ?></option>
                <?php endforeach; ?>
            </select>
        </td>
        <?php endif; ?>
    </tr>
    <?php endforeach; ?>
</table>
<div class="d-grid gap-2">
    <input type="submit" value="Diagnosis" onclick="return
confirm('Apakah anda sudah yakin dengan data ini?')" class="btn btn-primary
btn-block" >
    </div>
</form>
</div>
</div>
</div>
</div>
</div>
</div>

```

halaman-hasil-diagnosa.php

```
<div class="page-wrapper">
  <div class="page-breadcrumb bg-white">
    <div class="row align-items-center">
      <div class="col-lg-3 col-md-4 col-sm-4 col-xs-12">
        <h4 class="page-title">Diagnosa</h4>
      </div>
      <div class="col-lg-9 col-sm-8 col-md-8 col-xs-12">
        <div class="d-md-flex">
          </div>
        </div>
      </div>
    </div>
  </div>
  <div class="container-fluid">
    <?php if(count($hasil_diagnosis) == 0): ?>
    <div class="row">
      <div class="col-md-12">
        <div class="card card-body">
          <div class="text-center">
            <br><br>
            Tidak ditemukan penyakit yang cocok pada kucing</div>
          </div>
        </div>
      </div>
    </div>
    <?php else: ?>
    <div class="row">
      <?php
      $keys = array();
      foreach(array_keys($hasil_diagnosis) as $key => $hd)
      {
        $keys[$key] = $hd;
      }
      $no = 0;
      foreach($hasil_diagnosis as $key => $hd):
      ?>
      <div class="col-md-12">
        <div class="white-box">
          <div class="box-title">Diagnosis Penyakit Kulit dari kucing
```

adalah:

```

        </div>
        ">
        <br><br>
        <h2><?= $hd['nama_penyakit']; ?></h2>
        <b>Tingkat keparahan : </b>
        <?php $nilaipenyakitawal = $hd['total_seluruh']; ?>
        <p><?=
number_format(($hd['total_seluruh']*100),2)?>%</p>
        <hr>
        <b>Keterangan Penyakit:</b>
        <p><?= $hd['keterangan_penyakit']; ?></p>
        <b>Solusi:</b>
        <p><?= nl2br($hd['solusi_penyakit']); ?></p>
        <a class="btn btn-success" href="<?=
base_url('controllerdiagnosa/diagnosa') ?>">Kembali ke Utama</a>
    </div>
</div>
<?php
return;
endforeach; ?>
</div>
<?php endif; ?>
</div>

```

halaman-menu-utama.php

```

<div class="page-wrapper">
    <div class="page-breadcrumb bg-white">
        <div class="row align-items-center">
            <div class="col-lg-3 col-md-4 col-sm-4 col-xs-12">
                <h4 class="page-title">Utama</h4>
            </div>
            <div class="col-lg-9 col-sm-8 col-md-8 col-xs-12">
                <div class="d-md-flex">
                </div>
            </div>
        </div>
    </div>
</div>
<div class="container-fluid">
    <div class="row justify-content-md-center">
        <div class="col-md-12">
            <div class="white-box">

```

```

        <div class="box-title"><br><br><br><br><br><h2
class="text-center">SISTEM PAKAR DIAGNOSIS PENYAKIT KULIT
PADA KUCING JENIS PERSIA DENGAN METODE FUZZY
SUGENO</h1></div>
        <p class="text-center"></p>
        <div class="text-center">
        <a href="<?= base_url('controllerdiagnosa/diagnosa'); ?>"
class="btn btn-primary text-center">Diagnosis Penyakit</a>
        </div>
        <br><br><br><br><br><br><br><br>
        </div>
    </div>
</div>
</div>

```

halaman-pengetahuan.php

```

<div class="page-wrapper">
    <div class="page-breadcrumb bg-white">
        <div class="row align-items-center">
            <div class="col-lg-3 col-md-4 col-sm-4 col-xs-12">
                <h4 class="page-title">Pengetahuan</h4>
            </div>
            <div class="col-lg-9 col-sm-8 col-md-8 col-xs-12">
                <div class="d-md-flex">
                </div>
            </div>
        </div>
    </div>
    <div class="container-fluid">
        <div class="row">
            <div class="col-md-12">
                <div class="white-box">
                    <table class="table">
                        <tr>
                            <th>No</th>
                            <th>Nama Penyakit</th>
                            <th>Gejala</th>
                        </tr>
                        <?php
                        $no = 1;
                        foreach($rule as $key => $r): ?>

```

```

        <tr>
            <td><?= $no++; ?></td>
            <td ><?= $key; ?></td>
            <td>
                <ul>
                    <?php foreach($r as $key2 => $g): ?>
                        <?= $key2 ?>
                        <hr>
                        <?php foreach($g as $key3 => $gejala): ?>
                            <li><?= $gejala; ?></li>
                        <?php endforeach; ?>
                        <hr>
                    <?php endforeach; ?>
                </ul>
            </td>
        </tr>
    <?php endforeach; ?>
</table>
</div>
</div>
</div>
</div>

```

halaman-penyakit.php

```

<div class="page-wrapper">
    <div class="page-breadcrumb bg-white">
        <div class="row align-items-center">
            <div class="col-lg-3 col-md-4 col-sm-4 col-xs-12">
                <h4 class="page-title">Penyakit</h4>
            </div>
            <div class="col-lg-9 col-sm-8 col-md-8 col-xs-12">
                <div class="d-md-flex">
                </div>
            </div>
        </div>
    </div>
</div>
<div class="container-fluid">
    <div class="row">
        <div class="col-md-12">
            <div class="white-box">
                <table class="table">
                    <tr>

```

```
<th>No</th>
<th>Gambar Penyakit</th>
<th>Nama Penyakit</th>
<th>Keterangan Penyakit</th>
<th>Solusi Penyakit</th>
</tr>
<?php
$no=1;
foreach($penyakit as $p): ?>
<tr>
<td><?= $no++ ?></td>
<td>
<a target="_blank" href="<?=
base_url("assets/gambar/$p[foto_penyakit]") ?>">"></a>
</td>
<td><?= $p['nama_penyakit']; ?></td>
<td><?= $p['keterangan_penyakit']; ?></td>
<td><?= nl2br($p['solusi_penyakit']) ?></td>
</tr>
<?php endforeach; ?>
</table>
</div>
</div>
</div>
</div>
```