LAMPIRAN

Source Code

Aplikasi *Multiple Face Recognition* untuk Presensi Kelas di Teknik Informatika Universitas Darma Persada menggunakan Metode LBPH (*Local Binary Pattern Histogram*)

login.php

```
1. <!DOCTYPE html>
2. <html lang="en">
3. <head>
4. <title>Sistem
   Informasi Akademik
   Universitas Darma
   Persada
   Jakarta</title>
5. <!-- <meta
   charset="utf-8">
6. <meta name="viewport"
   content="width=device-
   width, initial-
   scale=1.0">
7. <link rel="stylesheet"
   href="https://maxcdn.b
   ootstrapcdn.com/bootst
   rap/3.3.7/css/bootstra
   p.min.css">
8. <script
   src="https://ajax.goog
   leapis.com/ajax/libs/j
   query/3.2.0/jquery.min
   .js"></script>
9. <script
   src="https://maxcdn.bo
   otstrapcdn.com/bootstr
   ap/3.3.7/js/bootstrap.
   min.js"></script> -->
10. <link
    rel="stylesheet"
    href="https://cdnjs.cl
    oudflare.com/ajax/libs
    /meyer-
    reset/2.0/reset.min.cs
    s">
11. <!-- logo di tab -->
12. <link
    href="gambar/logo.png"
    rel="icon"
    type="image/x-icon" />
13. <link
    rel="stylesheet"
    href="assets/css/style
    .css">
14. </head>
15. <body>

16. <script
    src="https://maxcdn.bo
    otstrapcdn.com/bootstr
    ap/3.3.7/js/bootstrap.
    min.js"></script>
17. </head>
18. <body>
19. <div
    class="container">
20. <div class="login">
21. <div class="collapse
    navbar-collapse"
    id="collapsibleNavbar"
    >
22. <ul class="navbar-
    nav">
23. <li class="nav-
    item">
24. <a class="navbar-
    brand" href="#"><img
    src="gambar/favicon.pn
    g" style="height:
    40px;"></a>
```

```
25. </li>
26. <li class="nav-
    item">
27. <ul style="color:
    white; padding-left:
    5px;" type="none">
28. <li style="font-
    size: 18px;">Sistem
    Informasi
    Akademik</li>
29. <li style="font-
    size:
    12px;"><i>Universitas
    Darma Persada</i></li>
30. </ul>
31. </li>
32. </ul>
33. </div>
34. <br><br>
35. <h1 class="login-
    heading">
36. Please login.</h1>
37. <form
    action="config/loginpr
    oses.php"
    method="POST"
    role="form">
38. <input type="text"
    name="nimnik"
    placeholder="Akun
    Pengguna"
    required="required"
    class="input-txt" />
39. <input
    type="password"
    name="password"
    placeholder="Password"
    required="required"
    class="input-txt" />
40. <div class="login-
    footer">

41. <button
    type="submit"
    role="button"
    name="login"
    class="btn btn--right"
    value="Login">Sign in
    </button>
42. </div>
43. </form>
44. </div>
45. </div>
46. <script
    src="assets/js/index.j
    s"></script>
47. </body>
48. </html>
49. index.php
50. <?php
51. //menyambungkan
    koneksi
52. include
    '../config/koneksi.php
    ';
53. $nimnik =
    $_GET['nimnik'];
54. $sql = "SELECT *
    FROM akademik.user
    WHERE nimnik =
    '$nimnik'";
55. $hasil =
    pg_query($sql);
56. while($data=pg_fetch
    _array($hasil))
57. {
58. session_start();
59. if(isset($_SESSION['
    nimnik']))
60. {
61. if(isset($_GET['page
    '])) $page =
    $_GET['page'];
62. else $page =
    'index';
63. include
    "section.php";
64. }else {
65. header("location:../
    index.php");
66. }
67. }
68. ?>
```

presensi-face.php

```
1. <script
   type="text/javascript"
   >
2. function
   detail(id,kelas) {
3. // alert(id+"
   "+kelas);
4. $('#myModal').modal('s
   how');
5. $.ajax({
6. url:'doAjaxDetail.php'
   ,
7. type:'POST',
      data:{idjadwal:id,id
   kelas:kelas},
8. success:function(resul
   t){
9. console.log(result);
10. var obj =
   JSON.parse(result);
11. var html = "";
12. var selected =
   "selected";
13. $.each(obj,function(
   i,val){
14. var option = "";
15. html += '<tr
   align="center">';
16. html += '
   <td>'+val.no+'</td>';
17. html += '
   <td>'+val.nim+'</td>';
18. if (val.status ==
   'Alfa') {
19. option = '<option
   value="A"
   '+selected+'>Alfa</opt
   ion>';
20. } else if(val.status
   == 'Hadir')  {
21. option = '<option
   value="H"
   '+selected+'>Hadir</op
   tion>';
22. } else if(val.status
   == 'Sakit') {
23. option = '<option
   value="S"
   '+selected+'>Sakit</op
   tion>';
24. } else {
25. option = '<option
   value="I"
   '+selected+'>Izin</opt
   ion>';
26. }
27. html += '<td>';
28. html +=   '<select
   name="statushadir"
   class="custom-select
   col-sm-5" style="font-
   size: 12px;">';
29. html +=   option;
30. html += '</td>';
31. html += '</tr>';
32. $('#htmlTd').html(ht
   ml);
33. });
34. },
35. error:function(err)
   {
36. console.log(err)
37. }
38. });
39. }
40. </script>
41. <!DOCTYPE html>
42. <html>
43. <head>
44. <title>Capture
   image</title>
45. <script
   src="https://cdnjs.clo
   udflare.com/ajax/libs/
   jquery/3.3.1/jquery.mi
   n.js"></script>
46. <script
   src="https://cdnjs.clo
   udflare.com/ajax/libs/
   webcamjs/1.0.25/webcam
   .min.js"></script>
47. <link
   rel="stylesheet"
   href="https://cdnjs.cl
   oudflare.com/ajax/libs
```

```
/twitter-
bootstrap/4.1.3/css/bo
otstrap.min.css" />
48. <style
type="text/css">
49. #results {
padding:10px;
border:1px solid; }
50. </style>
51. </head>
52. <body>
53. <?php
54. include
"../config/koneksi.php
";
55. $idjadwal =
$_GET['idjadwal'];
56. $query =
pg_query($conn,"SELECT
* FROM
akademik.ak_perkuliaha
n WHERE idjadwal =
'$idjadwal'");
57. $hasill =
pg_fetch_array($query)
;
58. ?>
59. <div
class="container">
60. <?php
61. $idkelas =
$_GET['idkelas'];
62. $sql4 = "SELECT *
FROM akademik.ak_kelas
WHERE
ak_kelas.idkelas='$idk
elas'";
63. $hasil4 =
pg_query($sql4);
64. $data4 =
pg_fetch_array($hasil4
);
65. ?>
66. <div class="row">
67. <div class="col-sm-
6">
68. <h4>Presensi
Kelas</h4>
69. </div>

70. <div class="col-sm-
6" align="right"
style="font-size:
12px;">
71. <i class="fas fa-
table"></i>
72. <a
href="index.php?page=i
ndex&&nimnik=<?php
echo
$data['nimnik'];?>"
style="color:
black;">Home</a>
73. <a>  &nbsp
;>   </
a>
74. <a
href="index.php?page=p
resensi&&nimnik=<?php
echo
$data['nimnik'];?>"
style="color:
black;">Presensi</a>
75. <a>  &nbsp
;>   </
a>
76. <a
href="index.php?page=l
presensi&&nimnik=<?php
echo
$data['nimnik'];?>&&id
kelas=<?php echo
$data4['idkelas'];?>"
style="color:
black;">Presensi
Kelas</a>
77. <a>  &nbsp
;>   </
a>
78. <strong>Face
Recognition</strong>
79. </div>
80. </div>
81. </div>
82. <div
class="container"
style="padding-bottom:
10px; padding-top:
```

```
10px; background:
    white;">
83. <!-- <input
    type="hidden"
    name="nim"
    class="form-control"
    readonly value="<?php
    echo
    $hasill['idjadwal']
    ?>"> -->
84. <form method="POST"
    action="index.php?page
    =savepict&&nimnik=<?ph
    p echo
    $data['nimnik'];?>&&id
    jadwal=<?php echo
    $hasil['idjadwal'];?>"
    id="facerec">
85. <input type="hidden"
    name="idjadwal"
    class="form-control"
    readonly value="<?php
    echo
    $hasill['idjadwal']
    ?>">
86. <div class="row">
87. <div class="col-md-
    6">
88. <div
    id="my_camera"></div>
89. <br/>
90. <input type=button
    class="btn btn-info"
    value="Take Snapshot"
    onClick="take_snapshot
    ()">
91. <input type="hidden"
    name="image"
    class="image-tag">
92. </div>
93. <div class="col-md-
    6">
94. <div
    id="results">Your
    captured image will
    appear here...</div>
95. </div>
96. <div class="col-md-
    12 text-center">
97. <input type="hidden"
    name="res" id="val">
98. <button type=
    "button" class="btn
    btn-success"
    id="process">Process</
    button>
99. </div>
100. <!-- <div
    class="col-md-6"
    style="margin-top:
    20px; margin-bottom:
    20px;">
101. <input type="file"
    class="custom-file-
    input" id="customFile"
    name="filename">
102. <label
    class="custom-file-
    label"
    for="customFile">Choos
    e file</label>
103. </div> -->
104. </div>
105. </form>
106. <div class="row">
107. <!-- Modal -->
108. <div class="modal
    fade" id="modal-hasil"
    tabindex="-1"
    role="dialog" aria-
    labelledby="myModalLab
    el">
109. <div class="modal-
    dialog"
    role="document">
110. <div class="modal-
    content">
111. <div class="modal-
    header">
112. <center><h4><strong>
    Analisis Penjualan
    <i>E-ticketing</i> Bus
    DAMRI Segmen Antar
    Kota Cabang Bandar
    Lampung</strong></h4></
    /center>
113. <h4 class="form-
    wording"
```

```
id="myModalLabel"></h4
>
114. </div>
115. <div class="modal-
body">
116. <span id="result"
style="display: block;
font-weight: bold;
text-align:
center;"></span>
117. <h5><b><span
class="solusi"
></span></b></h5>
118. </div>
119. </div>
120. </div>
121. </div>
122. </div>
123. <!-- Configure a few
settings and attach
camera -->
124. <script
type="text/javascript"
>
125. Webcam.set({
126. width: 490,
127. height: 370,
128. image_format:
'jpeg',
129. jpeg_quality: 90
130. });
131. Webcam.attach(
'#my_camera' );
132. function
take_snapshot() {
133. Webcam.snap(
function(data_uri) {
134. $(".image-
tag").val(data_uri)
document.getElementB
yId('results').innerHT
ML = '<img
src="'+data_uri+'"/>';
135. processingfile(data_
uri);
136. });
137. }
```

```
138. function
processingfile(result)
{
139. //store temp file
foto
140. $.ajax({
141. type:'POST',
142. url:'storeimagetmp.p
hp',
143. data:
{result:result},
144. success:function(res
p) {
145. var a =
JSON.parse(resp);
146. $('#val').val(a.data
);
147. }
148. });
149. }
150. reloadserve();
151. $('#process').click(
function(e){
152. e.preventDefault();
153. var data =
$('#val').val();
154. var idjadwal =
"<?php echo
$_GET['idjadwal'];?>";
155. $.ajax({
156. url :
'http://127.0.0.1:5000
/facerec',
157. type : 'POST',
158. data :
{res:data,jadwal:idjad
wal},
159. success :
function(response) {
160. console.log(response
.data.nim , "NIM")
161. var id =
response.data.nim;
162. reloadserve();
163. checknim(id,idjadwal
);
164. },
165. error :
function(err) {
```

```
166. alert('eror');
167. }
168. });
169. });
170. function
     checknim(nim,jadwal,id
     kelas) {
171. $.ajax({
172. url :
     'doCheckNim.php',
173. type: 'POST',
174. data :
     {nim:nim,idjadwal:jadw
     al},
175. success :
     function(response) {
176. console.log(response
     , "CEK DATA")
177. var val =
     JSON.parse(response);
178. if (val.result == 1)
     {
179. alert('NIM Sudah
     Melakukan Presensi');
180. } else if(val.result
     == 2) {
181. alert('NIM Tidak
     Terdaftar');
182. } else {
183. alert('NIM Berhasil
     diinput');
184. }
185. },
186. error :
     function(err) {
187. alert('error');
188. }
189. });
190. }
191. function
     reloadserve() {
192. $.ajax({
193. url :
     'http://127.0.0.1:5000
     /restart',
194. type: 'GET',
195. //data : "",
196. success :
     function(response) {
197. console.log(response
     )
198. },
199. error :
     function(err) {
200. alert('error');
201. }
202. });
203. }
204. </script>
205. </html>
```

main.py

```
1. import cv2
2. import numpy as np
3. from PIL import Image
4. import os
5. import datetime
6. import csv
7. import pandas as pd
8. import sys
9. import time
10. from flask import
    Flask, jsonify, abort,
    request,
    make_response,
    url_for,
    render_template
11. from flask_cors
    import CORS,
    cross_origin
12. from multiprocessing
    import Process, Queue
13. import psycopg2
14. import subprocess
15. connection =
    psycopg2.connect(user=
    "postgres",
16. password="pwpostgres
    ",
17. host="localhost",
    port="5432",database="
    akademik")
18. cursor =
    connection.cursor()
19. some_queue = None
20. app =
    Flask(__name__)
```

```python
21.  cors = CORS(app)
22.  to_reload = False
23.  def reload():
24.  global to_reload
25.  to_reload = True
26.  return "reloaded"
27.  @app.errorhandler(40
     0)
28.  def
     not_found(error):
29.  return
     make_response(jsonify(
     { 'error': 'Bad
     request' } ), 400)
30.  @app.errorhandler(40
     4)
31.  def
     not_found(error):
32.  return
     make_response(jsonify(
     { 'error': 'Not found'
     } ), 404)
33.  @app.route('/',
     methods = ['GET'])
34.  def index():
35.  return
     render_template('index
     .html')
36.  @app.route('/facerec
     ', methods = ['POST'])
37.  def facerec():
38.  getidjadwal =
     str(request.form['jadw
     al']);
39.  images_path =
     "dosen/"+str(request.f
     orm['res']);
40.  recognizer =
     cv2.face.LBPHFaceRecog
     nizer_create()
41.  recognizer.read('tra
     iner/trainer.yml')
42.  faceCascade =
     cv2.CascadeClassifier(
     'assets/cascades/data/
     haarcascade_frontalfac
     e_default.xml');
43.  img =
     cv2.imread(images_path
     )
44.  font =
     cv2.FONT_HERSHEY_SIMPL
     EX
45.  nim = "";
46.  gray =
     cv2.cvtColor(img,cv2.C
     OLOR_BGR2GRAY)
47.  faces =
     faceCascade.detectMult
     iScale(gray, 1.3,5)
48.  for(x,y,w,h) in
     faces:
49.  cv2.rectangle(img,
     (x-20,y-20),
     (x+w+20,y+h+20),
     (0,255,0), 2)
50.  Id, conf =
     recognizer.predict(gra
     y[y:y+h,x:x+w])
51.  if(Id > 50) : #ini
     ambigu
52.  ts = time.time()
53.  date =
     datetime.datetime.from
     timestamp(ts).strftime
     ('%Y-%m-%d')
54.  timeStamp =
     datetime.datetime.from
     timestamp(ts).strftime
     ('%H:%M:%S')
55.  tt = str(Id)
56.  cv2.putText(img,
     str(nama+tt), (x,y+h),
     font, 1,
     (255,255,255), 1)
57.  cv2.imshow('img',img
     )
58.  cv2.waitKey(5000)
59.  cv2.destroyAllWindow
     s()
60.  response = {
61.  'nim' : nim
62.  }
63.  return jsonify({
64.  'data' : response
65.  })
```

```python
66.  @app.route('/restart', methods = ['GET'])
67.  def restart():
68.  try:
69.  some_queue.put("something")
70.  print ("Restarted successfully")
71.  return "Quit"
72.  except:
73.  return "Failed"
74.  def start_flaskapp(queue):
75.  global some_queue
76.  some_queue = queue
77.  app.run()
78.  if __name__ == '__main__':
79.  q = Queue()
80.  p = Process(target=start_flaskapp, args=[q,])
81.  p.start()
82.  while True:
83.  if q.empty():
84.  time.sleep(1)
85.  else:
86.  break
87.  p.terminate()
88.  args = [sys.executable] + [sys.argv[0]]
89.  subprocess.call(args)
```