

LAMPIRAN

Source code Halaman Login

```
@extends('layout.defaultLayout')
@section('body')
  <div class=" w-full h-screen flex justify-center items-center bg-blue-400">
    <div class=" bg-white p-5 rounded-md" style="width:500px">
      <div class="flex justify-center">
        
      </div>
      <div class=" text-4xl font-bold mb-5 text-blue-950">Login</div>
      <form class="flex flex-col gap-5" action="" method="POST">
        @csrf
        <div class="flex flex-col">
          <span>Email</span>
          <input name="email" placeholder="Example@gmail.com" class=" bg-gray-200 p-2 rounded-md" />
        </div>
        <div class="flex flex-col">
          <span>Password</span>
          <input name="password" type="password" class=" bg-gray-200 p-2 rounded-md" />
        </div>
        <button type="submit" class="bg-blue-500 p-2 rounded-md text-white font-semibold">Login</button>
      </form>
    </div>
  </div>
@endsection
```

Source code Halaman Dashboard

```
@extends('layout.mainLayout')
{{-- @section('head')
  <script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
@endsection --}}
@section('container')
  <div class="p-5 flex gap-3">
    <div class=" p-5 border">
      <div class=" font-semibold text-4xl flex justify-center p-2">
        PANDUAN MENGGUNAKAN SISTEM
      </div>
      <div>
        <br>
        <br>
        <div class=" font-semibold">Langkah 1: Penginputan Data Penduduk</div>
        Pertama-tama, Inputkan data masyarakat dengan cara mengisi form
        penginputan data penduduk yang sudah disediakan oleh sistem, lalu sistem akan
```

menampilkan data yang telah di inputkan. Di dalam sistem juga terdapat tools untuk edit dan delete pada setiap data penduduk.

```
<br>
```

```
<br>
```

```
<div class=" font-semibold">Langkah 2: Proses Clustering Data</div>
```

Untuk memulai proses clustering menggunakan Algoritma Pillar K-Means, tekan tombol "Lakukan Proses Clustering data", dan sistem akan melakukan proses clustering data. Setelah proses clustering selesai sistem akan menampilkan hasil perhitungannya.

```
<br>
```

```
<br>
```

```
<div class=" font-semibold">Langkah 3: Laporan Clustering</div>
```

Untuk melihat hasil analisis clustering data, tekan tombol "Laporan Clustering" yang ada di side menu.

```
<br>
```

```
<br>
```

```
<div class=" font-semibold">Langkah 4: Menu Admin</div>
```

Jika ingin menambahkan admin baru, tekan tombol "Tambah Admin" lalu sistem akan menampilkan form pengisian data admin baru dan jika sudah mengisi silahkan klik tombol "simpan" untuk menyelesaikan proses penambahan admin.

```
<br>
```

```
<br>
```

```
</div>
```

```
</div>
```

```
</div>
```

```
@endsection
```

```
{{-- @section('script')
```

```
<script>
```

```
const ctx = document.getElementById('penduduk');
```

```
new Chart(ctx, {
```

```
  type: 'pie',
```

```
  data: {
```

```
    labels: @js($label),
```

```
    datasets: [{
```

```
      label: 'Jumlah keluarga ',
```

```
      data: @js($cnt),
```

```
      borderWidth: 1
```

```
    ]
```

```
  }
```

```
});
```

```
const ctx2 = document.getElementById('cluster');
```

```
new Chart(ctx2, {
```

```
  type: 'bar',
```

```
  data: {
```

```
    labels: ['Mampu', 'Cukup', 'Tidak mampu'],
```

```
    datasets: [{
```

```
      label: 'Jumlah keluarga ',
```

```
      data: @js($by_perhitungan),
```

```
      borderWidth: 1
```

```
    ]
```

```
  }
```

```

    }
  });
</script>
@endsection --}}

```

Source code Halaman Data Penduduk

```

@extends('layout.mainLayout')
@section('container')
  <div class="p-5">
    <div class="flex justify-end">
      {{-- <form class="flex items-end gap-3">
        <div class="flex flex-col">
          @php
            $rtwr = ['RT01 RW01', 'RT02 RW01', 'RT03 RW02', 'RT04 RW02',
RT05 RW02', 'RT06 RW02'];
          @endphp
          <select name="rt_rw" class=" p-3 bg-gray-200 rounded-md">
            <option value="">Semua</option>
            @foreach ($rtwr as $i)
              <option {{ request()->get('rt_rw') == $i ? 'selected' : '' }} value="{{ $i
}}">
                {{ $i }}
              </option>
            @endforeach
          </select>
        </div>
        <button class="bg-blue-500 p-3 rounded-md text-white">Filter</button>
      </form> --}}
      <a href="{{ route('data_penduduk_form') }}" class="bg-blue-500 p-3 rounded-
md text-white">Tambah</a>
    </div>
    <div class="py-5">
      <table class="w-full border">
        <thead>
          <tr>
            <th class="p-3 bg-blue-400 text-blue-950">No</th>
            <th class="p-3 bg-blue-400 text-blue-950">Nama Kepala keluarga</th>
            <th class="p-3 bg-blue-400 text-blue-950">Usia</th>
            <th class="p-3 bg-blue-400 text-blue-950">Penghasilan</th>
            <th class="p-3 bg-blue-400 text-blue-950">Jumlah Keluarga</th>
            <th class="p-3 bg-blue-400 text-blue-950">Jumlah Tanggungan Anak
Sekolah</th>
            <th class="p-3 bg-blue-400 text-blue-950">Status Rumah</th>
            <th class="p-3 bg-blue-400 text-blue-950">Jenis Lantai</th>
            <th class="p-3 bg-blue-400 text-blue-950">Jenis Dinding</th>
            <th class="p-3 bg-blue-400 text-blue-950">Tools</th>
          </tr>
        </thead>
        <tbody>

```

```

@foreach ($penduduk as $idx => $p)
    <tr>
        <td class="p-3 border border-gray-500">{{ $idx + 1 }}</td>
        <td class="p-3 border border-gray-500">{{ $p-
>nama_kepala_keluarga }}</td>
        <td class="p-3 border border-gray-500">{{ $p->usia }}</td>
        <td class="p-3 border border-gray-500">Rp. {{ number_format($p-
>penghasilan) }}</td>
        <td class="p-3 border border-gray-500">{{ $p->jumlah_keluarga
}}</td>
        <td class="p-3 border border-gray-500">{{ $p-
>jumlah_tanggung_anak_sekolah }}</td>
        <td class="p-3 border border-gray-500">{{ $p->status_rumah->nama
}}</td>
        <td class="p-3 border border-gray-500">{{ $p->jenis_lantai->nama
}}</td>
        <td class="p-3 border border-gray-500">{{ $p->jenis_dinding->nama
}}</td>
        <td class="p-3 border border-gray-500">
            <a href="{{ route('data_penduduk_form', ['id' => $p->id]) }}"
            class="text-blue-600">Edit</a>
            <a href="{{ route('data_penduduk_delete', ['id' => $p->id]) }}"
            class="text-red-600">Delete</a>
        </td>
    </tr>
    {{-- <tr>
        <td class="p-3 border border-gray-500">{{ $idx + 1 }}</td>
        <td class="p-3 border border-gray-500">{{ $p->rt_rw }}</td>
        <td class="p-3 border border-gray-500">{{ $p-
>nama_kepala_keluarga }}</td>
        <td class="p-3 border border-gray-500">{{ $p-
>jumlah_tanggungans->nama }}</td>
        <td class="p-3 border border-gray-500">{{ $p->ijazah_tertinggi-
>nama }}</td>
        <td class="p-3 border border-gray-500">{{ $p->jenis_pekerjaan-
>nama }}</td>
        <td class="p-3 border border-gray-500">
            <a href="{{ route('data_penduduk_form', ['id' => $p->id]) }}"
            class="text-blue-600">Edit</a>
            <a href="{{ route('data_penduduk_delete', ['id' => $p->id]) }}"
            class="text-red-600">Delete</a>
        </td>
    </tr> --}}
    @endforeach
</tbody>
</table>
</div>
</div>
</div>
@endsection

```

Source code Halaman Form Tambah Data Penduduk

```
@extends('layout.mainLayout')
@section('container')
    <div class="p-5 w-1/2">
        <form action="" method="POST" class="flex flex-col gap-5">
            @csrf
            <div class="flex flex-col gap-2">
                <span>Nama kepala keluarga</span>
                <input value="{{ $keluarga ? $keluarga['nama_kepala_keluarga'] : '' }}"
name="nama_kepala_keluarga"
placeholder="sukirman" class="p-2 bg-gray-200" />
            </div>
            <div class="flex flex-col gap-2">
                <span>Usia</span>
                <input type="number" value="{{ $keluarga ? $keluarga['usia'] : '' }}"
name="usia" placeholder="XX"
class="p-2 bg-gray-200" />
            </div>
            <div class="flex flex-col gap-2">
                <span>Penghasilan</span>
                <input type="number" value="{{ $keluarga ? $keluarga['penghasilan'] : '' }}"
name="penghasilan"
placeholder="XX" class="p-2 bg-gray-200" />
            </div>
            <div class="flex flex-col gap-2">
                <span>Jumlah Keluarga</span>
                <input type="number" value="{{ $keluarga ? $keluarga['jumlah_keluarga'] :
'' }}" name="jumlah_keluarga"
placeholder="XX" class="p-2 bg-gray-200" />
            </div>
            <div class="flex flex-col gap-2">
                <span>Jumlah Tanggungan Anak Sekolah</span>
                <input type="number" value="{{ $keluarga ?
$keluarga['jumlah_tanggungan_anak_sekolah'] : '' }}"
name="jumlah_tanggungan_anak_sekolah" placeholder="XX" class="p-2
bg-gray-200" />
            </div>
            <div class="flex flex-col gap-2">
                <span>Status Rumah</span>
                <select name="id_status_rumah" class="p-2 bg-gray-200">
                    @foreach ($status_rumah as $jt)
                        <option {{ $keluarga ? ($keluarga['id_status_rumah'] == $jt->id ?
'selected' : '') : '' }}
value="{{ $jt->id }}">
                            {{ $jt->nama }}</option>
                    @endforeach
                </select>
            </div>
            <div class="flex flex-col gap-2">
                <span>Jenis Lantai</span>
            </div>
        </form>
    </div>
</section>
```

```

<select name="id_jenis_lantai" class="p-2 bg-gray-200">
  @foreach ($jenis_lantai as $jt)
    <option {{ $keluarga ? ($keluarga['id_jenis_lantai'] == $jt->id ? 'selected'
: ") : " }}
      value="{{ $jt->id }}">
      {{ $jt->nama }}</option>
  @endforeach
</select>
</div>
<div class="flex flex-col gap-2">
  <span>Jenis Dinding</span>
  <select name="id_jenis_dinding" class="p-2 bg-gray-200">
    @foreach ($jenis_dinding as $jt)
      <option {{ $keluarga ? ($keluarga['id_jenis_dinding'] == $jt->id ?
'selected' : ") : " }}
        value="{{ $jt->id }}">
        {{ $jt->nama }}</option>
    @endforeach
  </select>
</div>
{{-- <div class="flex flex-col gap-2">
  <span>Jumlah Tanggungan</span>
  <select name="id_jumlah_tanggungan" class="p-2 bg-gray-200">
    @foreach ($jumlah_tanggungan as $jt)
      <option {{ $keluarga ? ($keluarga['id_jumlah_tanggungan'] == $jt->id ?
'selected' : ") : " }}
        value="{{ $jt->id }}">
        {{ $jt->nama }}</option>
    @endforeach
  </select>
</div>
<div class="flex flex-col gap-2">
  <span>Ijazah Tertinggi</span>
  <select name="id_ijazah_tertinggi" class="p-2 bg-gray-200">
    @foreach ($ijazah_tertinggi as $it)
      <option {{ $keluarga ? ($keluarga['id_ijazah_tertinggi'] == $it->id ?
'selected' : ") : " }}
        value="{{ $it->id }}">{{ $it->nama }}</option>
    @endforeach
  </select>
</div>
<div class="flex flex-col gap-2">
  <span>Jenis Pekerjaan</span>
  <select name="id_jenis_pekerjaan" class="p-2 bg-gray-200">
    @foreach ($jenis_pekerjaan as $jp)
      <option {{ $keluarga ? ($keluarga['id_jenis_pekerjaan'] == $jp->id ?
'selected' : ") : " }}
        value="{{ $jp->id }}">{{ $jp->nama }}</option>
    @endforeach
  </select>

```

```

</div>
<div class="flex flex-col gap-2">
  <span>RT/RW</span>
  @php
    $rt_rw = ['RT01 RW01', 'RT02 RW01', 'RT03 RW02', 'RT04 RW02', 'RT05
RW02', 'RT06 RW02'];
  @endphp
  <select name="rt_rw" class="p-2 bg-gray-200">
    @foreach ($rt_rw as $jpw)
      <option {{ $keluarga ? ($keluarga['rt_rw'] == $jpw ? 'selected' : '') : '' }}
value="{{ $jpw }}">{{ $jpw }}</option>
    @endforeach
  </select>
</div> --}}
<div class="flex justify-end">
  <button class="p-3 font-semibold bg-blue-500 rounded-md text-
white">Simpan</button>
</div>
</form>
</div>
@endsection

```

Source code Halaman Proses Clustering

```

@extends('layout.mainLayout')
@section('container')
  <div class="p-5">
    <div class="flex flex-col gap-5 mt-5">
      @foreach ($k_mean as $i => $data)
        <div class="border rounded-md">
          <div class="p-5 bg-blue-400 font-semibold sticky top-12">
            Iterasi Ke {{ $i + 1 }}
          </div>
          <div class="p-5 flex flex-col gap-5">
            <div class="border w-full rounded-md">
              <div class="p-3 bg-gray-200">Centroid</div>
              <table class="w-full">
                <thead>
                  <tr>
                    <th class="p-2 border"></th>
                    <th class="p-2 border">A</th>
                    <th class="p-2 border">B</th>
                    <th class="p-2 border">C</th>
                    <th class="p-2 border">D</th>
                    <th class="p-2 border">F</th>
                    <th class="p-2 border">G</th>
                  </tr>
                </thead>
                <tbody>

```

```

@foreach ($data['centroid'] as $c => $dccc)
  <td class="p-2 border w-40">Centroid {{ $c + 1 }}</td>
  <td class="p-2 border">{{ $dccc[0] }}</td>
  <td class="p-2 border">{{ $dccc[1] }}</td>
  <td class="p-2 border">{{ $dccc[2] }}</td>
  <td class="p-2 border">{{ $dccc[4] }}</td>
  <td class="p-2 border">{{ $dccc[5] }}</td>
  <td class="p-2 border">{{ $dccc[6] }}</td>
</tr>
@endforeach

</tbody>
</table>
</div>
<div class="border rounded-md">
  <div class="p-3 bg-gray-200">Perhitungan</div>
  <table class="w-full">
    <thead>
      <tr>
        <th class="p-3 border">No</th>
        <th class="p-3 border">Nama</th>
        <th class="p-3 border">C1</th>
        <th class="p-3 border">C2</th>
        <th class="p-3 border">Centroid terdekat</th>
      </tr>
    </thead>
    <tbody>
      @foreach ($keluarga as $i => $kk)
        <tr>
          <td class="p-3 border">{{ $i + 1 }}</td>
          <td class="p-3 border">{{ $kk->nama_kepala_keluarga
}}</td>
          <td
            class="p-3 border {{ $data['oh_centroid'][$kk->id] == 0 ?
'bg-blue-100' : " }}">
            {{ $data['jarak_ke_centroid'][$kk->id][0] }}
          </td>
          <td
            class="p-3 border {{ $data['oh_centroid'][$kk->id] == 1 ?
'bg-blue-100' : " }}">
            {{ $data['jarak_ke_centroid'][$kk->id][1] }}
          </td>
          <td class="p-3 border">
            C{{ $data['oh_centroid'][$kk->id] + 1 }}
          </td>
        </tr>
      @endforeach
    </tbody>
  </table>
</div>

```



```

<div class=" flex gap-3">
  <div class="border rounded-md">
    <div class="p-3 bg-gray-200">Centroid Baru</div>
    <table class="w-full">
      <thead>
        <tr>
          <th class="p-2 border"></th>
          <th class="p-2 border">A</th>
          <th class="p-2 border">B</th>
          <th class="p-2 border">C</th>
          <th class="p-2 border">D</th>
          <th class="p-2 border">F</th>
          <th class="p-2 border">G</th>
        </tr>
      </thead>
      <tbody>
        @foreach ($data['new_centroid'] as $c => $dccc)
          <tr>
            <td class="p-2 border w-40">Centroid {{ $c + 1 }}</td>
            <td class="p-2 border">{{ $dccc[0] }}</td>
            <td class="p-2 border">{{ $dccc[1] }}</td>
            <td class="p-2 border">{{ $dccc[2] }}</td>
            <td class="p-2 border">{{ $dccc[4] }}</td>
            <td class="p-2 border">{{ $dccc[5] }}</td>
            <td class="p-2 border">{{ $dccc[6] }}</td>
          </tr>
        @endforeach
      </tbody>
    </table>
  </div>
  <div class="border rounded-md">
    <div class="p-3 bg-gray-200">J</div>
    <div class="p-3">
      {{ $data['J'] }}
    </div>
  </div>
</div>
</div>
</div>
@endforeach
</div>
</div>
@endsection

```

Source code Halaman Laporan Clustering

```

@extends('layout.mainLayout')
@php
    $c1 = [];
    $c2 = [];

```

```

@endphp
@section('container')
    <div class="p-5 flex flex-col gap-5">
        <div class=" rounded-md border p-2 font-semibold text-xl">
            Hasil Proses Clustering Data Penduduk
        </div>
        <div class="flex flex-col gap-5 mt-5">
            @foreach ($k_mean as $i => $data)
                <div class=" border rounded-md">
                    <div class="p-5 bg-blue-400 font-semibold sticky top-12">
                        Iterasi Ke {{ $i + 1 }}
                    </div>
                    <div class="p-5 flex flex-col gap-5">
                        <div class="border rounded-md">
                            <div class="p-3 bg-gray-200">Perhitungan</div>
                            <table class="w-full">
                                <thead>
                                    <tr>
                                        <th class="p-3 border">No</th>
                                        <th class="p-3 border">Nama Kepala Keluarga</th>
                                        <th class="p-3 border">C1</th>
                                        <th class="p-3 border">C2</th>
                                    </tr>
                                </thead>
                                <tbody>
                                    @foreach ($keluarga as $i => $kk)
                                        <tr>
                                            <td class="p-3 border">{{ $i + 1 }}</td>
                                            <td class="p-3 border">{{ $kk->nama_kepala_keluarga
                                            </td>
                                            <td class="p-3 border ">
                                                @if ($data['oh_centroid'][$kk->id] == 0)
                                                    @php
                                                        $c1[] = $kk->nama_kepala_keluarga;
                                                    @endphp
                                                    <i class="fa fa-check " style="color:green"></i>
                                                @else
                                                    <i class="fa fa-remove " style="color:red"></i>
                                                @endif
                                            </td>
                                            <td class="p-3 border ">
                                                @if ($data['oh_centroid'][$kk->id] == 1)
                                                    @php
                                                        $c2[] = $kk->nama_kepala_keluarga;
                                                    @endphp
                                                    <i class="fa fa-check " style="color:green"></i>
                                                @else
                                                    <i class="fa fa-remove " style="color:red"></i>
                                                @endif
                                            </td>
                                        </tr>
                                    </tbody>
                                </table>
                            </div>
                        </div>
                    </div>
                </div>
            @endforeach
        </div>
    </div>

```

```

        </tr>
        @endforeach
    </tbody>
</table>
</div>
</div>
</div>
</div>
@endforeach
</div>
<div class="flex border p-5 justify-center gap-5 items-start">
    <table>
        <thead>
            <tr>
                <th class=" border p-2">No</th>
                <th class=" border p-2">Cluster 1</th>
            </tr>
        </thead>
        <tbody>
            @foreach ($c1 as $i => $c)
                <tr>
                    <td class=" border p-2">{{ $i + 1 }}</td>
                    <td class=" border p-2">
                        {{ $c }}
                    </td>
                </tr>
            @endforeach
        </tbody>
    </table>
    <table>
        <thead>
            <tr>
                <th class=" border p-2">No</th>
                <th class=" border p-2">Cluster 2</th>
            </tr>
        </thead>
        <tbody>
            @foreach ($c2 as $i => $c)
                <tr>
                    <td class=" border p-2">{{ $i + 1 }}</td>
                    <td class=" border p-2">
                        {{ $c }}
                    </td>
                </tr>
            @endforeach
        </tbody>
    </table>
</div>
</div>
@endsection

```

Source code Halaman Cetak Laporan

```
<?php

$con = mysqli_connect('localhost','root','','penduduk_k_means');
function status_rumah($id){
    global $con;
    $status_rumah = mysqli_query($con,"SELECT * FROM status_rumahs WHERE
id=".$id);
    $data = mysqli_fetch_assoc($status_rumah);
    return $data['nilai'];
}

function jenis_lantai($id){
    global $con;
    $status_rumah = mysqli_query($con,"SELECT * FROM jenis_lantais WHERE
id=".$id);
    $data = mysqli_fetch_assoc($status_rumah);
    return $data['nilai'];
}

function jenis_dinding($id){
    global $con;

    $status_rumah = mysqli_query($con,"SELECT * FROM jenis_dinding WHERE
id=".$id);
    $data = mysqli_fetch_assoc($status_rumah);
    return $data['nilai'];
}

function usia_nilai($usia){
    if ($usia <= 35)
        return 4;
    if ($usia <= 49)
        return 3;
    if ($usia <= 60)
        return 2;

    return 1;
}

function penghasilan_nilai($penghasilan){
    if ($penghasilan <= 1000000)
        return 1;
    if ($penghasilan <= 2000000)
        return 2;
    if ($penghasilan <= 3000000)
        return 3;
    if ($penghasilan <= 4000000)
        return 4;
    return 5;
}
```

```

}

function jumlah_keluarga_nilai($jumlah_keluarga){
    if ($jumlah_keluarga <= 2)
        return 3;
    if ($jumlah_keluarga <= 4)
        return 2;
    return 1;
}

function
jumlah_tanggung_anak_sekolah_nilai($jumlah_tanggung_anak_sekolah){
    if ($jumlah_tanggung_anak_sekolah <= 1)
        return 3;
    if ($jumlah_tanggung_anak_sekolah <= 3)
        return 2;
    return 1;
}

function euclid($a, $b){
    $sout = 0;
    if (count($a) == count($b)) {
        for ($i = 0; $i < count($a); $i++) {
            $sout += pow($a[$i] - $b[$i], 2);
        }
    }
    return sqrt($sout);
}

function normalisasi(){
    global $con;

    $keluarga = mysqli_query($con,"SELECT * FROM keluarga");
    $normalisasi = [];

    foreach ($keluarga as $kk) {
        $usia = usia_nilai($kk['usia']);
        $penghasilan = penghasilan_nilai($kk['penghasilan']);
        $jumlah_keluarga = jumlah_keluarga_nilai($kk['jumlah_keluarga']);
        $jumlah_tanggung_anak_sekolah =
jumlah_tanggung_anak_sekolah_nilai($kk['jumlah_tanggung_anak_sekolah']);
        $status_rumah = status_rumah($kk['id_status_rumah']);
        $jenis_lantai = jenis_lantai($kk['id_jenis_lantai']);
        $jenis_dinding = jenis_dinding($kk['id_jenis_dinding']);
        $normalisasi[$kk['id']] = [$usia, $penghasilan, $jumlah_keluarga,
jumlah_tanggung_anak_sekolah,$status_rumah,$jenis_lantai, $jenis_dinding
];
    }
    return $normalisasi;
}

```

```

}

function get_centroid($ncen){
    $norm = normalisasai();

    //cari rata rata

    $sums = array_fill(0, count(array_values($norm)[0]), 0);
    foreach ($norm as $nm) {
        foreach ($nm as $nidx => $n) {
            $sums[$nidx] += $n;
        }
    }

    foreach ($sums as $sidx => $s) {
        $sums[$sidx] = $s / count($norm);
    }

    //get all jarak from sums

    $jaraks = [];
    foreach ($norm as $idc => $nm) {
        $jaraks[$idc] = euclid($nm, $sums);
    }
    arsort($jaraks);
    $kys = array_keys($jaraks);
    $sid_nc = array_splice($kys, 0, $ncen);
    // dd($sid_nc);
    $out = [];
    foreach($sid_nc as $six=>$sid){
        $out[$six]=$norm[$sid];
    }

    // dd($out);
    return $out;
}

function k_means($scen){
    $scentroid = $scen;
    //get nilai
    $nilais = normalisasai();
    $all_data = [];
    $K = 6;
    $J = 1000.0;

    for ($soo = 0; $soo < $K; $soo++) {
        $jarak_ke_centroid = [];
        $scentroid_terpilih = [];
        $oh_centroid = []
    }

```

```

foreach ($nilais as $id => $nil) {
    $ps = [];
    foreach ($centroid as $idx_cen=>$cent) {
        $ukuran = euclid($nil, $cent);
        $ps[$idx_cen] = $ukuran;
    }
    $jarak_ke_centroid[$id] = $ps;
    $key = array_keys($ps, min($ps))[0];
    $oh_centroid[$id] = $key;
    // dd($key);
    if (array_key_exists($key, $centroid_terpilih)) {
        $centroid_terpilih[$key][$id] = $nil;
    } else {
        $centroid_terpilih[$key] = [$id => $nil];
    }
}
$new_centroid = [], [];
foreach ($centroid_terpilih as $i => $ct) {
    foreach ($ct as $cc) {
        foreach ($cc as $j => $ccc) {
            if (array_key_exists($j, $new_centroid[$i])) {
                $new_centroid[$i][$j] += $ccc;
            } else {
                $new_centroid[$i][$j] = $ccc;
            }
        }
    }
    $n_d = count($centroid_terpilih[$i]);
    foreach ($new_centroid[$i] as $j => $nc) {
        $new_centroid[$i][$j] = $nc / $n_d;
    }
}

//hitung j
$j_now = 0;
foreach ($centroid_terpilih as $i => $ct) {
    foreach ($ct as $cc) {
        $ttl = 0;
        foreach ($cc as $j => $ccc) {
            $ttl += pow($ccc - $new_centroid[$i][$j], 2);
        }
        $j_now += $ttl;
    }
}
$J = (array_key_exists($i, $all_data) ? $all_data[$i]['J_now'] : $J) - $j_now;
$all_data[] = ['centroid_terpilih' => $centroid_terpilih, 'jarak_ke_centroid' =>
$jarak_ke_centroid, 'oh_centroid' => $oh_centroid, 'J' => $J, 'J_now' => $j_now,
'centroid' => $centroid, 'new_centroid' => $new_centroid];
// dd($J)

```

```

    $centroid = $new_centroid;
  }
  return $all_data;
}

$scen = get_centroid(2);
$sk_mean = k_means($scen);
$keluarga = mysqli_query($con,"SELECT * FROM keluarga");

?>

<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<title>Hasil Proses Clustering Data Penduduk</title>
<script>
  window.print();
</script>
</head>
<body>
<?php foreach($sk_mean as $i => $data): ?>
  <p style="font-weight:bold">Iterasi Ke <?= $i + 1 ?></p>
  <p>Perhitungan</p>
  <table border="1" cellspacing="0">
    <thead>
      <tr>
        <th>No</th>
        <th>Nama Kepala Keluarga</th>
        <th>C1</th>
        <th>C2</th>
      </tr>
    </thead>
    <tbody>
      <?php foreach($keluarga as $i => $kk): ?>
        <tr>
          <td><?= $i + 1 ?></td>
          <td><?= $kk['nama_kepala_keluarga'] ?></td>
          <td align="center">
            <?php if($data['oh_centroid'][$kk['id']] == 0): ?>
              <?php
                $c1[] = $kk['nama_kepala_keluarga'];
              <?>
              <span style="color:green;font-weight: bold;">V</span>
            <?php else: ?>
              <span style="color:red;font-weight: bold;">X</span>
            <?php endif ?>
          </td>
        </tr>
      </tbody>
    </table>
  <td align="center">

```



```
<?php if($data['oh_centroid'][$kk['id']] == 1): ?>
  <?php
    $c2[] = $kk['nama_kepala_keluarga'];
  ?>
  <span style="color:green;font-weight: bold;">V</span>
<?php else: ?>
  <span style="color:red;font-weight: bold;">X</span>
<?php endif ?>
</td>
</tr>
</tr>
<?php endforeach ?>
</tbody>
</table>
<div style="page-break-after: always;"></div>
<?php endforeach ?>
<table>
<tr style="vertical-align:top">
<td>
  <table border="1" cellspacing="0">
<thead>
<tr>
<th class=" border p-2">No</th>
<th class=" border p-2">Cluster 1</th>
</tr>
</thead>
<tbody>
<?php foreach($c1 as $i => $c): ?>
<tr>
<td class=" border p-2"><?= $i + 1 ?></td>
<td class=" border p-2">
  <?= $c ?>
</td>
</tr>
</tbody>
<?php endforeach ?>
</tbody>
</table>
</td>
<td>
  <table border="1" cellspacing="0">
<thead>
<tr>
<th class=" border p-2">No</th>
<th class=" border p-2">Cluster 2</th>
</tr>
</thead>
<tbody>
<?php foreach ($c2 as $i => $c): ?>
<tr>
<td class=" border p-2"><?= $i + 1 ?></td>
```

```

        <td class=" border p-2">
            <?= $c ?>
        </td>
    </tr>
</tr>
<?php endforeach ?>
</tbody>
</table>
</td>
</tr>
</table>
</body>
</html>

```

Source code Halaman Admin

```

@extends('layout.mainLayout')
@section('container')
    <div class="p-5">
        <div class="flex justify-end pb-5">
            <a href="{{ route('users_form') }}" class=" bg-blue-500 p-3 text-white font-
semibold rounded-md">Tambah Admin</a>
        </div>
        <div>
            <table class="w-full border">
                <thead>
                    <tr>
                        <th class="p-3 bg-blue-400 text-blue-950">No</th>
                        <th class="p-3 bg-blue-400 text-blue-950">Nama</th>
                        <th class="p-3 bg-blue-400 text-blue-950">Email</th>
                        <th class="p-3 bg-blue-400 text-blue-950">Role</th>
                        <th class="p-3 bg-blue-400 text-blue-950">Tools</th>
                    </tr>
                </thead>
                <tbody>
                    @foreach ($users as $idx => $usr)
                        <tr>
                            <td class="p-3 border border-gray-500">{{ $idx + 1 }}</td>
                            <td class="p-3 border border-gray-500">{{ $usr->name }}</td>
                            <td class="p-3 border border-gray-500">{{ $usr->email }}</td>
                            <td class="p-3 border border-gray-500">{{ $usr->role }}</td>
                            <td class="p-3 border border-gray-500">
                                <a href="{{ route('users_form', ['id' => $usr->id]) }}" class="text-
blue-600">Edit</a>
                                <a href="{{ route('delete_user', ['id' => $usr->id]) }}" class="text-
red-600">Delete</a>
                            </td>
                        </tr>
                    </tr>
                @endforeach
            </tbody>
        </table>
    </div>

```

```
</div>
@endsection
```

Source code Form Halaman Tambah Admin

```
@extends('layout.mainLayout')
@section('container')
  <div class="p-5 w-1/2">
    <form action="" method="POST" class="flex flex-col gap-5">
      @csrf
      <div class="flex flex-col gap-2">
        <span>Nama</span>
        <input value="{{ $user ? $user['name'] : '' }}" name="name"
placeholder="sukirman" class="p-2 bg-gray-200" />
      </div>
      <div class="flex flex-col gap-2">
        <span>Email</span>
        <input value="{{ $user ? $user['email'] : '' }}" name="email"
placeholder="sukirman@gmail.com"
class="p-2 bg-gray-200" />
      </div>
      <div class="flex flex-col gap-2">
        <span>Password</span>
        <input type="password" name="password" class="p-2 bg-gray-200" />
      </div>
      <div class="flex justify-end">
        <button class="p-3 font-semibold bg-blue-500 rounded-md text-
white">Simpan</button>
      </div>
    </form>
  </div>
@endsection
```