

LAMPIRAN

Lampiran 1. Kode Program aatau Sourcode

Berikut adalah kode program tampilan halaman Login

```
<>

    <Head title="Login - PADIWANGI" />
    <link      rel="icon"      href="/images/logo-padiwangi.png"
type="image/png" />

    <div className="min-h-screen flex items-center justify-center bg-
gray-100 dark:bg-black px-4">
        <div className="w-full max-w-md rounded-xl bg-white dark:bg-
gray-900 p-8 shadow-lg border border-gray-200 dark:border-gray-800">
            <div className="mb-6 text-center">
                
                <h1      className="mt-2 text-2xl font-bold text-gray-800
dark:text-white">Selamat Datang</h1>
                <p      className="text-sm text-gray-500 dark:text-gray-
400">Masuk ke akun Padiwangi Anda</p>
            </div>

            <form onSubmit={submit} className="space-y-5">
                <div>
                    <Label      htmlFor="email"      className="text-gray-700
dark:text-gray-300">
                        Email
                    </Label>
                    <Input
                        id="email"
                        type="email"

```

```

        required
        autoFocus
        autoComplete="email"
        value={data.email}
        onChange={(e) => setData('email', e.target.value)}
        placeholder="Email@example.com"
        className="bg-white dark:bg-gray-800 dark:text-white"
      />
      <InputError message={errors.email} />
    </div>
    <div>
      <Label htmlFor="password" className="text-gray-700
dark:text-gray-300">
        Password
      </Label>
      <Input
        id="password"
        type="password"
        required
        autoComplete="current-password"
        value={data.password}
        onChange={(e) => setData('password', e.target.value)}
        placeholder="*****"
        className="bg-white dark:bg-gray-800 dark:text-white"
      />
      <InputError message={errors.password} />
    </div>

    <div className="flex items-center justify-between text-sm">
      <div className="flex items-center space-x-2">

```

```

<Checkbox
  id="remember"
  name="remember"
  checked={data.remember}
  onClick={() => setData('remember', !data.remember)}
/>
<Label htmlFor="remember" className="text-gray-700
dark:text-gray-300">
  Ingat saya
</Label>
</div>
{canResetPassword && (
  <TextLink
    href={route('password.request')}
    className="text-green-700 dark:text-green-400 hover:underline">
      Lupa password?
    </TextLink>
  )}
</div>
<Button type="submit" className="w-full bg-green-600 text-
white hover:bg-green-700" disabled={processing}>
  {processing && <LoaderCircle className="mr-2 h-4 w-4
animate-spin" />}
  Masuk
</Button>
</form>
{status && <div className="mt-4 text-center text-sm font-
medium text-green-600 dark:text-green-400">{status}</div>}
</div>
</div>
</>

```

Berikut adalah kode program tampilan halaman Dashboard Admin.

```
<AppLayout breadcrumbs={breadcrumbs}>
  <Head title="Dashboard" />
  <div className="h-full space-y-6 overflow-y-auto bg-gray-50 p-4
transition-colors duration-300 dark:bg-black sm:p-6">
    {/* Ringkasan */}
    <div className="grid grid-cols-1 gap-4 sm:grid-cols-2 lg:grid-
cols-3 xl:grid-cols-5">
      {summaryStats.map((item, idx) => (
        <div
          key={idx}
          className={`flex min-h-[100px] flex-col justify-between
gap-2 rounded-2xl p-5 shadow-sm transition duration-300 ${item.bg}`}
        >
          <div className="flex items-center justify-between">
            <span
              className={`text-sm font-medium
${item.textColor}`}
            >{item.label}</span>
            {item.icon}
          </div>
          <div
            className={`text-3xl font-semibold
${item.textColor}`}
          >{item.value}</div>
        </div>
      )))
    </div>

    {/* Grafik Jumlah Data Sensor per Hari */}
    <div className="rounded-2xl bg-white p-4 shadow-sm transition
duration-300 dark:bg-gray-800 dark:shadow-md sm:p-6">
      <div className="mb-4 flex flex-col justify-between gap-3
sm:flex-row sm:items-center sm:gap-0">
```

```

        <h2    className="text-lg    font-semibold    text-gray-700
dark:text-gray-200 sm:text-xl">
            Jumlah Data Sensor per Hari
        </h2>
        <span    className="text-sm    font-medium    text-gray-500
dark:text-gray-400 sm:text-base">
            Total: {totalSensorData.toLocaleString()} data
        </span>
    </div>

    {isLoading ? (
        <Skeleton className="h-[400px] w-full rounded-lg" />
    ) : (
        <div className="h-[300px] w-full sm:h-[400px]">
            <ResponsiveContainer width="100%" height="100%">
                <BarChart
                    data={sensorPerDay}
                    margin={{
                        top: 20,
                        right: 20,
                        left: 0,
                        bottom: 60,
                    }}
                    barSize={50}
                >
                    <CartesianGrid    strokeDasharray="3    3"
strokeOpacity={0.1} vertical={false} />
                    <XAxis
                        dataKey="date"
                        stroke="#9ca3af"

```

```

tick={<CustomizedAxisTick />}
tickLine={false}
axisLine={{ stroke: '#e5e7eb' }}
interval={0}
height={50}
/>
<YAxis
stroke="#9ca3af"
tickLine={false}
axisLine={{ stroke: '#e5e7eb' }}
tick={{ fontSize: 12 }}
allowDecimals={false}
tickFormatter={(value) => `${value}`}
width={40}
/>
<Tooltip
content={<CustomTooltip />}
cursor={{ fill: 'rgba(99, 102, 241, 0.1)' }}
/>
<Bar
dataKey="jumlah"
name="Jumlah Data"
radius={[4, 4, 0, 0]}
>
{sensorPerDay.map((entry, index) => (
  <Cell
    key={`cell-${index}`}
    fill={barColors[index % barColors.length]}
  />
))}

```

```

        </Bar>
    </BarChart>
</ResponsiveContainer>
</div>
    })
</div>
</div>
</AppLayout>

```

Berikut adalah kode program tampilan halaman Dashboard User.

```

<AppLayout breadcrumbs={breadcrumbs}>
  <Head title="Dashboard" />
  <div className="h-full overflow-y-auto bg-gray-100 p-4 dark:bg-black">
    { /* Top Metrics Row */ }
    <div className="mb-4 grid grid-cols-1 gap-4 sm:grid-cols-2 md:grid-cols-3 lg:grid-cols-4">
      {[
        {
          label: 'Nilai Suhu Tanah',
          value: suhuTanah,
          unit: '°C',
          icon: <Thermometer className="h-8 text-red-500" />,
          bg: 'bg-red-100 dark:bg-red-900',
        },
        {
          label: 'Nilai Kelembapan Tanah',
          value: kelembapanTanah,
          unit: '%',
          icon: <Droplet className="h-8 text-blue-500" />,

```

```

        bg: 'bg-blue-100 dark:bg-blue-900',
      },
      {
        label: 'Nilai Kelembapan Udara',
        value: kelembapanUdara,
        unit: '%',
        icon: <Cloud className="h-8 text-teal-500" />,
        bg: 'bg-teal-100 dark:bg-teal-900',
      },
      {
        label: 'Nilai Curah Hujan',
        value: dataHujan,
        unit: 'ADC',
        icon: <CloudRain className="h-8 text-indigo-500" />,
        bg: 'bg-indigo-100 dark:bg-indigo-900',
      },
    ].map((item, idx) => (
      <div
        key={idx}
        className={flex flex-col justify-between rounded-xl p-4
shadow transition-colors duration-300 ${item.bg} text-gray-900 dark:text-
white`}
      >
        <p
          className="mb-2 text-sm font-
semibold">{item.label}</p>
        <div className="flex items-center justify-center gap-2">
          {item.icon}
          <span
            className="text-4xl font-
extrabold">{item.value}</span>

```



```

        <span className="text-xl font-medium">{item.unit}</span>
      </div>
      <p className="mt-4 text-end text-xs text-gray-600 dark:text-gray-300">{currentTime}</p>
    </div>
  )})
</div>

  { /* Bottom Row */ }
  <div className="grid grid-cols-1 gap-4 lg:grid-cols-2">
    { /* Status Card */ }
    <div className="flex flex-col justify-between rounded-xl bg-gradient-to-br from-green-100 to-white p-6 shadow dark:from-green-800 dark:to-gray-900 dark:text-white">
      <div className="text-center">
        <h2 className="mb-2 text-lg font-bold lg:text-2xl">Status
        Kondisi Kesehatan Tanaman</h2>
        <div className="mt-4 flex flex-col items-center lg:mt-12">
          <div className="mb-4 rounded-full bg-white p-8 shadow-md lg:mt-12 dark:bg-white">
            
          </div>
          <div
            className={`mt-2 rounded-full px-20 py-2 text-lg font-
            bold shadow-md transition-colors duration-300 lg:mt-8
            ${getStatusColor(status || 'optimal')}`>
            >
            {status?.toUpperCase() || 'OPTIMAL'}

```

```

        </div>
        <p className="mt-2 text-sm text-gray-700 italic
dark:text-gray-300">
            {status === 'kritis' && 'Tanaman dalam kondisi sangat
buruk. Segera lakukan tindakan!'}
            {status === 'stres' && 'Tanaman mengalami stres
lingkungan. Perlu perhatian khusus.'}
            {status === 'optimal' || !status ? 'Tanaman dalam kondisi
optimal dan sehat.' : ''}
        </p>
    </div>
</div>
<p className="mt-4 text-end text-xs text-gray-600 dark:text-
gray-400">{currentTime}</p>
</div>

{/* Recommendations Section */}
<div className="flex flex-col justify-between gap-4">
    {/* Irigasi */}
    <RekomendasiIrigasi status={status} />

    {/* Pemupukan */}
    <RekomendasiPemupukan status={status} />
</div>
</div>
</div>
</AppLayout>

```

Berikut adalah kode program tampilan halaman Fuzzy mamdani.

```
<AppLayout breadcrumbs={breadcrumbs}>
  <Head title="Fuzzy Mamdani" />
  <div className="space-y-6 p-4 md:p-8">
    <div className="bg-background rounded-2xl border p-4 md:p-6
shadow-md dark:border-gray-700 dark:bg-gray-900">
      <h2 className="mb-4 text-xl font-semibold">Hasil Perhitungan
Fuzzy Mamdani</h2>

      <div className="overflow-auto">
        <div className="min-w-full inline-block align-middle">
          <div className="overflow-hidden">
            <table className="min-w-full divide-y divide-gray-200
dark:divide-gray-700">
              <thead>
                <tr className="bg-gray-100 dark:bg-gray-800">
                  <th scope="col" className="px-3 py-2 text-center
text-xs font-medium">No</th>
                  <th scope="col" className="px-3 py-2 text-center
text-xs font-medium">ID</th>
                  <th scope="col" className="px-3 py-2 text-center
text-xs font-medium">Suhu</th>
                  <th scope="col" className="px-3 py-2 text-center
text-xs font-medium">Kel. Tanah</th>
                  <th scope="col" className="px-3 py-2 text-center
text-xs font-medium">Kel. Udara</th>
                  <th scope="col" className="px-3 py-2 text-center
text-xs font-medium">Hujan</th>
                  <th scope="col" className="px-3 py-2 text-center
text-xs font-medium">Fuzzy</th>
            </thead>
          </div>
        </div>
      </div>
    </div>
  </div>
</AppLayout>
```

```

<th scope="col" className="px-3 py-2 text-center
text-xs font-medium">Kondisi</th>

<th scope="col" className="px-3 py-2 text-center
text-xs font-medium">Tanggal</th>

<th scope="col" className="px-3 py-2 text-center
text-xs font-medium">Aksi</th>

</tr>
</thead>
<tbody      className="divide-y      divide-gray-200
dark:divide-gray-700">
  {sensorDatas.data.length === 0 ? (
    <tr>
      <td colSpan={10} className="px-3 py-4 text-
center text-sm text-gray-500 italic dark:text-gray-400">
        Tidak ada data sensor
      </td>
    </tr>
  ) : (
    sensorDatas.data.map((sensor, index) => (
      <tr
        key={sensor.sensor_data_id}
className="hover:bg-gray-50 dark: hover:bg-gray-800">
        <td className="px-4 py-3 font-medium
whitespace-nowrap">{(sensorDatas.from ?? 1) + index}</td>
        <td className="px-3 py-2 text-center text-
xs">{sensor.device.nama_perangkat}</td>
        <td className="px-3 py-2 text-center text-
xs">{sensor.value.suhu_tanah}</td>
        <td className="px-3 py-2 text-center text-
xs">{sensor.value.kelembapan_tanah}</td>

```

```

        <td className="px-3 py-2 text-center text-
xs">{sensor.value.kelembapan_udara}</td>

        <td className="px-3 py-2 text-center text-
xs">{sensor.value.nilai_hujan}</td>

        <td className="px-3 py-2 text-center text-
xs">{sensor.value_fuzzy}</td>

        <td className="px-3 py-2 text-center text-
xs">{sensor.padi_condition}</td>

        <td className="px-3 py-2 text-center text-
xs">{sensor.created_at}</td>

        <td className="px-3 py-2 text-center text-xs">
            <Button
                onClick={() =>
                    handleView(sensor.sensor_data_id)}
                size="sm"
                className="px-2 py-1 text-xs"
            >
                Detail
            </Button>
        </td>
    </tr>
</tbody>
))
}}
</tbody>
</table>

<div className="mt-4 flex w-full justify-center">
    <PaginationFuzzy links={sensorDatas.links} />
</div>
</div>
</div>

```

```

        </div>
    </div>
</div>
</AppLayout>

```

Berikut adalah kode program tampilan halaman Detail Fuzzy.

```

<AppLayout breadcrumbs={breadcrumbs}>
    <Head title="Detail Perhitungan" />
    <div className="space-y-6 p-4 md:p-8">
        <Section title="Detail Data Sensor">
            <div className="grid gap-4 md:grid-cols-4">
                <Card
                    label="Suhu Tanah"
                    value={sensorData.value.suhu_tanah}
                    icon={<LucideThermometer className="text-rose-600
dark:text-rose-300" />}
                    bgColor="bg-rose-50 dark:bg-rose-900"
                    textColor="text-rose-900 dark:text-rose-100"
                />
                <Card
                    label="Kelembapan Tanah"
                    value={sensorData.value.kelembapan_tanah}
                    icon={<LucideDroplet className="text-blue-600 dark:text-
blue-300" />}
                    bgColor="bg-blue-50 dark:bg-blue-900"
                    textColor="text-blue-900 dark:text-blue-100"
                />
                <Card
                    label="Kelembapan Udara"
                    value={sensorData.value.kelembapan_udara}

```

```

        icon={<LucideActivity      className="text-emerald-600
dark:text-emerald-300" />}
        bgColor="bg-emerald-50 dark:bg-emerald-900"
        textColor="text-emerald-900 dark:text-emerald-100"
      />
    <Card
      label="Nilai Hujan"
      value={sensorData.value.nilai_hujan}
      icon={<LucideCloudRain      className="text-indigo-600
dark:text-indigo-300" />}
      bgColor="bg-indigo-50 dark:bg-indigo-900"
      textColor="text-indigo-900 dark:text-indigo-100"
    />
  </div>
</Section>

<Section title="Fuzzifikasi">
  <div className="grid gap-4 md:grid-cols-2">
    {Object.entries(fz)
      .slice(0, 4)
      .map(([key, val]: any) => (
        <div key={key} className="space-y-2">
          <h3      className="text-foreground      font-semibold
capitalize">
            {key.replace(/_/g, ' ').replace(/([a-z])([A-Z])/g, '$1
$2')}
          </h3>
          <div className="grid grid-cols-1 gap-3 sm:grid-cols-
2">
            {Object.entries(val).map(([k, v]) => (

```

```

<Card
  key={k}
  label={k
    .replace(key + '_', '')
    .replace(/_/g, ' ')
    .replace(/([a-z])([A-Z])/g, '$1 $2')}
  value={truncate(v)}
  bgColor="bg-gray-50 dark:bg-gray-800"
  textColor="text-gray-800 dark:text-gray-100"
  />
  )})
</div>
</div>
  )})
</div>
</Section>

<Section title="Rules">
  <div className="grid gap-4 md:grid-cols-2">
    {fz.rules.map((rule, i) => (
      <div
        key={i}
        className="border border-gray-200 dark:border-gray-700 flex items-center justify-between rounded-xl border bg-white p-4 text-sm shadow-sm transition-all hover:shadow-md dark:bg-gray-800"
      >
        <span className="font-medium">Rule {i + 1}</span>
        <span className="rounded-md bg-gray-100 px-3 py-1 font-mono text-gray-900 dark:bg-gray-700 dark:text-gray-100">
          {truncate(rule)}

```



```

        </span>
      </div>
    )))
  </div>
</Section>

<Section title="Agregasi Output">
  <div className="grid gap-4 md:grid-cols-3">
    <Card
      label="Kritis"
      value={truncate(fz.membership.membershipKritis)}
      bgColor="bg-red-50 dark:bg-red-700"
      textColor="text-red-900 dark:text-white"
    />
    <Card
      label="Stress"
      value={truncate(fz.membership.membershipStress)}
      bgColor="bg-amber-50 dark:bg-amber-700"
      textColor="text-amber-900 dark:text-white"
    />
    <Card
      label="Optimal"
      value={truncate(fz.membership.membershipOptimal)}
      bgColor="bg-green-50 dark:bg-green-700"
      textColor="text-green-900 dark:text-white"
    />
  </div>
</Section>

<Section title="Himpunan Baru">

```

```

<div className="grid gap-4 md:grid-cols-4">
  <Card
    label="Kritis"
    value={truncate(fz.himpunan.himpunanKritisBaru)}
    bgColor="bg-gray-50 dark:bg-gray-800"
    textColor="text-gray-800 dark:text-gray-100"
  />
  <Card
    label="Stress Naik"
    value={truncate(fz.himpunan.himpunanStressLinearNaikBaru)}
    bgColor="bg-gray-50 dark:bg-gray-800"
    textColor="text-gray-800 dark:text-gray-100"
  />
  <Card
    label="Stress Turun"
    value={truncate(fz.himpunan.himpunanStressLinearTurunBaru)}
    bgColor="bg-gray-50 dark:bg-gray-800"
    textColor="text-gray-800 dark:text-gray-100"
  />
  <Card
    label="Optimal"
    value={truncate(fz.himpunan.himpunanOptimalBaru)}
    bgColor="bg-gray-50 dark:bg-gray-800"
    textColor="text-gray-800 dark:text-gray-100"
  />
</div>
</Section>

```

```

<Section title="Defuzzifikasi">
  <div className="grid gap-4 md:grid-cols-3">
    <Card
      label="Momen 1"
      value={truncate(fz.momen.momen1)}
      bgColor="bg-sky-50 dark:bg-sky-700"
      textColor="text-sky-900 dark:text-white"
    />
    <Card
      label="Momen 2"
      value={truncate(fz.momen.momen2)}
      bgColor="bg-sky-50 dark:bg-sky-700"
      textColor="text-sky-900 dark:text-white"
    />
    <Card
      label="Momen 3"
      value={truncate(fz.momen.momen3)}
      bgColor="bg-sky-50 dark:bg-sky-700"
      textColor="text-sky-900 dark:text-white"
    />
    <Card
      label="Area 1"
      value={truncate(fz.area.area1)}
      bgColor="bg-purple-50 dark:bg-purple-700"
      textColor="text-purple-900 dark:text-white"
    />
    <Card
      label="Area 2"
      value={truncate(fz.area.area2)}
      bgColor="bg-purple-50 dark:bg-purple-700"

```

```

        textColor="text-purple-900 dark:text-white"
      />
    <Card
      label="Area 3"
      value={truncate(fz.area.area3)}
      bgColor="bg-purple-50 dark:bg-purple-700"
      textColor="text-purple-900 dark:text-white"
    />
  </div>
</Section>

<Section title="Hasil Akhir">
  <div className="grid gap-4 md:grid-cols-2">
    <Card
      label="Nilai Defuzzifikasi"
      value={truncate(fz.result)}
      bgColor="bg-blue-50 dark:bg-blue-700"
      textColor="text-blue-900 dark:text-white"
    />
    <div className={rounded-xl p-4 text-center text-lg font-
semibold border ${getConditionColors(sensorData.padi_kondisi)}}>
      Kondisi Tanaman: {sensorData.padi_kondisi}
    </div>
  </div>
</Section>
</div>
</AppLayout>

```