# MODUL
# CSS Responsive

**Tujuan Pembelajaran:**

- Siswa memahami konsep CSS Responsive.
- Siswa memahami format penulisan media query.
- Siswa memahami konsep grid.

## 1. Pengertian CSS Responsive

Salah satu prinsip halaman website adalah dapat dijalankan pada browser dari berbagai tipe device pengguna. Kategori device pengguna dapat dibedakan menjadi kategori perangkat mobile, dektop, dan tablet. Kategori perangkat tersebut berbeda dalam ukuran layarnya. Halaman website yang baik harus dapat menyesuaiakan ukuran layer dari device pengguna. Untuk mengatasi hal tersebut, dibutuhkan sebuah style yang responsive yang biasa disebut dengan **CSS Responsive**.

Hal yang pertama kali untuk membuat halaman web yang responsive adalah dengan mengatur viewport pada halaman web tersebut. Pengarturan tersebut dituliskan pada tag **<meta>** yang terdapat di dalam tag **<head>**. Berikut ini adalah sintak untuk mengatur viewport pada halaman web.

```
<head>
<meta name="viewport" content="width=device-width, initial-scale=1.0" >
..
</head>
```

Dari sintak di atas, dapat diartikan bahwa nilai width diambil dari ukuran lebar layar pengguna dan inisiasi zoom pada halaman tersebut adalah 1.

Selain mengatur viewport pada halaman web, ada beberapa hal yang harus diperhatikan terutama ketika styling elemen HTML pada CSS. Agar halaman web menjadi responsive, pengaturan dimensi (width dan height) harus dinamis. Dengan arti lain, pengaturan width menggunakan **satuan pesen (%)** dan height harus **auto**.

2. **Penggunaan Media Query**

   Fitur media query adalah fitur untuk yang digunakan sebagai filter terhadap lebar layar pengguna. Berikut ini contoh sintak penggunaan media query.

   ```
   @media only screen and (min-width: 780px) {
       body {
           background:yellow;
       }
   }
   ```

   Dari sintak di atas dapat diartikan bahwa background dari body akan berwarna kuning ketika lebar layar minimal 768 pixel **(background berwarna kuning ketika lebar layar berukuran > 780 pixel)**.

3. **Konsep Grid pada Halaman Web**

   Konsep grid merupakan sebuah trik untuk membagi lebar layar menjadi 12 bagian. Konsep ini sangat membantu untuk membuat tampilan web menjadi lebih mudah. Berikut ini contoh sintak pembagian grid.

   ```
   @media only screen and (min-width: 600px) {
       /* For tablets: */
       .col-s-1 {width: 8.33%;}
       .col-s-2 {width: 16.66%;}
       .col-s-3 {width: 25%;}
       .col-s-4 {width: 33.33%;}
       .col-s-5 {width: 41.66%;}
       .col-s-6 {width: 50%;}
       .col-s-7 {width: 58.33%;}
       .col-s-8 {width: 66.66%;}
       .col-s-9 {width: 75%;}
       .col-s-10 {width: 83.33%;}
       .col-s-11 {width: 91.66%;}
       .col-s-12 {width: 100%;}
   }
   ```
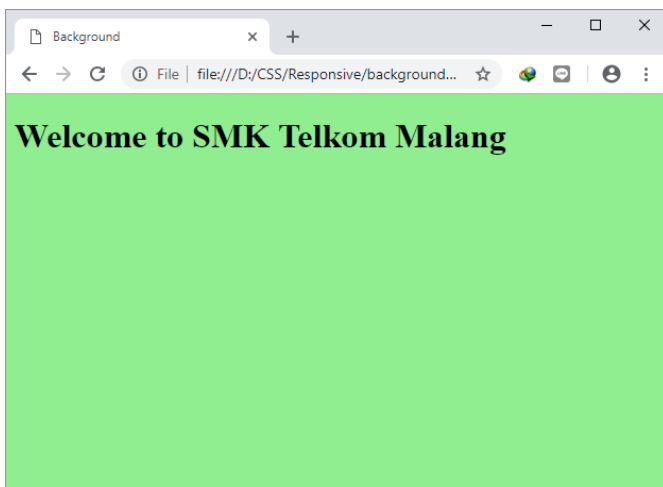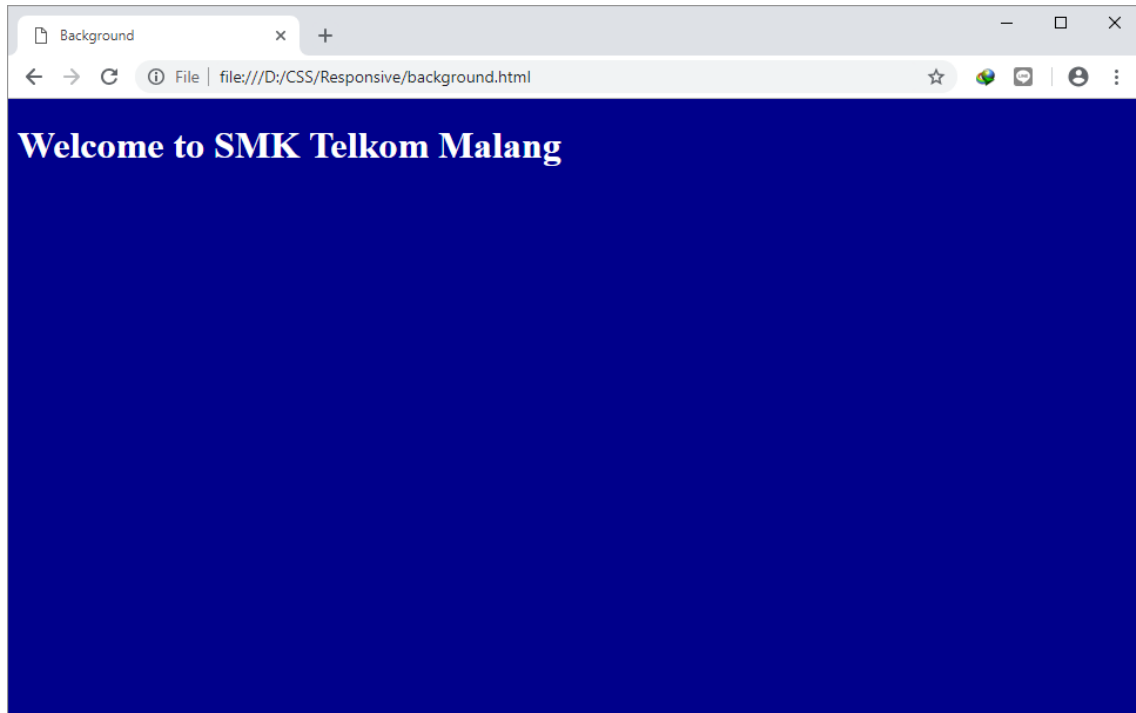
**Untuk lebih memahami tentang CSS responsive, silahkan kalian kerjakan dan pahami latihan-latihan berikut ini.**

**Latihan Media Query**

**Script**

```html
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Background</title>
    <style media="screen">
      body{
        background: red;
        color: white;
      }
      @media only screen and (min-width: 600px){
        body{
          background: lightgreen;
          color: black;
        }
      }
      @media only screen and (min-width: 768px){
        body{
          background: darkblue;
          color:white;
        }
      }
    </style>
  </head>
  <body>
    <h1>Welcome to SMK Telkom Malang</h1>
  </body>
</html>
```

**Output (Silahkan resize jendela browser untuk melihat perubahan / responsivitas CSS)**

**Latihan Konsep Grid**

**Script Style CSS**

```css
*{
    box-sizing: border-box;
}

[class*="col-"] { float: left; padding: 15px; }

/* For Smartphone */
[class*="col-"] { width: 100%; }

@media only screen and (min-width: 600px) {
  /* For tablets: */
  .col-s-1 {width: 8.33%;}
  .col-s-2 {width: 16.66%;}
  .col-s-3 {width: 25%;}
  .col-s-4 {width: 33.33%;}
  .col-s-5 {width: 41.66%;}
  .col-s-6 {width: 50%;}
  .col-s-7 {width: 58.33%;}
  .col-s-8 {width: 66.66%;}
  .col-s-9 {width: 75%;}
  .col-s-10 {width: 83.33%;}
  .col-s-11 {width: 91.66%;}
  .col-s-12 {width: 100%;}
}
```

```css
@media only screen and (min-width: 768px) {
    /* For desktop: */
    .col-1 {width: 8.33%;}
    .col-2 {width: 16.66%;}
    .col-3 {width: 25%;}
    .col-4 {width: 33.33%;}
    .col-5 {width: 41.66%;}
    .col-6 {width: 50%;}
    .col-7 {width: 58.33%;}
    .col-8 {width: 66.66%;}
    .col-9 {width: 75%;}
    .col-10 {width: 83.33%;}
    .col-11 {width: 91.66%;}
    .col-12 {width: 100%;}
}

.bg-green{ background: #00510c; color:white; }
.bg-blue{ background: #012051; color:white; }
.bg-red{ background: #50011a; color:white; }
```
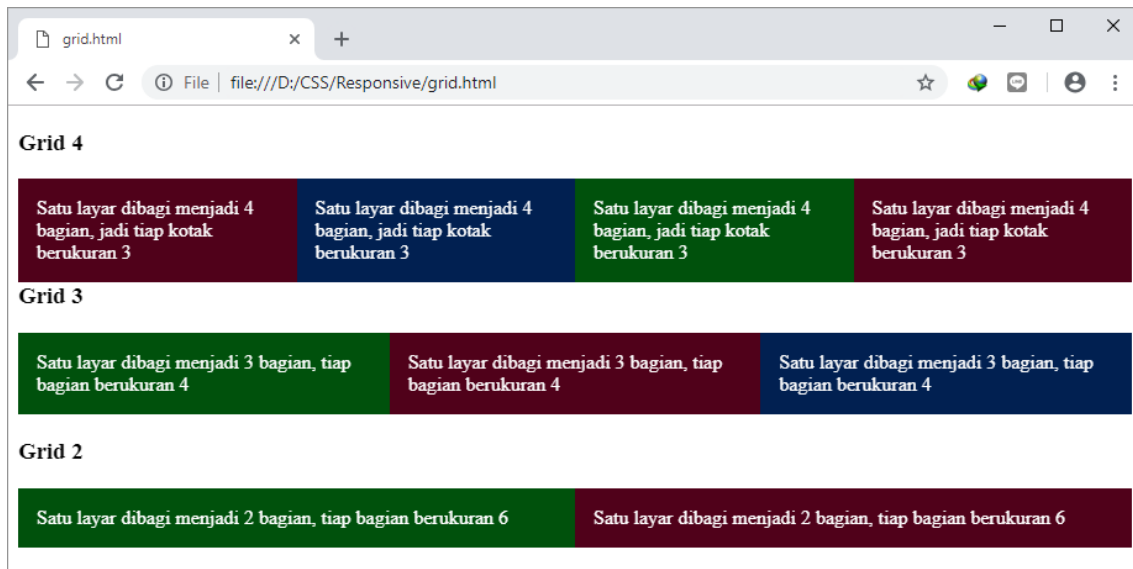
**Script HTML**

```html
<h3>Grid 4</h3>
  <div class="col-3 col-s-6 bg-red">
    Satu layar dibagi menjadi 4 bagian, jadi tiap kotak berukuran 3
  </div>
  <div class="col-3 col-s-6 bg-blue">
    Satu layar dibagi menjadi 4 bagian, jadi tiap kotak berukuran 3
  </div>
  <div class="col-3 col-s-6 bg-green">
    Satu layar dibagi menjadi 4 bagian, jadi tiap kotak berukuran 3
  </div>
  <div class="col-3 col-s-6 bg-red">
    Satu layar dibagi menjadi 4 bagian, jadi tiap kotak berukuran 3
  </div>
<h3>Grid 3</h3>
  <div class="col-4 bg-green">
    Satu layar dibagi menjadi 3 bagian, tiap bagian berukuran 4
  </div>
  <div class="col-4 bg-red">
    Satu layar dibagi menjadi 3 bagian, tiap bagian berukuran 4
  </div>
  <div class="col-4 bg-blue">
    Satu layar dibagi menjadi 3 bagian, tiap bagian berukuran 4
  </div>
<h3>Grid 2</h3>
  <div class="col-6 bg-green">
    Satu layar dibagi menjadi 2 bagian, tiap bagian berukuran 6
  </div>
  <div class="col-6 bg-red">
    Satu layar dibagi menjadi 2 bagian, tiap bagian berukuran 6
  </div>
```
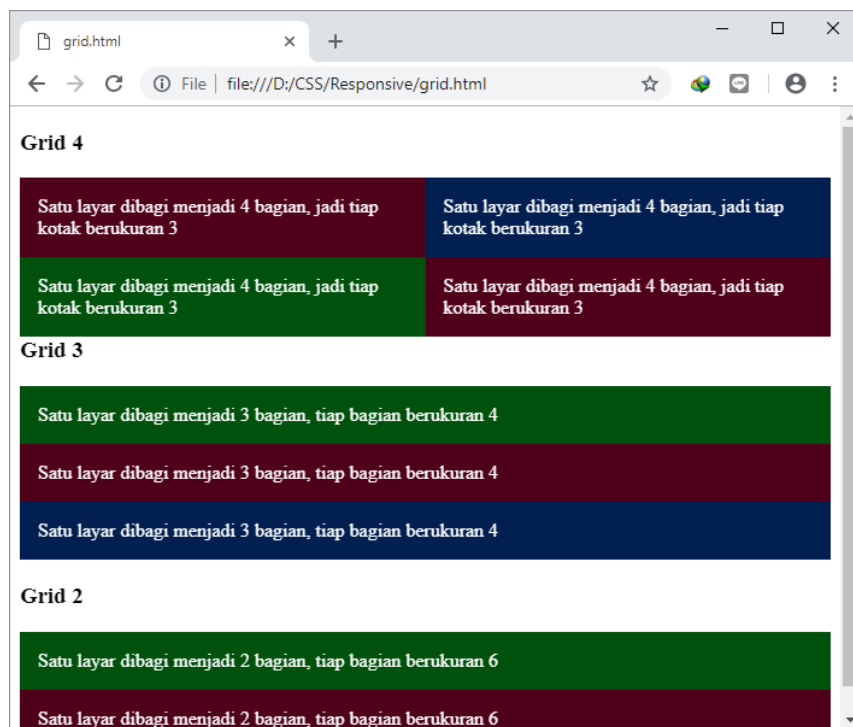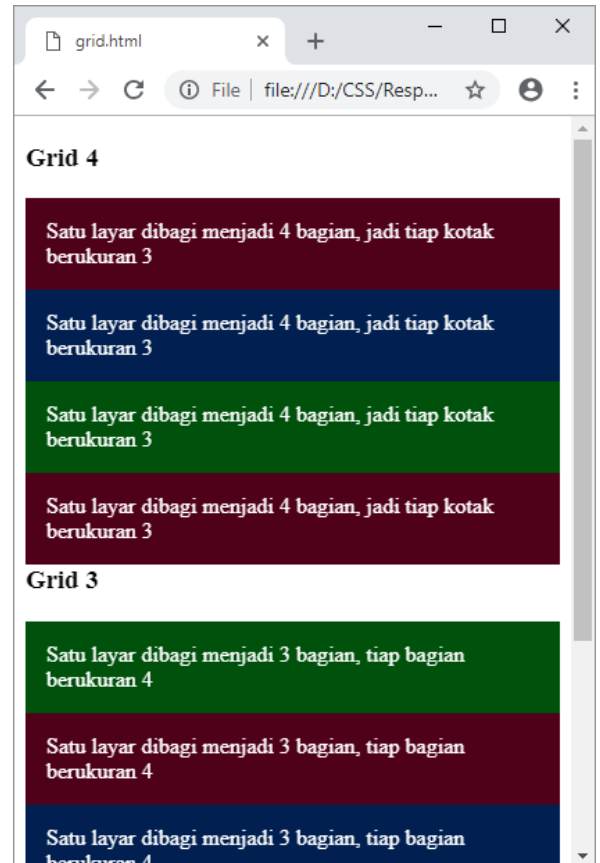
**Output**



**Tampilan Desktop**



**Tampilan Tablet**



**Tampilan Mobile / Smartphone**

**Latihan *Responsive Article***

**Script Style CSS**

```css
div.article{
   width:80%;
   margin:0 auto;
   column-count:3; column-gap: 30px;
   column-rule-style: solid;
   column-rule-width: 2px;
   column-rule-color: #000;
   background: #012051;
   color:#fff; padding:10px;
}
@media only screen and (max-width:768px){
   div.article{
      width:80%;
      margin:0 auto;
      column-count:2; column-gap: 30px;
      column-rule-style: solid;
      column-rule-width: 2px;
      column-rule-color: #000;
      background:#50011a;
      color:#fff; padding:10px;
   }
}
@media only screen and (max-width:600px){
   div.article{
      width:80%;
      margin:0 auto;
      column-count:1; column-gap: 30px;
      column-rule-style: solid;
      column-rule-width: 2px;
      column-rule-color: #000;
      background:#00510c;
      color:#fff; padding:10px;
   }
}
```

**Script HTML**

```html
<div class="article">
  <p>
    Lorem Ipsum is simply dummy text of the printing
    and typesetting industry. Lorem Ipsum has been the
    industry's standard dummy text ever since the 1500s,
    when an unknown printer took a galley of type and
    scrambled it to make a type specimen book. It has
    survived not only five centuries, but also the
    leap into electronic typesetting, remaining
    essentially unchanged. It was popularised in
    the 1960s with the release of Letraset sheets
    containing Lorem Ipsum passages, and more recently
    with desktop publishing software like Aldus PageMaker
    including versions of Lorem Ipsum.
  </p>
  <p>
    It is a long established fact that a reader will
    be distracted by the readable content of a page
    when looking at its layout. The point of using
    Lorem Ipsum is that it has a more-or-less normal
    distribution of letters, as opposed to using
    'Content here, content here', making it look like
    readable English. Many desktop publishing packages
    and web page editors now use Lorem Ipsum as their
    default model text, and a search for 'lorem ipsum'
    will uncover many web sites still in their infancy.
    Various versions have evolved over the years, sometimes
    by accident, sometimes on purpose (injected humour and
    the like).
  </p>
```
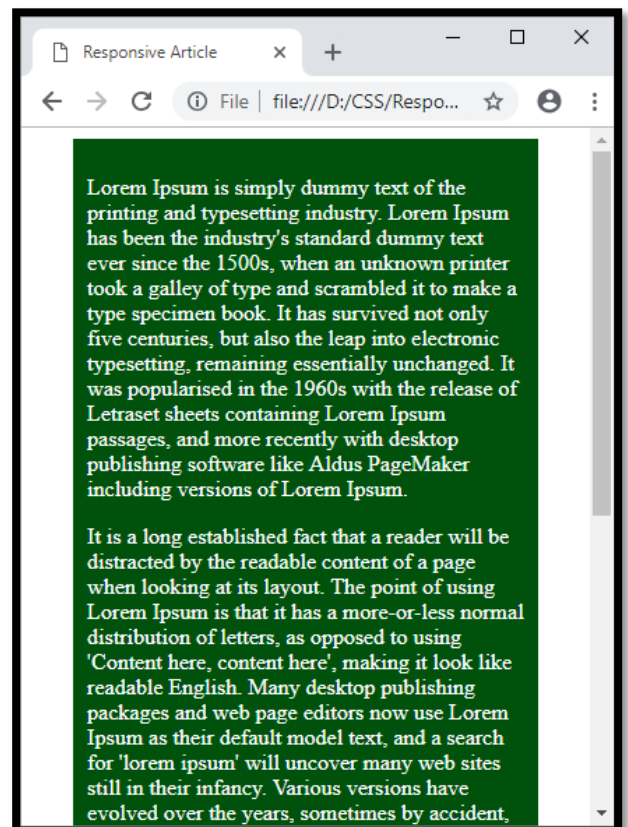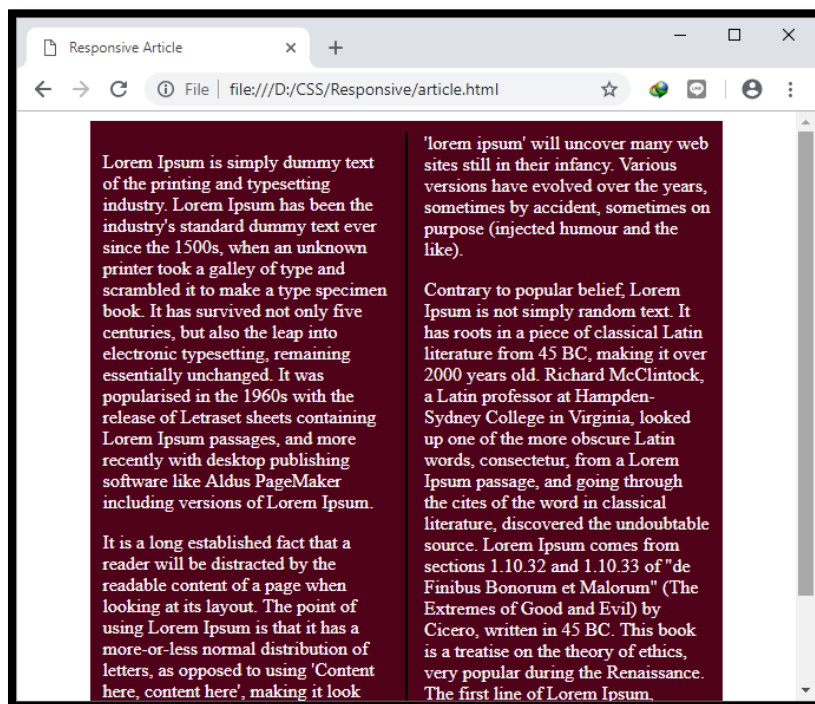
```html
  <p>
    Contrary to popular belief, Lorem Ipsum is not simply
    random text. It has roots in a piece of classical
    Latin literature from 45 BC, making it over 2000 years
    old. Richard McClintock, a Latin professor at
    Hampden-Sydney College in Virginia, looked up one of
    the more obscure Latin words, consectetur, from a
    Lorem Ipsum passage, and going through the cites of
    the word in classical literature, discovered the
    undoubtable source. Lorem Ipsum comes from sections
    1.10.32 and 1.10.33 of "de Finibus Bonorum et
    Malorum" (The Extremes of Good and Evil) by Cicero,
    written in 45 BC. This book is a treatise on the
    theory of ethics, very popular during the Renaissance.
    The first line of Lorem Ipsum, "Lorem ipsum dolor sit
    amet..", comes from a line in section 1.10.32.
  </p>
</div>
```

**Output**

**Latihan *Responsive Image Gallery***

**Script Style CSS**

```css
*{
  box-sizing:border-box;
}
[class*="col-"]{
  padding: 15px; float:left; width: 100%;
}

@media only screen and (min-width: 600px) {
  /* For tablets: */
  .col-s-1 {width: 8.33%;}
  .col-s-2 {width: 16.66%;}
  .col-s-3 {width: 25%;}
  .col-s-4 {width: 33.33%;}
  .col-s-5 {width: 41.66%;}
  .col-s-6 {width: 50%;}
  .col-s-7 {width: 58.33%;}
  .col-s-8 {width: 66.66%;}
  .col-s-9 {width: 75%;}
  .col-s-10 {width: 83.33%;}
  .col-s-11 {width: 91.66%;}
  .col-s-12 {width: 100%;}
}
@media only screen and (min-width: 768px) {
  /* For desktop: */
  .col-1 {width: 8.33%;}
  .col-2 {width: 16.66%;}
  .col-3 {width: 25%;}
  .col-4 {width: 33.33%;}
  .col-5 {width: 41.66%;}
  .col-6 {width: 50%;}
  .col-7 {width: 58.33%;}
  .col-8 {width: 66.66%;}
  .col-9 {width: 75%;}
  .col-10 {width: 83.33%;}
  .col-11 {width: 91.66%;}
  .col-12 {width: 100%;}
}
```

```css
.image{
  width:200px;
  height:200px;
  border-radius:50%;
  margin:0 auto;
  border: 20px double darkgrey;
}
.container{
  width:80%;
  margin:0 auto;
}
.box{
  text-align:center;
}
```
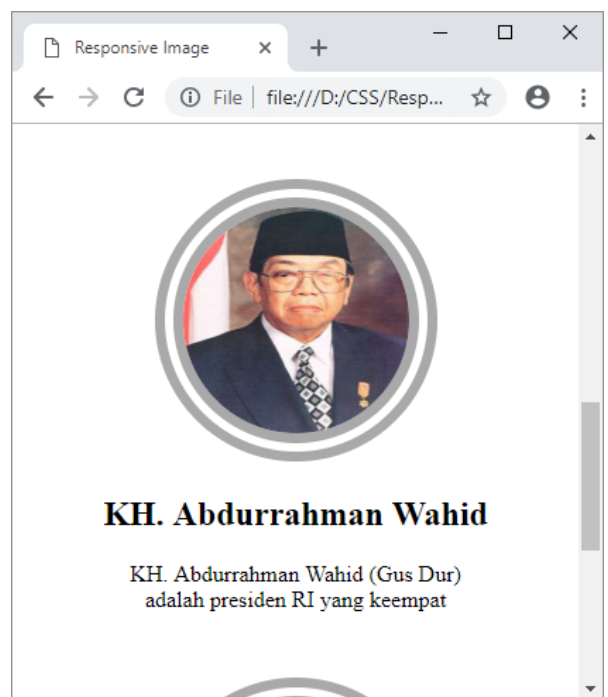
**Script HTML**

```html
<div class="container">
  <h3>Image Galery</h3>
  <div class="box col-3 col-s-6">
    <img src="../soeharto.jpg" class="image">
    <h2>Soeharto</h2>
    <p>
      Soeharto adalah presiden RI yang kedua
    </p>
  </div>
  <div class="box col-3 col-s-6">
    <img src="../habibi.jpg" class="image">
    <h2>Baharuddin Jusuf Habibie</h2>
    <p>
      BJ Habibie adalah presiden RI yang ketiga
    </p>
  </div>
  <div class="box col-3 col-s-6">
    <img src="../gusdur.jpg" class="image">
    <h2>KH. Abdurrahman Wahid</h2>
    <p>
      KH. Abdurrahman Wahid (Gus Dur) adalah presiden RI yang keempat
    </p>
  </div>
  <div class="box col-3 col-s-6">
    <img src="../sby.jpg" class="image">
    <h2>Susilo Bambang Yudhoyono</h2>
    <p>
      Susilo Bambang Yudhoyono (SBY) adalah presiden RI yang keenam
    </p>
  </div>
</div>
```
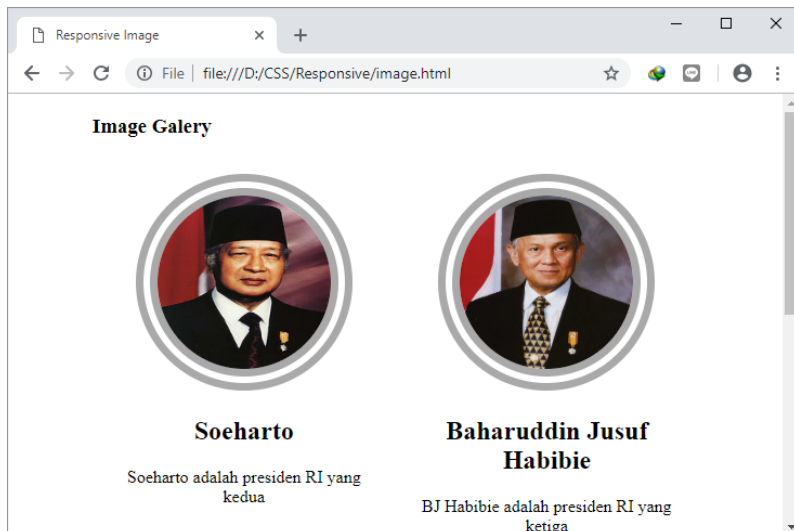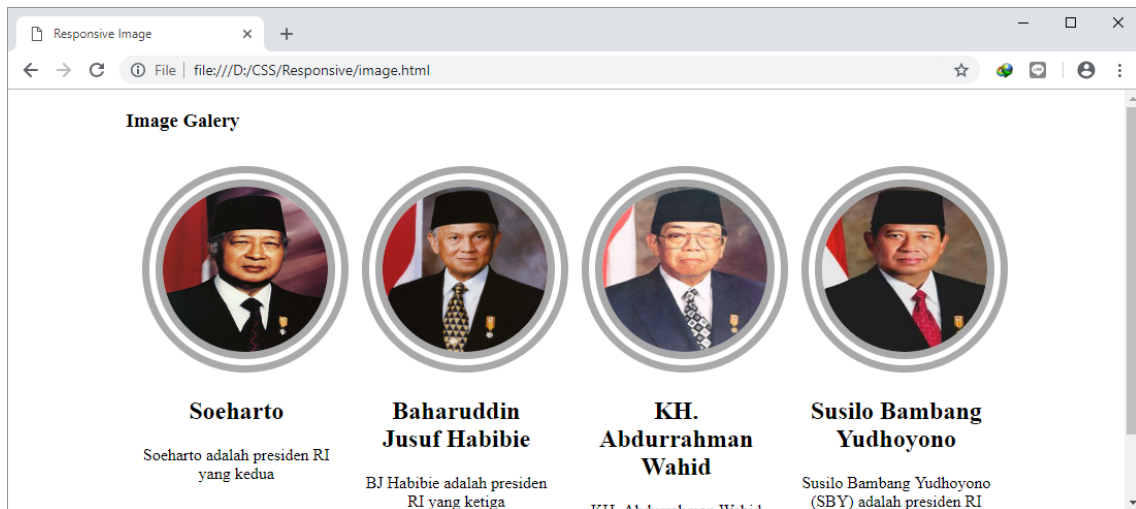
**Output**

**Latihan Responsive Template**

**Script Style CSS**

```css
* {
  box-sizing:border-box;
}
[class*="col-"]{
  padding: 15px; float:left; width: 100%;
}
.header{
  background: url("../logo_white.png") #5e0001 no-repeat center;
  background-size: 100px 100px;
  height: 200px;
}

@media only screen and (min-width: 600px) {
  /* For tablets: */
  .col-s-1 {width: 8.33%;}
  .col-s-2 {width: 16.66%;}
  .col-s-3 {width: 25%;}
  .col-s-4 {width: 33.33%;}
  .col-s-5 {width: 41.66%;}
  .col-s-6 {width: 50%;}
  .col-s-7 {width: 58.33%;}
  .col-s-8 {width: 66.66%;}
  .col-s-9 {width: 75%;}
  .col-s-10 {width: 83.33%;}
  .col-s-11 {width: 91.66%;}
  .col-s-12 {width: 100%;}
  .header{
    background: url("../logo_putih.png") #5e0001 no-repeat center;
    height: 200px;
  }
}
@media only screen and (min-width: 768px) {
  /* For desktop: */
  .col-1 {width: 8.33%;}
  .col-2 {width: 16.66%;}
  .col-3 {width: 25%;}
  .col-4 {width: 33.33%;}
  .col-5 {width: 41.66%;}
  .col-6 {width: 50%;}
  .col-7 {width: 58.33%;}
  .col-8 {width: 66.66%;}
  .col-9 {width: 75%;}
  .col-10 {width: 83.33%;}
  .col-11 {width: 91.66%;}
  .col-12 {width: 100%;}
  .header{
    background: url("../logo_putih.png") #5e0001 no-repeat center;
    height: 200px;
  }
}

.container{
  width:80%;
  margin:0 auto;
}

.sidebar ul{
  list-style-type:none;
  padding: 0;
  margin: 0;
  overflow: hidden;
  background: red;
}
.sidebar ul li{
  float: left;
  width: 100%;
  border-bottom: 2px solid #5e0001;
}
.sidebar ul li a{
  display: block;
  text-decoration: none;
  color:#fff;
  padding: 15px;
  text-align: left;
}

.content{ text-align:justify; }
.footer{
  background: #5e0001;
  color: #fff;

}
```

**Script HTML**

```html
<div class="container">
  <!-- header mulai -->
  <div class="col-12 header">
  </div>
  <!-- akhir header -->
  <!-- awal menu -->
  <div class="col-3 col-s-5 sidebar">
    <ul>
      <li><a href="#">Beranda</a></li>
      <li><a href="#">Profil</a></li>
      <li><a href="#">Kontak Kami</a></li>
    </ul>
  </div>
  <!-- akhir menu -->
  <!-- awal konten -->
  <div class="col-9 col-s-7 content">
    <p>
      It is a long established fact that a reader will be distracted
      by the readable content of a page when looking at its layout.
      The point of using Lorem Ipsum is that it has a more-or-less normal
      distribution of letters, as opposed to using 'Content here,
      content here', making it look like readable English. Many desktop
      publishing packages and web page editors now use Lorem Ipsum as
      their default model text, and a search for 'lorem ipsum' will
      uncover many web sites still in their infancy. Various versions
      have evolved over the years, sometimes by accident, sometimes on
      purpose (injected humour and the like).
    </p>
  </div>
  <!-- akhir konten -->
  <!-- awal footer -->
  <div class="col-12 footer">
    &copy; Copyright by Jack
  </div>
  <!-- akhir footer -->
</div>
```
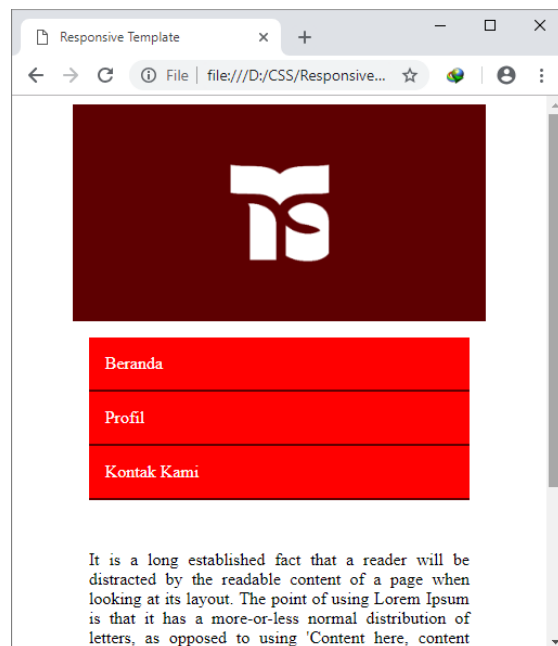
**Output**

**Latihan Responsive Form**

**Script Style CSS**

```css
*{
  box-sizing:border-box;
}
[class*="col-"]{
  padding: 15px; float:left; width: 100%;
}

@media only screen and (min-width: 600px) {
  /* For tablets: */
  .col-s-1 {width: 8.33%;}
  .col-s-2 {width: 16.66%;}
  .col-s-3 {width: 25%;}
  .col-s-4 {width: 33.33%;}
  .col-s-5 {width: 41.66%;}
  .col-s-6 {width: 50%;}
  .col-s-7 {width: 58.33%;}
  .col-s-8 {width: 66.66%;}
  .col-s-9 {width: 75%;}
  .col-s-10 {width: 83.33%;}
  .col-s-11 {width: 91.66%;}
  .col-s-12 {width: 100%;}
}
@media only screen and (min-width: 768px) {
  /* For desktop: */
  .col-1 {width: 8.33%;}
  .col-2 {width: 16.66%;}
  .col-3 {width: 25%;}
  .col-4 {width: 33.33%;}
  .col-5 {width: 41.66%;}
  .col-6 {width: 50%;}
  .col-7 {width: 58.33%;}
  .col-8 {width: 66.66%;}
  .col-9 {width: 75%;}
  .col-10 {width: 83.33%;}
  .col-11 {width: 91.66%;}
  .col-12 {width: 100%;}
}
```

```css
.container{
  width:80%;
  margin:0 auto;
}
.label{
  font-size:15px;
}
.form-control{
  padding:20px;
  font-size:15px;
  width:100%;
  height:30px;
  border: 1px solid grey;
  border-radius:10px;
}
.button{
  float:right;
  background: darkblue; color:#fff;
  padding:10px;
  border:1px solid darkblue;
  border-radius:10px;
  font-weight:bolder; letter-spacing:1px;
}
fieldset{
  border-radius:10px;
}
fieldset legend{
  font-weight:bolder;
}
```

**Script HTML**

```html
<div class="container">
  <form>
    <fieldset>
      <legend>Registration Form</legend>
      <div class="col-3 label">
        First Name
      </div>
      <div class="col-9">
        <input type="text" class="form-control">
      </div>

      <div class="col-3 label">
        Last Name
      </div>
      <div class="col-9">
        <input type="text" class="form-control">
      </div>

      <div class="col-3 label">
        Date of Birth
      </div>
      <div class="col-9">
        <input type="date" class="form-control">
      </div>
      <button type="button" class="button">
        Register
      </button>
    </fieldset>
  </form>
</div>
```
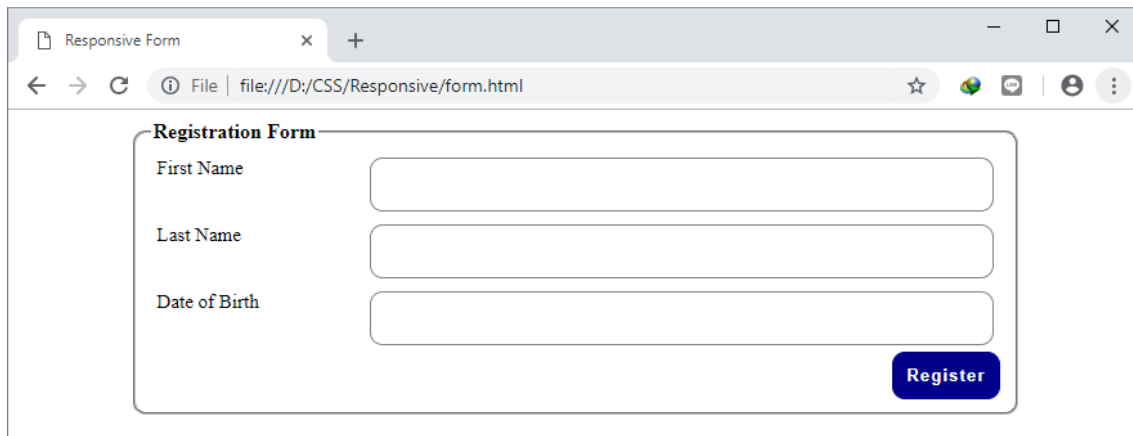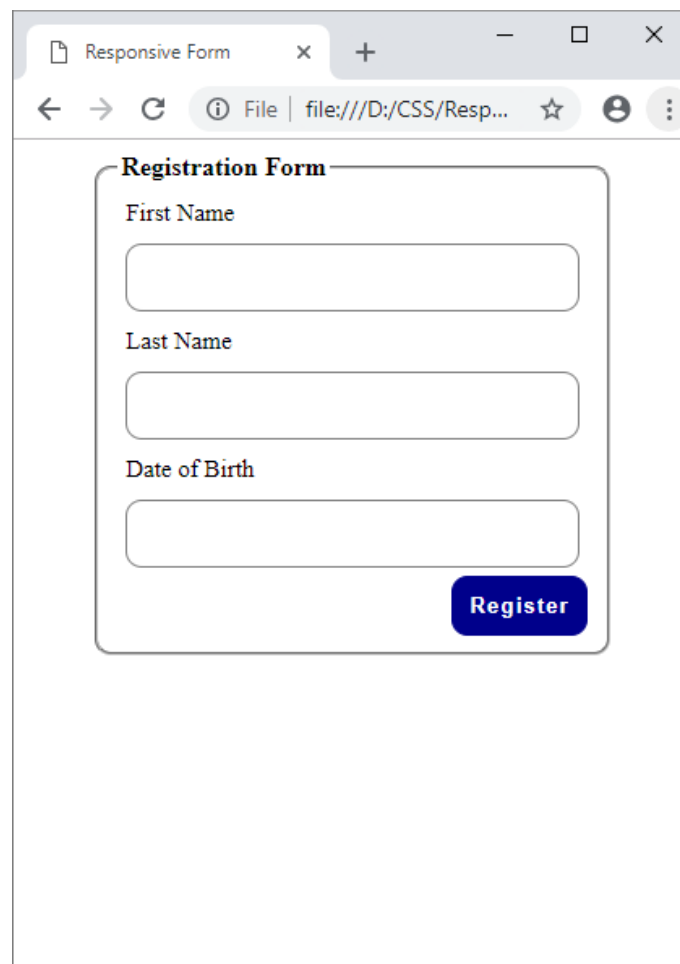
**Output**