

PROGRAM STUDI INFORMATIKA
SEMESTER GASAL 2025/2026

PEMROGRAMAN WEB I

3 SKS - MINGGU 4

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UKRIDA
Universitas Kristen Krida Wacana

SILABUS

PROGRAM PEMROGRAMAN WEB

- *Responsive Web Design*
- *Frameworks*
- *Grid System*
- *Media Queries*
- *Google Fonts*

PENGANTAR

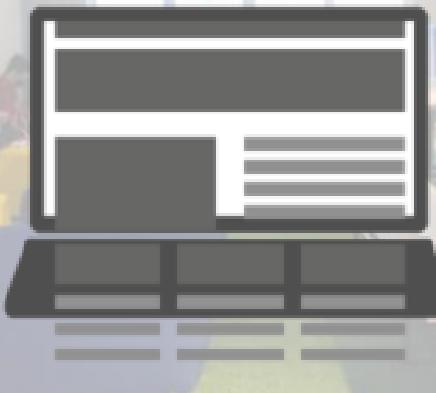
RESPONSIVE WEBSITE

- *Responsive Web Design* adalah teknik membuat tampilan website tetap terlihat baik di perangkat apapun(*desktops, tablets dan phones*).
- Teknik *Responsive Web Design* dilakukan dengan menggunakan CSS dan HTML untuk *resize, hide, shrink, enlarge*, atau menggeser konten agar tampilannya tetap terjaga.

PENGANTAR

RESPONSIVE WEBSITE

Responsive Web Design



PENGANTAR

RESPONSIVE WEBSITE

- *Responsive Web Design* menjadi sangat mendesak sejak tahun 2013 mengingat semakin banyak pengguna Internet yang menggunakan perangkat *mobile* yang memiliki ukuran layar serta *screen resolution* yang berbeda-beda.

ESSENTIAL DIGITAL HEADLINES

OVERVIEW OF THE ADOPTION AND USE OF CONNECTED DEVICES AND SERVICES



TOTAL POPULATION



we
are.
social

8.12
BILLION

URBANISATION

57.9%

UNIQUE MOBILE PHONE SUBSCRIBERS



Meltwater

5.68
BILLION

vs. POPULATION

70.0%

INDIVIDUALS USING THE INTERNET



K
KEPIOS

5.45
BILLION

vs. POPULATION

67.1%

SOCIAL MEDIA USER IDENTITIES



5.17
BILLION

vs. POPULATION

63.7%

OVERVIEW OF INTERNET USE

ESSENTIAL INDICATORS OF INTERNET ADOPTION AND USE



GLOBAL OVERVIEW

INDIVIDUALS
USING THE
INTERNET**5.45**
BILLION

KEPIOS

INDIVIDUALS USING THE
INTERNET AS A PERCENTAGE
OF TOTAL POPULATION**67.1%**
YOY: +2.2% (+146 BPS)

Meltwater

YEAR-ON-YEAR CHANGE IN
THE NUMBER OF INDIVIDUALS
USING THE INTERNET**+3.2%**
+167 MILLIONPERCENTAGE OF THE
TOTAL FEMALE POPULATION
THAT USES THE INTERNET**64.4%**
YOY: +5.0% (+309 BPS)we
are.
socialPERCENTAGE OF THE
TOTAL MALE POPULATION
THAT USES THE INTERNET**69.8%**
YOY: +4.3% (+289 BPS)AVERAGE DAILY TIME
SPENT USING THE INTERNET
BY EACH INTERNET USER

GWI.

6H 31MPERCENTAGE OF USERS
ACCESSING THE INTERNET
VIA MOBILE PHONES

Meltwater

95.9%PERCENTAGE OF USERS
ACCESSING THE INTERNET
VIA LAPTOPS AND DESKTOPSwe
are.
social**62.2%**PERCENTAGE OF THE
TOTAL URBAN POPULATION
THAT USES THE INTERNET

Meltwater

79.8%
YOY: +3.3% (+256 BPS)**49.6%**
YOY: +7.3% (+344 BPS)

SOURCES: KEPIOS ANALYSIS; ITU; GSMA INTELLIGENCE; EUROSTAT; GOOGLE'S ADVERTISING RESOURCES; CNNIC; KANTAR & IAMAI; GOVERNMENT RESOURCES; UNITED NATIONS. TIME SPENT AND MOBILE SHARE DATA FROM [GWI](#) (Q1 2024). **NOTES:** GENDER DATA ARE ONLY AVAILABLE FOR "FEMALE" AND "MALE". PERCENTAGE CHANGE FIGURES SHOW RELATIVE YEAR-ON-YEAR CHANGE. "BPS" FIGURES REPRESENT BASIS POINTS, AND SHOW ABSOLUTE YEAR-ON-YEAR CHANGE. **COMPARABILITY:** SOURCE AND BASE CHANGES. ALL FIGURES USE THE LATEST AVAILABLE DATA, BUT SOME SOURCES DO NOT PUBLISH REGULAR UPDATES, SO FIGURES MAY UNDER-REPRESENT ACTUAL USE. SEE [NOTES ON DATA](#).

SHARE OF WEB TRAFFIC BY DEVICE

PERCENTAGE OF TOTAL WEB PAGES SERVED TO WEB BROWSERS RUNNING ON EACH KIND OF DEVICE



MOBILE
PHONES



K
KEPIOS

60.71%

YEAR-ON-YEAR CHANGE

+9.4%

+521 BPS

LAPTOP AND
DESKTOP COMPUTERS



we
are
social

37.08%

YEAR-ON-YEAR CHANGE

-11.5%

-484 BPS

TABLET
DEVICES



K
Meltwater

2.17%

YEAR-ON-YEAR CHANGE

+13.6%

+26 BPS

OTHER
DEVICES



K
Meltwater

0.05%

YEAR-ON-YEAR CHANGE

-92.5%

-62 BPS

SOURCE: STATCOUNTER. NOTES: FIGURES REPRESENT THE NUMBER OF WEB PAGES SERVED TO BROWSERS RUNNING ON EACH TYPE OF DEVICE COMPARED WITH THE TOTAL NUMBER OF WEB PAGES SERVED TO BROWSERS RUNNING ON ANY DEVICE IN JUNE 2024. PERCENTAGE CHANGE VALUES REPRESENT RELATIVE CHANGE (I.E. AN INCREASE OF 20% FROM A STARTING VALUE OF 50% WOULD EQUAL 60%, NOT 70%). "BPS" VALUES REPRESENT BASIS POINTS, AND INDICATE THE ABSOLUTE CHANGE. FIGURES MAY NOT SUM TO 100% DUE TO ROUNDING.

PENGANTAR

RESPONSIVE WEBSITE

Mengapa *Web Responsive* menjadi penting?

- Direkomendasikan oleh Google
- Satu website untuk semua perangkat
- Mudah dikelola

<https://searchenginewatch.com/sew/how-to/2253965/3-reasons-why-responsive-web-design-is-the-best-option-for-your-mobile-seo-strategy>

STATIC vs RESPONSIVE WEB DESIGN

RESPONSIVE WEBSITE

- + Proses pembuatan, waktu yang dibutuhkan lebih cepat.
- + Proses desain, persiapan dan kebutuhan yang diperlukan lebih sedikit.
- Tidak memiliki desain optimal pada ukuran layar yang berbeda.
- Harus membuat situs terpisah untuk pengguna perangkat *mobile*.

TOOLS UNTUK RESPONSIVE WEB DESIGN

RESPONSIVE WEBSITE

- Responsivepx.com
- MobileTest.me
- RWDCalc.com

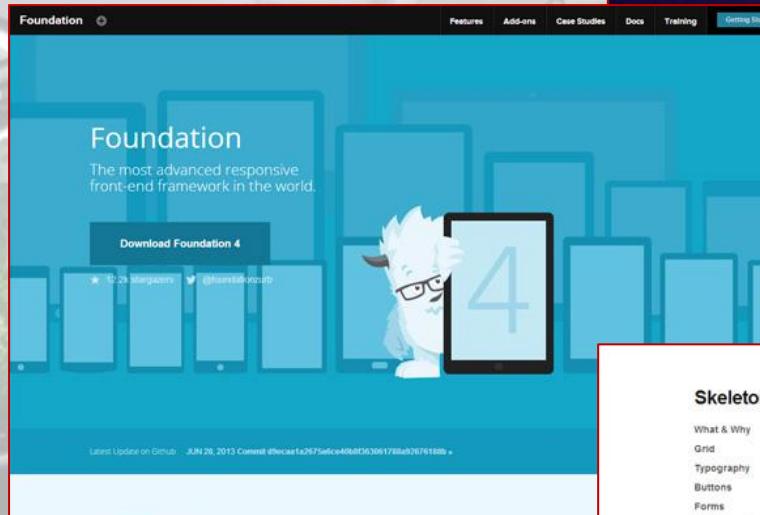
Cara lain adalah dengan menggunakan menu developer dari *browser*.

FRAMEWORKS

RESPONSIVE WEBSITE

- Bootstrap
- Foundation
- Metro UI
- Skeleton

<http://designinstruct.com/roundups/html5-frameworks/>



A screenshot of the Bootstrap website homepage. The top navigation bar includes links for Home, Get started, Scaffolding, Base CSS, Components, JavaScript, and Customize. The main title "Bootstrap" is prominently displayed in large white letters. Below it is a subtitle "Sleek, intuitive, and powerful front-end framework for faster and easier web development." A "Download Bootstrap" button is visible. The footer contains GitHub project information and social media links.

A screenshot of the Skeleton website homepage. The top navigation bar includes links for Skeleton, What & Why, Grid, Typography, Buttons, Forms, Media Queries, Support, Examples, Download, License & Log, and a New Relic advertisement. The main title "A Beautiful Boilerplate for Responsive, Mobile-Friendly Development" is displayed. Below it is a "What Is It?" section with a brief description and a "Responsive Grid Down To Mobile" section showing a grid layout. The footer contains a "Fast to Start" section with a brief description and a "Free Web App Performance Monitoring" advertisement for New Relic.

TEKNIK RESPONSIVE WEB DESIGN

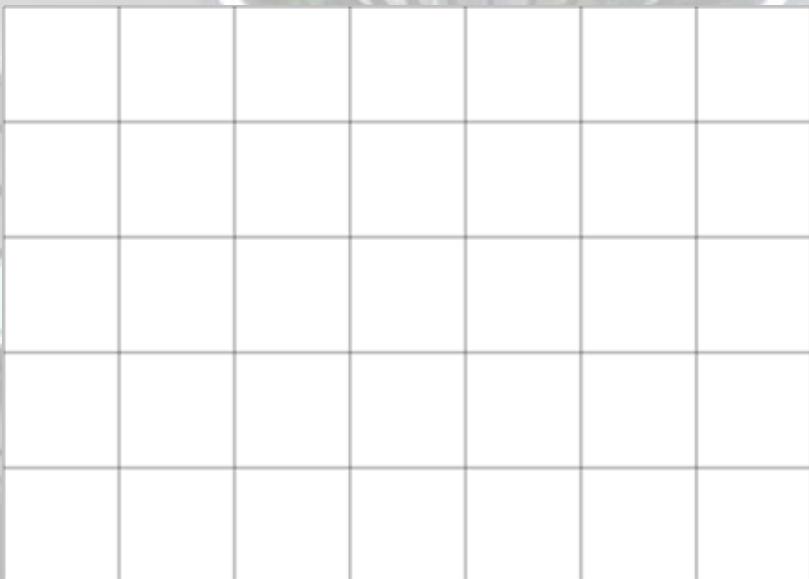
RESPONSIVE WEBSITE

Beberapa teknik untuk desain web yang responsif:

- *Grid System*
- *Fluid Grid*
- *Media Queries*

GRID SYSTEM

TEKNIK RESPONSIVE WEB DESIGN

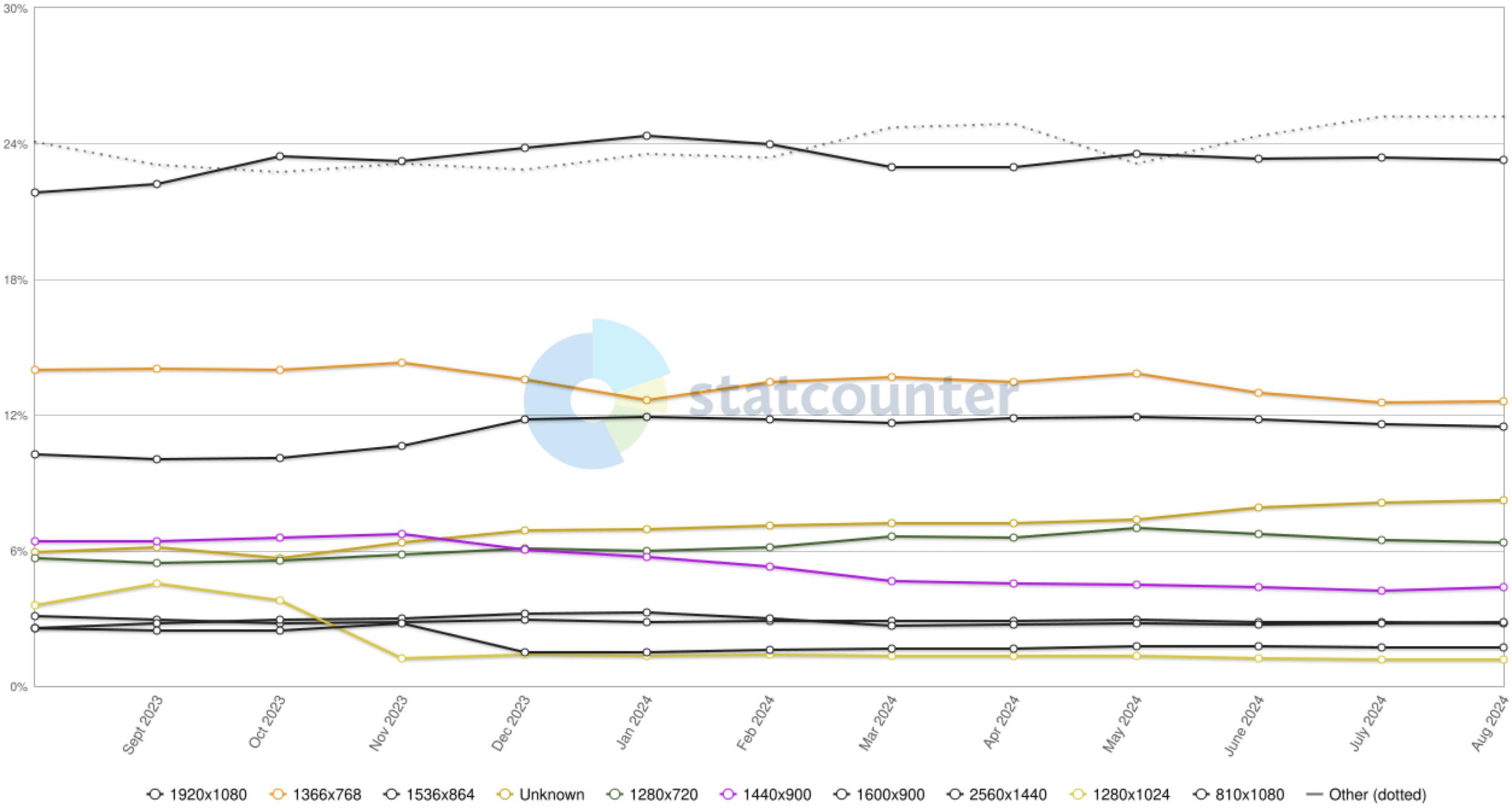


Grid

X

Konsep grid responsive web design

StatCounter Global Stats
Desktop Screen Resolution Stats Worldwide from Aug 2023 - Aug 2024



GRID SYSTEM

TEKNIK RESPONSIVE WEB DESIGN

- Teknik *Grid System* membagi *layout* halaman ke dalam multi kolom.
- Dalam desain web, ukuran standar *grid* yang biasa digunakan untuk resolusi 1024x768px adalah *grid* berukuran 960px.
- Ukuran 960px diambil karena bilangan tersebut mudah dibagi dengan 4, 8, 12, 16, 20 ataupun 24.
- Umumnya 1 baris terdiri dari 12 kolom.

960

GRID SYSTEM



GRID SYSTEM

TEKNIK RESPONSIVE WEB DESIGN

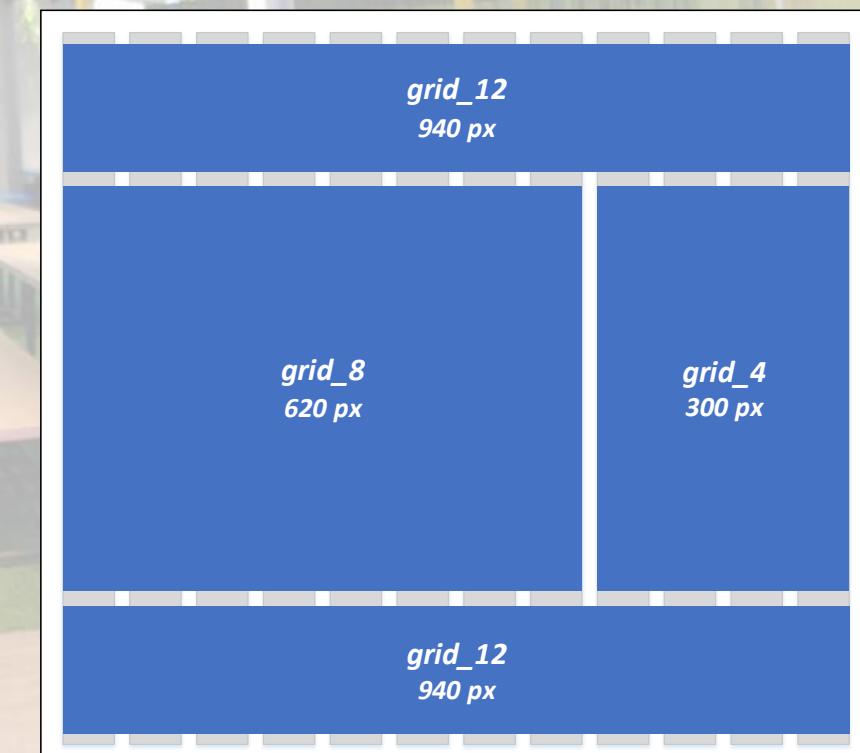
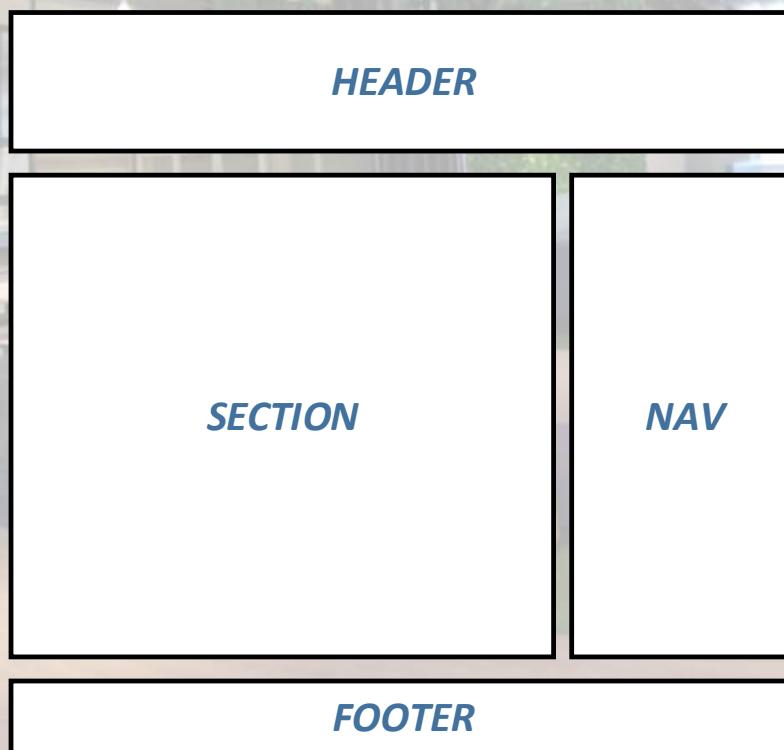
CSS Grid System 12 Kolom 960px.

```
.container { width: 960px; }
.grid_12 { width: 940px; }
.grid_11 { width: 860px; }
.grid_10 { width: 780px; }
.grid_9 { width: 700px; }
.grid_8 { width: 620px; }
.grid_7 { width: 540px; }
.grid_6 { width: 460px; }
.grid_5 { width: 380px; }
.grid_4 { width: 300px; }
.grid_3 { width: 220px; }
.grid_2 { width: 140px; }
.grid_1 { width: 60px; }
[class*="grid_"] { float: left; height: auto; margin: 0px 10px; }
```

GRID SYSTEM

AKTIVITAS LAB 1

- CSS Grid System 12 Kolom 960px.



GRID SYSTEM

AKTIVITAS LAB 1

1. Buat folder **responsiveweb** lalu simpan file CSS Grid System 12 Kolom berikut dengan nama **gridsystem.css**.

```
.container { width: 780px; width: 460px; width: 140px; width: 960px; margin: 0px auto; } .grid_9 { .grid_5 { .grid_1 { .grid_12 { width: 700px; width: 380px; width: 60px; width: 940px; } .grid_8 { } .grid_4 { } [class*="grid_"] { } .grid_11 { width: 620px; float: left; height: auto; margin: 0px; } .grid_7 { } .grid_3 { } .grid_10 { width: 540px; } .grid_6 { } .grid_2 { }
```

GRID SYSTEM

AKTIVITAS LAB 1

2. Buat file index.htm lalu isikan dengan sintaks berikut:

```
<!doctype html>
<html>
  <head>
    <meta charset="utf-8">
    <title>My First Web Responsive Page Using Grid System</title>
    <link rel="stylesheet" href="gridsystem.css">
  </head>
  <body>
  </body>
</html>
```

GRID SYSTEM

AKTIVITAS LAB 1

- Untuk bagian tag `<body>` modifikasi sintaksnya sebagai berikut:

```
<body>
  <header>
    <h1>My First Web Responsive Page using Grid System</h1>
  </header>
  <section> UKRIDA was officially founded on January 20, 1967 by the Decree of the
  Director General of Higher Education Ministry of Education and Culture of the Republic of
  Indonesia No. 202/DPT/I/1970. </section>
  <nav>
    <ul>
      <li>Home</li>    <li>History</li> <li>Contact Us</li>
    </ul>
  </nav>
  <footer> Copyright &copy; 2018 oleh Saya | All Rights Reserved </footer>
</body>
```

GRID SYSTEM

AKTIVITAS LAB 1

4. Buat file CSS berikut lalu beri nama **style.css** lalu tautkan dengan *file index.htm*.

```
* {  
    box-sizing: border-box;  
    border: 1px solid #999;  
}  
  
header, footer {  
    background-color: #43c1ca;  
    color: #ffffff;  
    padding: 15px;  
}  
  
nav ul {  
    list-style-type: none;  
}  
  
margin: 0;  
padding: 0;  
}  
  
nav li {  
    padding: 15px;  
    background-color: #43c1ca;  
    color: #ffffff;  
}  
  
nav li:hover {  
    background-color: #333;  
}
```

GRID SYSTEM

AKTIVITAS LAB 1

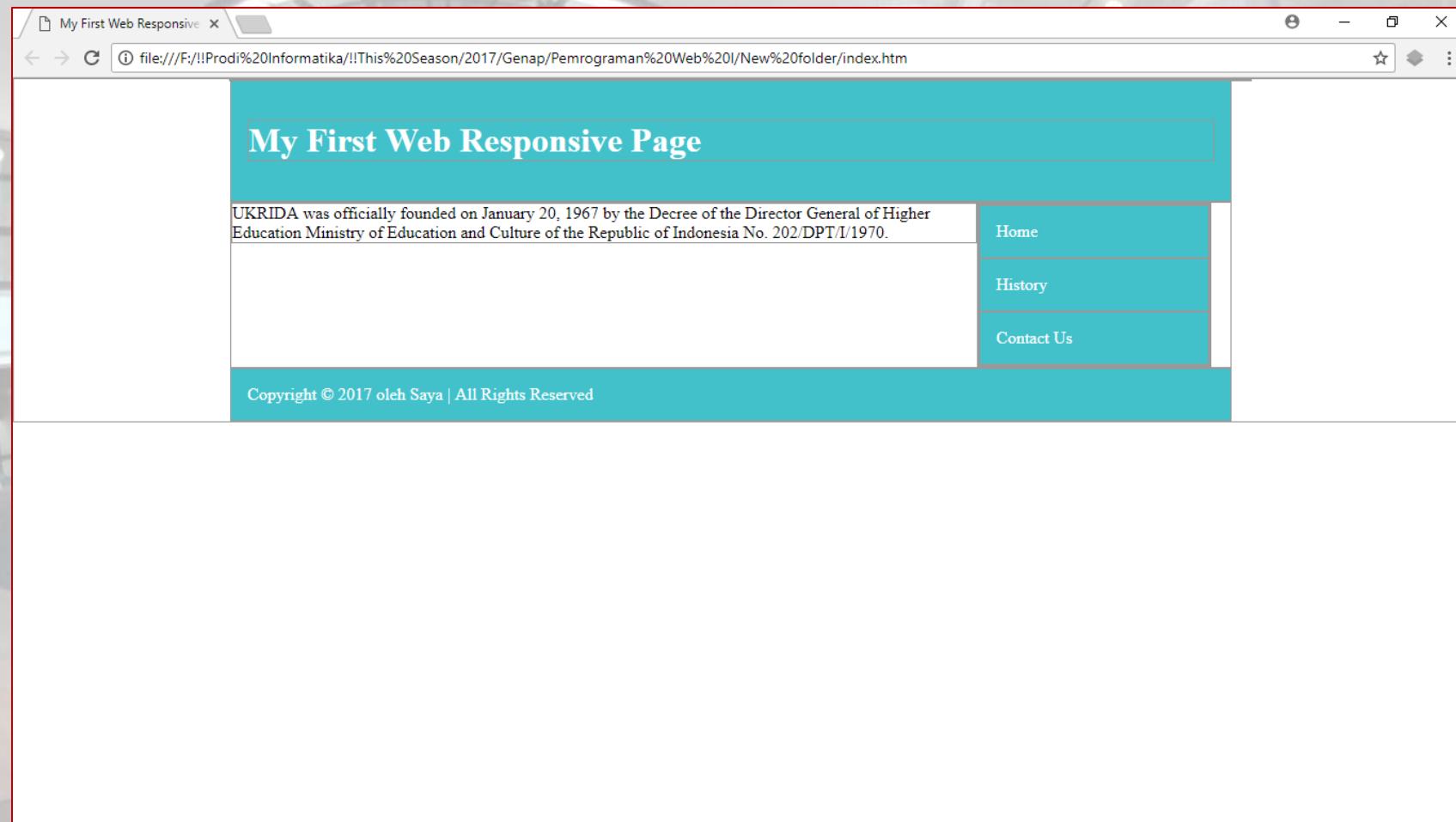
5. Setiap grid sebaris harus berjumlah 12. Sehingga modifikasi sintaks index.htm menjadi berikut:

```
<body class="container">
    <header class="grid_12">
        <h1>My First Web Responsive Page using Grid System</h1>
    </header>

    <div class="grid_12">
        <section class="grid_9"> UKRIDA was officially ... </section>
        <nav class="grid_3">
            <ul><li>Home</li><li>History</li><li>Contact Us</li></ul>
        </nav>
    </div>
    <footer class="grid_12"> Copyright &copy; 2018 oleh Saya | All Rights Reserved</footer>
</body>
```

GRID SYSTEM

AKTIVITAS LAB 1



FLUID GRID

TEKNIK RESPONSIVE WEB DESIGN

- *Fluid Grid* menggunakan *grid* dengan bentuk dan ukuran yang lebih fleksibel dan dapat menyesuaikan.
- Satuan ukurannya menggunakan ukuran % (persen).

FLUID GRID

TEKNIK RESPONSIVE WEB DESIGN

- Setiap baris harus berada dalam wrapper `<div>` dan berjumlah 12.

```
<div class="row">
  <div class="col-9">...</div> <!-- 75% -->
  <div class="col-3">...</div> <!-- 25% -->
</div>
```

- Sehingga untuk setiap kelas `row` sebagai wrapper perlu bersihkan dari `style` dari baris sebelumnya

```
.row {
  clear: both;
}
```

- Untuk `grid-view` 12 kolom maka lebar untuk setiap kolomnya adalah: $100\% / 12$ kolom = 8.33%.

FLUID GRID

AKTIVITAS LAB 2

1. Pada folder responsiveweb, buat file CSS Fluid Grid 12 Kolom lalu simpan dengan nama **fluidgrid.css**.

```
.col-12 { width: 100%; }  
.col-11 { width: 91.66%; }  
.col-10 { width: 83.33%; }  
.col-9 { width: 75%; }  
.col-8 { width: 66.66%; }  
.col-7 { width: 58.33%; }  
.col-6 { width: 50%; }  
.col-5 { width: 41.66%; }  
.col-4 { width: 33.33%; }  
.col-3 { width: 25%; }  
.col-2 { width: 16.66%; }  
.col-1 { width: 8.33%; }  
[class*="col-"] { float: left; padding: 10px; }  
.row { clear: both; }
```

FLUID GRID

AKTIVITAS LAB 2

2. Buat file html berikut lalu simpan dengan nama **index2.htm**.

```
<!doctype html>
<html>
  <head>
    <meta charset="utf-8">
    <title>My First Web Responsive Page using Fluid Grid</title>
    <link rel="stylesheet" href="fluidgrid.css">
  </head>
  <body>
    </body>
</html>
```

FLUID GRID

AKTIVITAS LAB 2

3. Untuk bagian tag `<body>` modifikasi sintaksnya sebagai berikut:

```
<body>
  <header>
    <h1>My First Web Responsive Page using Fluid Grid</h1>
  </header>
  <section> UKRIDA was officially founded on January 20, 1967 by the Decree of the Director
General of Higher Education Ministry of Education and Culture of the Republic of Indonesia No.
202/DPT/I/1970. </section>
  <nav>
    <ul>
      <li>Home</li> <li>History</li> <li>Contact Us</li>
    </ul>
  </nav>
  <footer> Copyright &copy; 2018 oleh Saya | All Rights Reserved </footer>
</body>
```

FLUID GRID

AKTIVITAS LAB 2

4. Tautkan file **style.css** yang sudah ada sebelumnya pada index2.html.

```
<!doctype html>
<html>
  <head>
    <meta charset="utf-8">
    <title>My First Web Responsive Page using Fluid Grid</title>
    <link rel="stylesheet" href="fluidgrid.css">
    <link rel="stylesheet" href="style.css">
  </head>
  <body>
  </body>
</html>
```

FLUID GRID

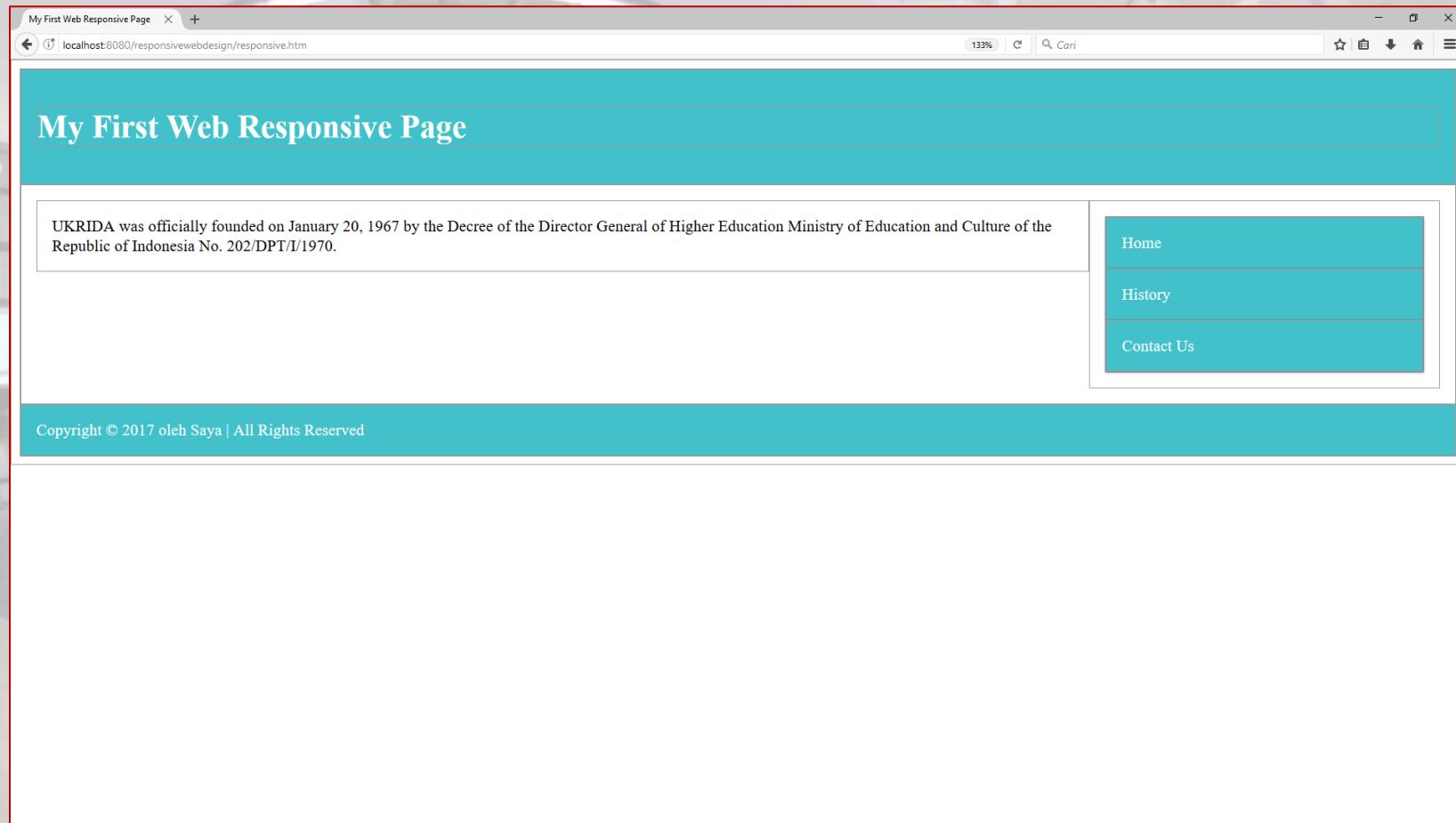
AKTIVITAS LAB 2

5. Setiap baris harus berada dalam wrapper `<div>` dan berjumlah 12. Sehingga modifikasi sintaks `index2.htm` menjadi berikut:

```
<body>
    <header class="row">
        <h1>My First Web Responsive Page using Fluid Grid</h1>
    </header>
    <div class="row col-12">
        <section class="col-9"> UKRIDA was officially ... </section>
        <nav class="col-3">
            <ul><li>Home</li><li>History</li><li>Contact Us</li></ul>
        </nav>
    </div>
    <footer class="row"> Copyright © 2018 oleh Saya | All Rights Reserved</footer>
</body>
```

FLUID GRID

AKTIVITAS LAB 2



MEDIA QUERIES

TEKNIK RESPONSIVE WEB DESIGN

- *Media Queries* adalah salah satu fitur dalam CSS3 yang memungkinkan untuk menentukan kapan aturan CSS tertentu harus diterapkan.
- Hal ini dikarenakan *Media Queries* dapat mengenali ukuran resolusi layar dari perangkat yang digunakan.

MEDIA QUERIES

TEKNIK RESPONSIVE WEB DESIGN

Untuk dapat menerapkan *Media Queries* adalah dengan menambahkan sintaks berikut ke dalam file CSS:

```
@media screen and (min-width:1399px) {  
    /* CSS styles */  
}  
  
@media screen and (min-width: 768px) and (max-width: 979px) {  
    /* CSS styles */  
}
```

MEDIA QUERIES

AKTIVITAS LAB 3

1. Pada tag header di **index2.html** tambahkan sintaks berikut:

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

MEDIA QUERIES

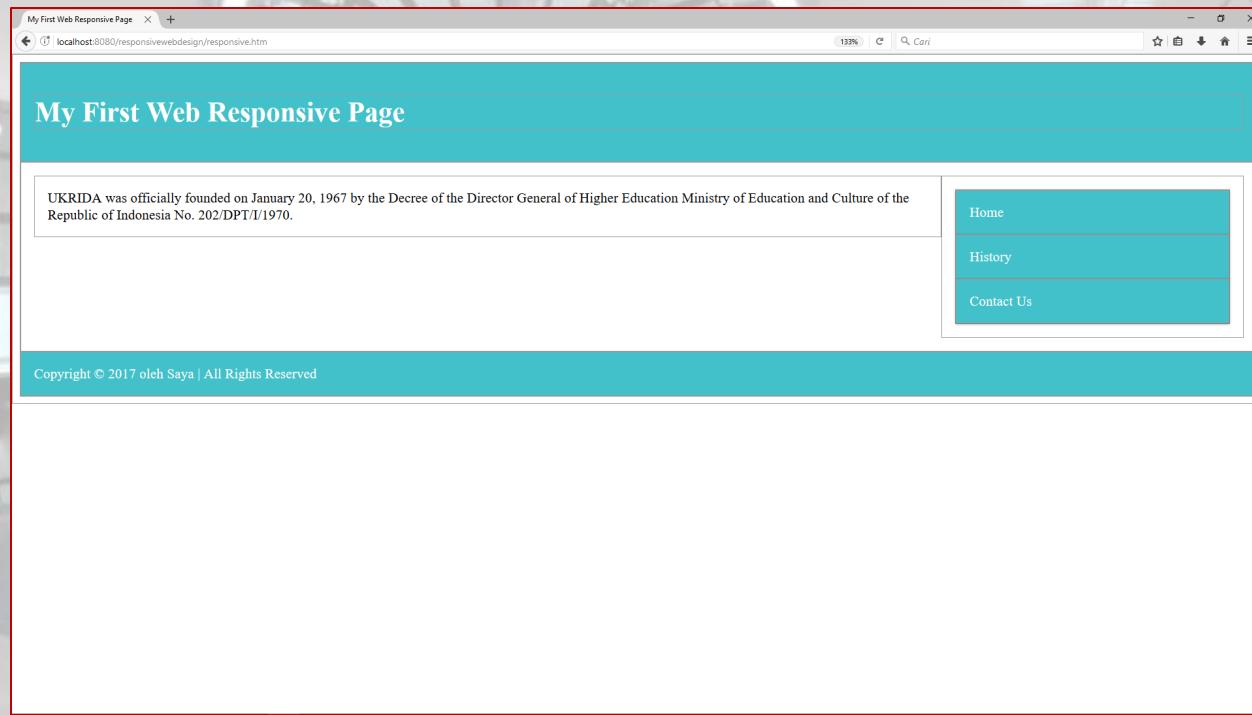
AKTIVITAS LAB 3

2. Pada `fluidgrid.css` yang sudah ada tambahkan sintaks CSS berikut:

```
@media only screen and (max-width: 768px) {  
    [class*="col-"] {  
        width: 100%;  
    }  
}
```

MEDIA QUERIES

AKTIVITAS LAB 3



Tampilan dengan resolusi $> 768\text{px}$



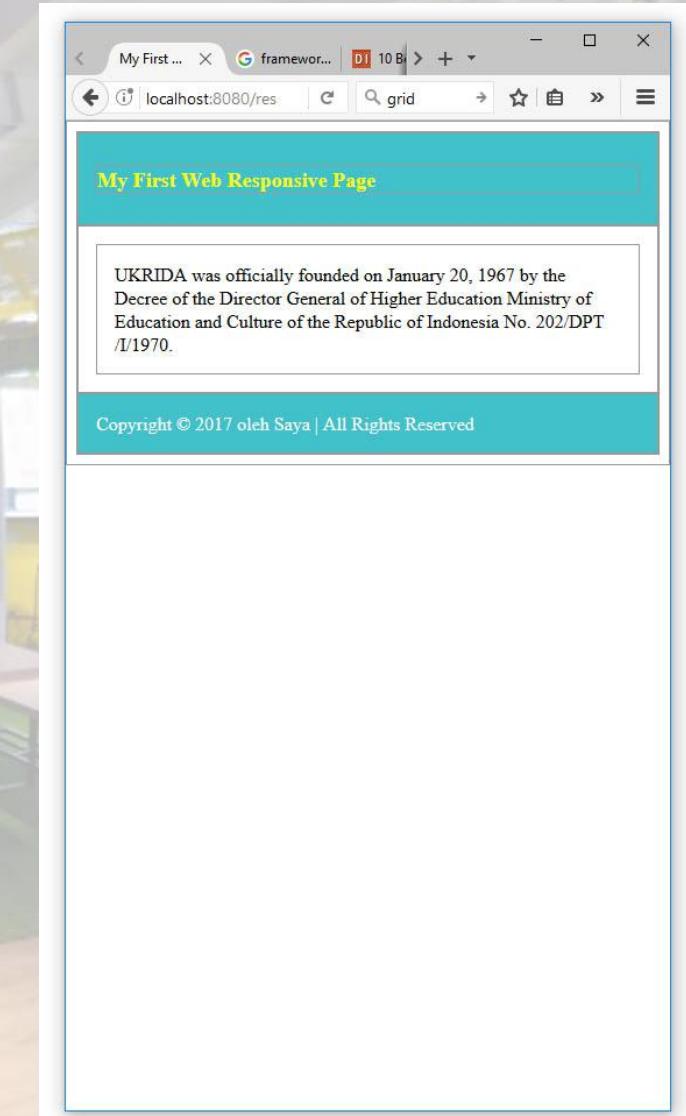
Tampilan dengan resolusi $\leq 768\text{px}$

MEDIA QUERIES

AKTIVITAS LAB 3

3. Pada fluidgrid.css yang sudah ada tambahkan sintaks CSS berikut:

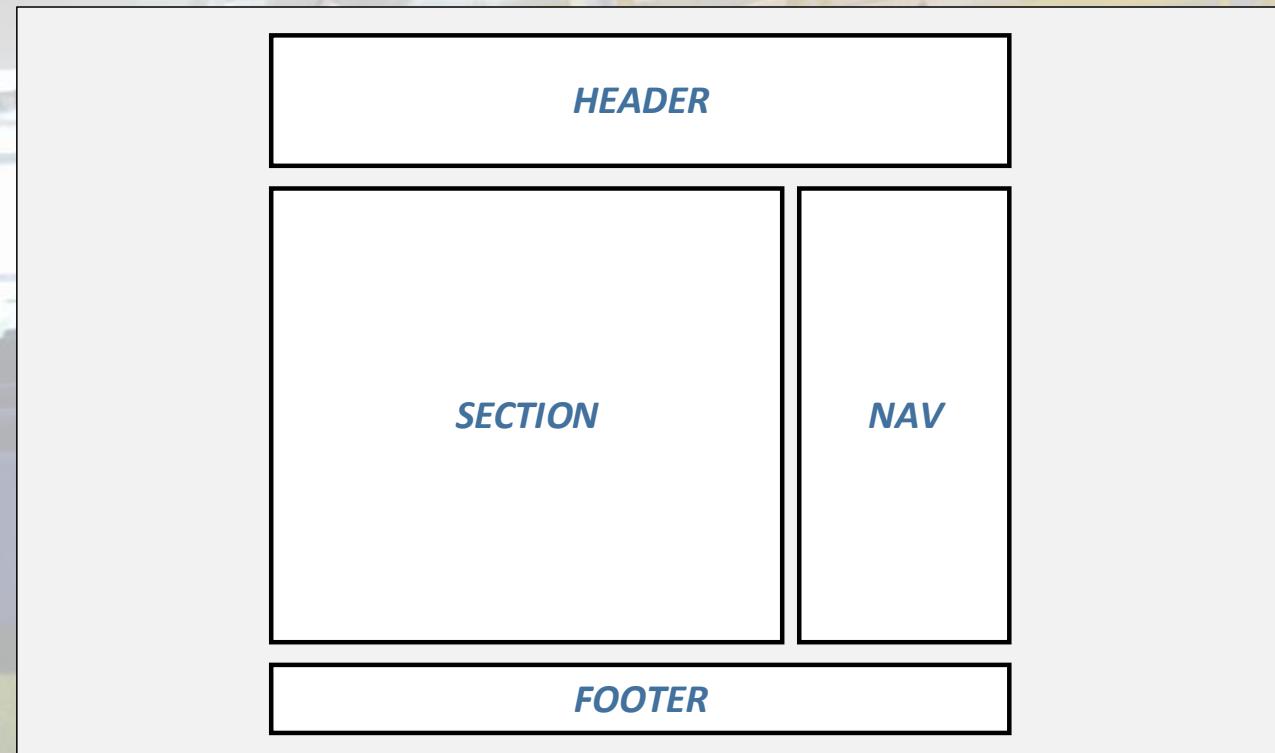
```
@media only screen and (max-width: 768px) {  
    [class*="col-"] {  
        width: 100%;  
    }  
  
    h1 { font-size: 16px; color: #FF0; }  
  
    nav { display: none; }  
}
```



MEDIA QUERIES

AKTIVITAS LAB 3

4. Misalkan kita bermaksud membuat *wrapping* agar lebar elemen tidak 100% pada perangkat dengan resolusi layar > 1399px maka pada **fluidgrid.css** dan **index2.html** yang sudah ada tambahkan sintaks berikut:



Resolusi layar > 1399 px

MEDIA QUERIES

AKTIVITAS LAB 3

fluidgrid.css:

```
@media only screen and (min-width: 1399px) {  
    .container {  
        width: 1170px;  
        margin: 0px auto;  
    }  
}
```

MEDIA QUERIES

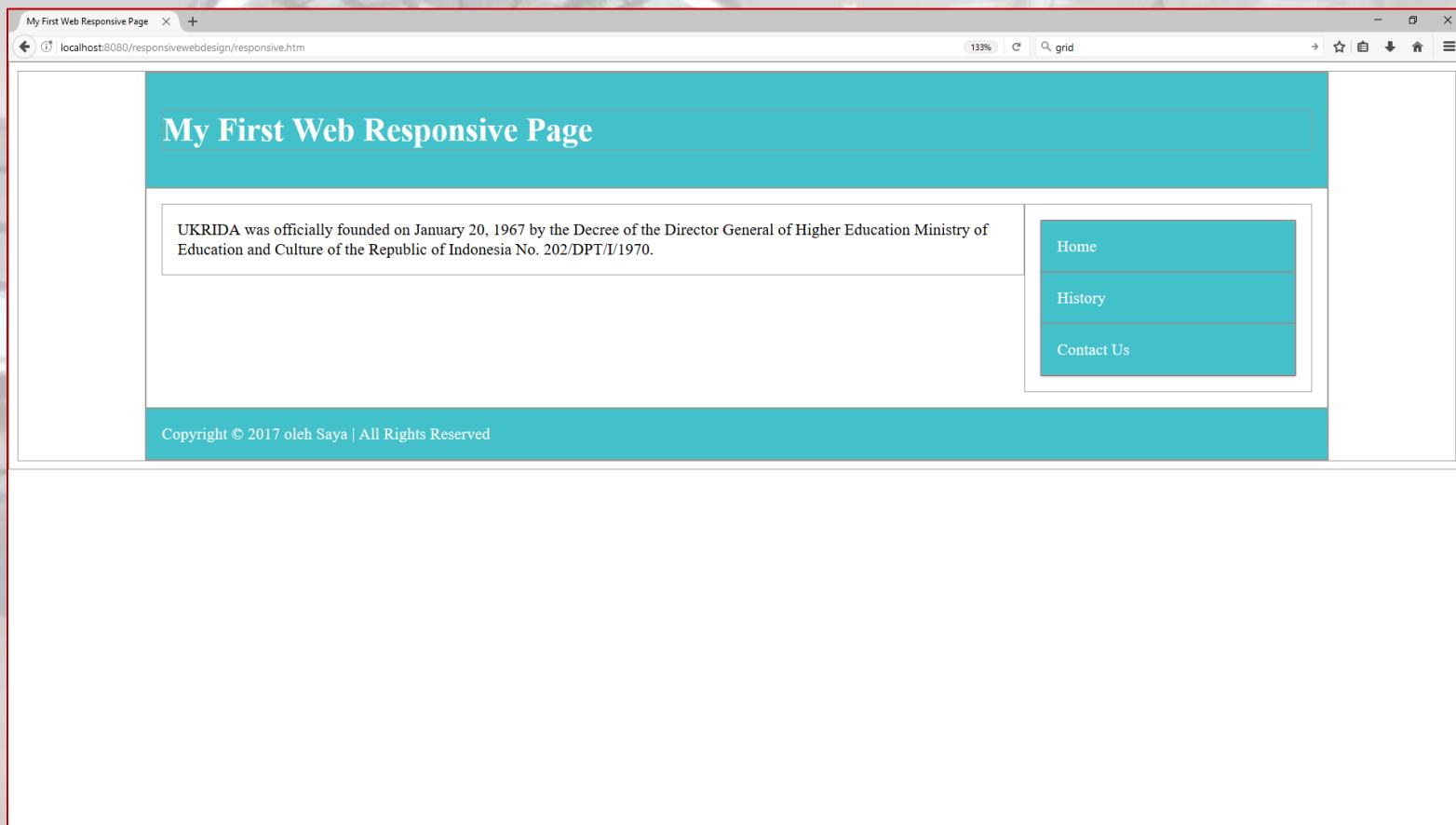
AKTIVITAS LAB 3

index2.html:

```
<body>
    <div class="container">
        <header class="row">
            <h1>My First Web Responsive Page</h1>
        </header>
        <div class="row col-12">
            <section class="col-9"> UKRIDA was officially ... </section>
            <nav class="col-3">
                <ul><li>Home</li><li>History</li><li>Contact Us</li></ul>
            </nav>
        </div>
        <footer class="row"> Copyright © 2018 oleh Saya | All Rights Reserved</footer>
    </div>
</body>
```

MEDIA QUERIES

AKTIVITAS LAB 3



GOOGLE FONTS

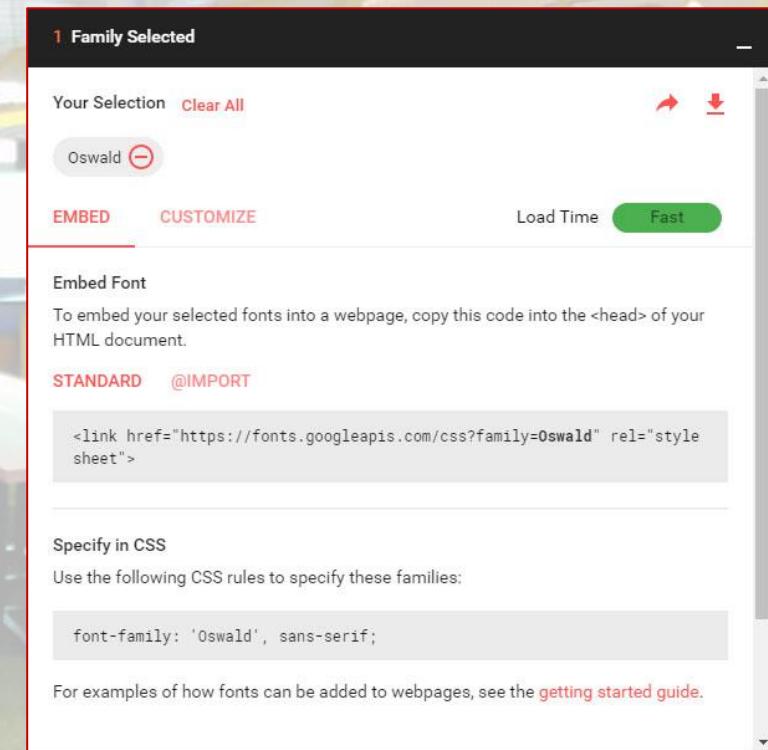
PEMROGRAMAN WEB

- Google Fonts menyediakan *high-quality fonts* yang siap digunakan pada website kita secara gratis.
- Silahkan cek variannya di: <https://fonts.google.com/>

GOOGLE FONTS API

AKTIVITAS LAB 3

1. Pilih satu atau lebih *font* di <https://fonts.googleapis.com>. dengan mengklik icon  yang ada di sudut kanan atas.
2. Pada jendela pop-up yang muncul dibagian kanan bawah, klik pada *taskbar* yang berwarna hitam untuk memunculkan isinya (gambar kanan).
3. Gunakan *script* yang disediakan dan tambahkan pada *project* kita.



GOOGLE FONTS API

AKTIVITAS LAB 3

4. Gunakan *project* sebelumnya. Pada file **index.htm** sesuaikan sintaksnya sebagai berikut:

```
<head>
  <meta charset="utf-8">
  <title>My First Web Layout Page</title>
  <meta name="description" content="my first web layout page">
  <link rel="stylesheet" href="style.css">
  <link href="https://fonts.googleapis.com/css?family=Oswald"
        rel="stylesheet">
</head>
```

GOOGLE FONTS API

AKTIVITAS LAB 3

5. Pada file **style.css** tambahkan sintaks berikut:

```
body {  
    font-family: 'Oswald', sans-serif;  
}
```

GOOGLE FONTS API

AKTIVITAS LAB 3

Selamat datang di website Saya

Beranda Tentang Saya Kontak

Ini adalah area section kiri

Kotak 1

Kotak 2

Kotak 3

Ini adalah area aside kanan

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