



Responsive Web Design in APEX - Theme 25

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OORAF

THEMES4APEX
Custom Oracle Application Express Interface Design

 **rokit**

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Agenda

- Responsive Web Design
- APEX/Theme 25
- Beyond

Responsive Web Design

Responsive web design (RWD) covers various techniques, both client and server side, that aim to make a website respond to the device it is viewed on.

It means, writing one codebase that will adapt your website on every screen size, device and device orientation, in order to provide the best possible experience to the user.

Key Techniques of RWD

- CSS @Media queries
- Grid Layouts
- Device/browser detection to enhance performance of your site and reduce bloat



@media Queries

aren't limited to the device width condition: there are many different properties you can test against using @media queries, including the device orientation, height, aspect ratio and resolution

```
@media screen and (max-device-width: 640px) and (orientation:portrait) {  
    /* Rules inside the @media condition only apply if the condition is met */  
    #mydiv {  
        display: inline-block;  
    }  
}
```

```
@media all and (orientation:portrait) { ... }  
@media all and (orientation:landscape) { ... }
```



@media Query Usage Inline

Put media queries directly in the style sheet.
This is the most common approach.

```
@media screen and (max-device-width: 640px) and (orientation:portrait) {  
    /* Rules inside the @media condition only apply if the condition is met */  
    #mydiv {  
        display: inline-block;  
    }  
}
```

@media Query Usage Import/Link

Use the @import rule to import style rules from other style sheets.

```
@import url(style600min.css) screen and (min-width: 600px);
```

Include a query in a linked style sheet's media attribute.

```
<link rel="stylesheet" type="text/css"  
      media="screen and (max-device-width: 800px)"  
      href="style800.css" />
```


@media query alternative

Use JavaScript to detect the viewport size and then set a className to the body element

```
1. //get crossbrowser window inner size
2. function getInnerWidth(){
3.     return (window.innerWidth)? window.innerWidth : ((document.document
4. Element.clientWidth)? document.documentElement.clientWidth :
5. document.body.clientWidth);
6. }
7. //check if window is big enough
8. if( getInnerWidth() >= 1440 ){
9.     document.body.className += ' wide'; //add the .wide class to the
10. body element.
11. }
```

@media query & CSS Units

- Absolute
 - Pixels (px)
 - Point (pt) = 1/72 of an inch
- Relative units
 - are based on the initial value
 - em is relative to the initial value of 'font-size' (M)
 - Percentages (%)
- Resolution
 - dpi/dpcm: dots per 'inch'/'centimeter'

Adapt Layout with @media query



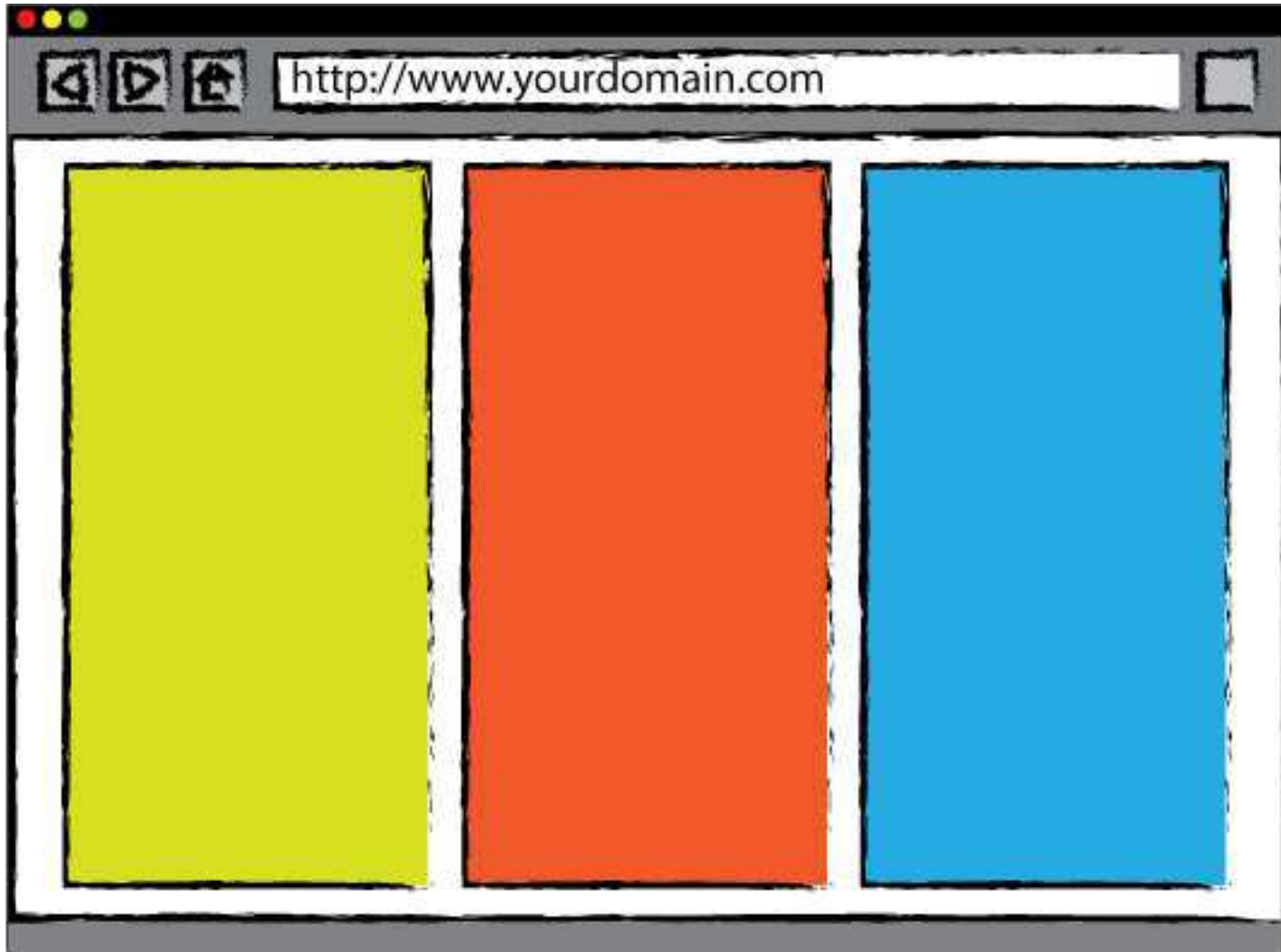
Desktop - 1600px

Netbook - 1024px

Tablet - 768px

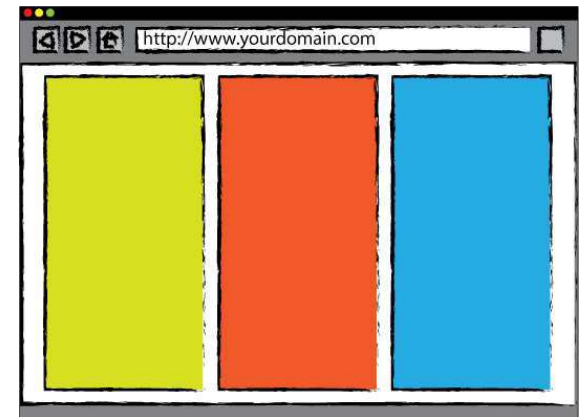
Smartphone - 320px

Three Column Desktop Layout



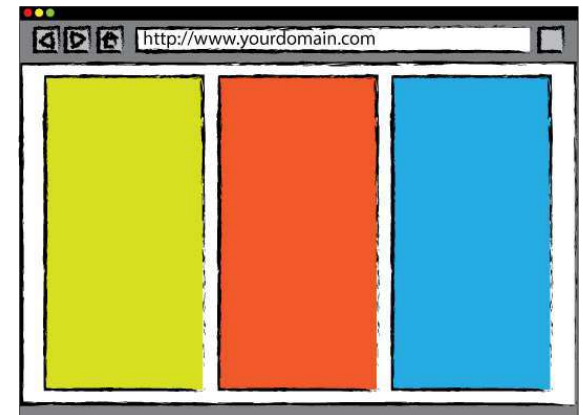
Example HTML

```
<div class="col1">
  <p>...</p>
</div>
<div class="col2">
  <p>...</p>
</div>
<div class="col3">
  <p>...</p>
</div>
```



Example CSS desktop

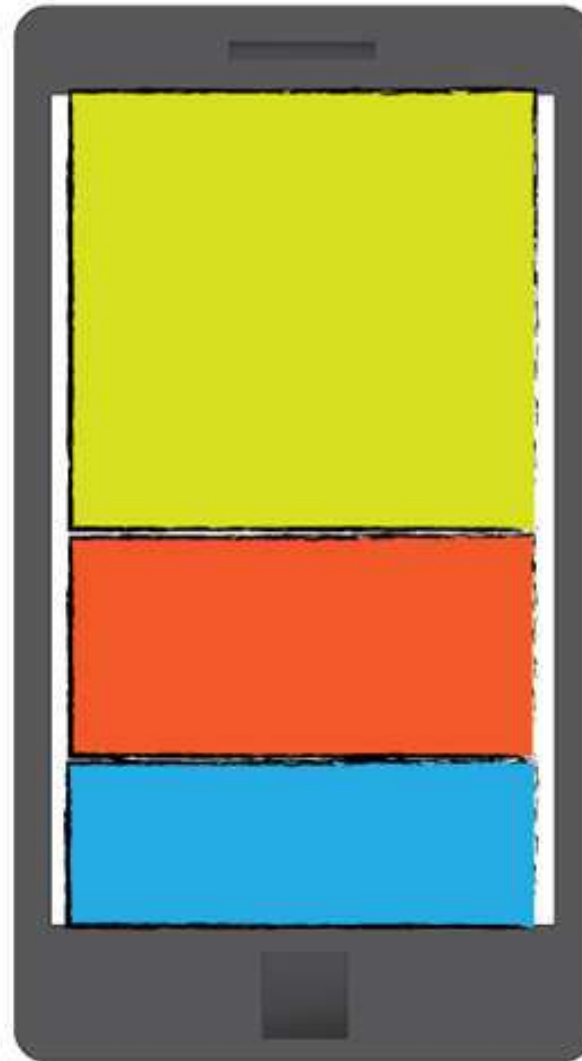
```
@media (min-device-width: 641px) {  
    /* target devices with desktop sized resolution */  
  
    .col1, .col2, .col3 {  
        /* Float the columns to create a three-column layout */  
        padding:          2em;  
        width:             30%;  
        margin-right:     1em;  
        float:             left;  
    }  
}
```



Example CSS smartphone

```
@media (max-device-width: 640px) {  
    /* target devices with smal sized resolution */  
  
    .col1, .col2, .col3 {  
        position:    relative;  
        padding:     2em;  
        width:       90%;  
        float:       none;  
        display:     block;  
        margin-right: 0;  
    }  
}
```

Single Column Smartphone Layout



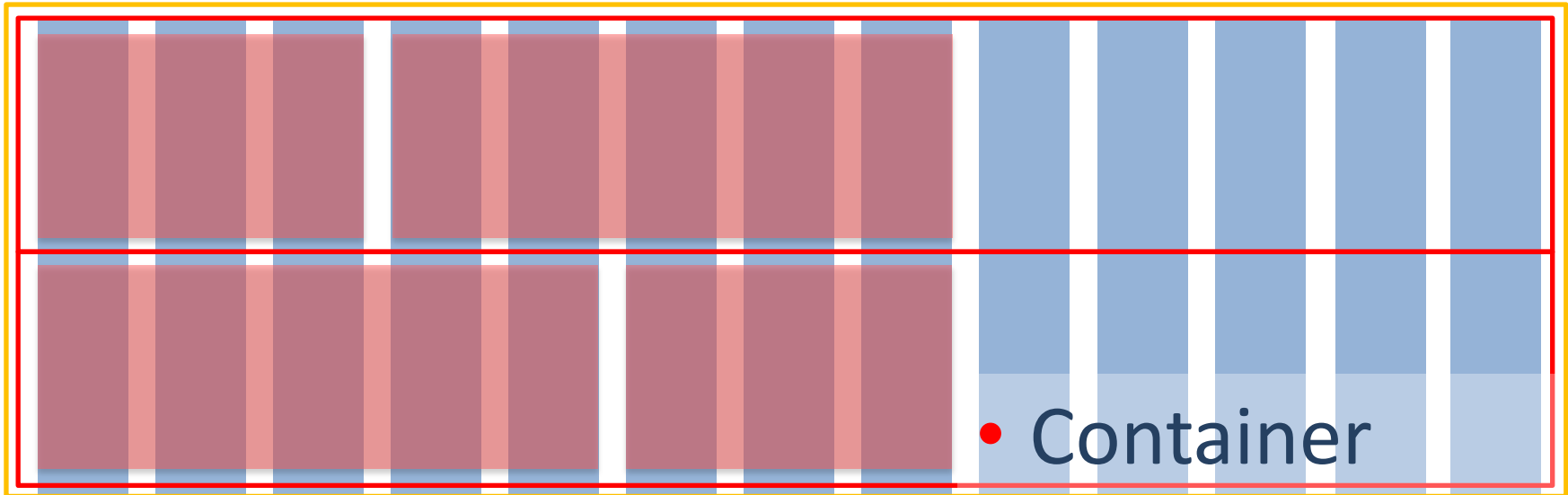
Floating



Grid What is it?

- Fixed Grid
 - Not necessarily responsive
 - Used to layout elements in a regular rhythm
- Fluid/Flexible Grid
- CSS3 Grid Layout

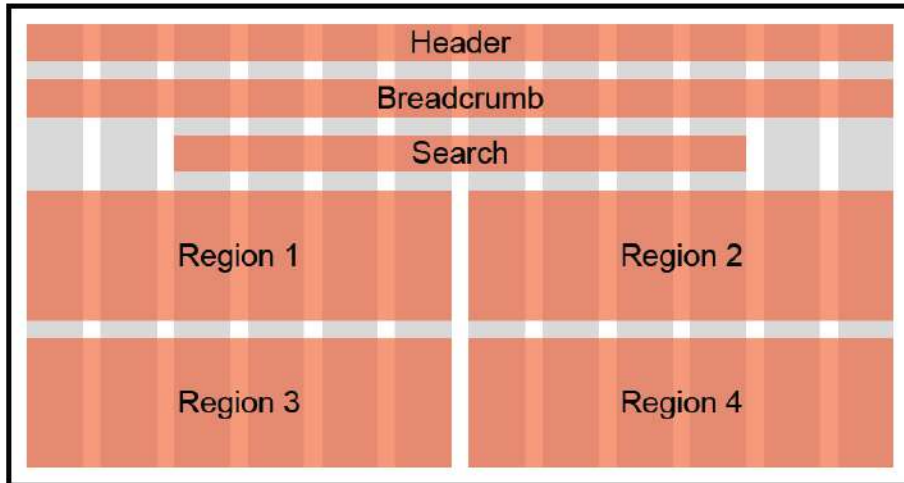
Grid Basics



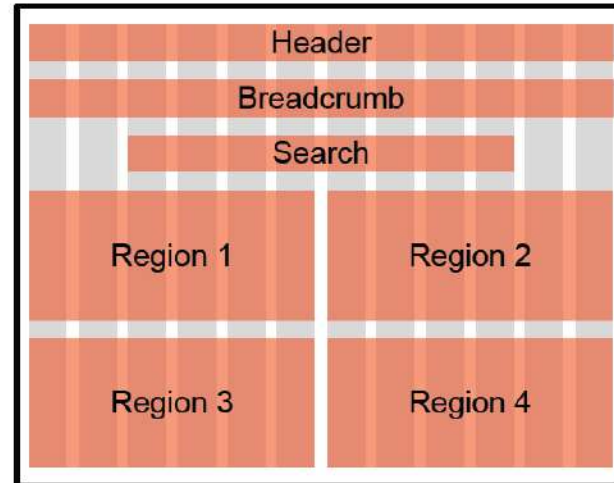
- Container
- Rows
- Columns:
 - width
 - gutter (afstand)

Responsive Grid

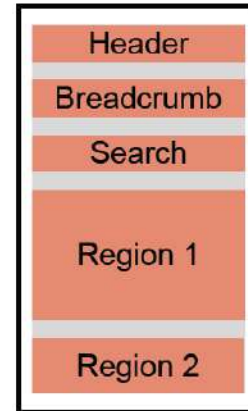
Desktop



Tablet



Mobile



CSS3 Grid Layout

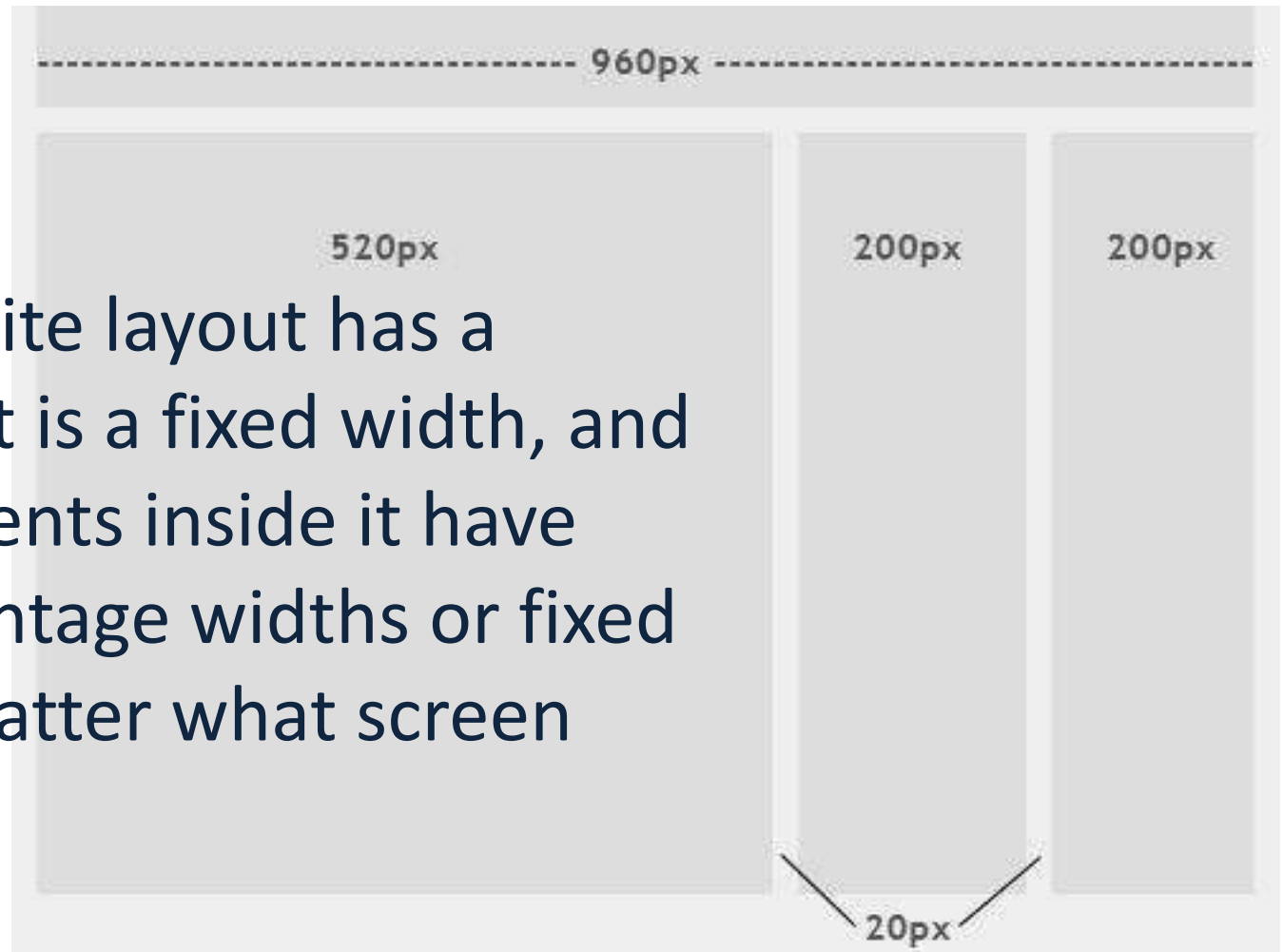


```
 .grid41  
   -ms-grid-column: 4;  
   -ms-grid-column-span: 7;  
   -ms-grid-row: 9;  
   -ms-grid-row-span: 7;
```

<http://dev.w3.org/csswg/css-grid/>

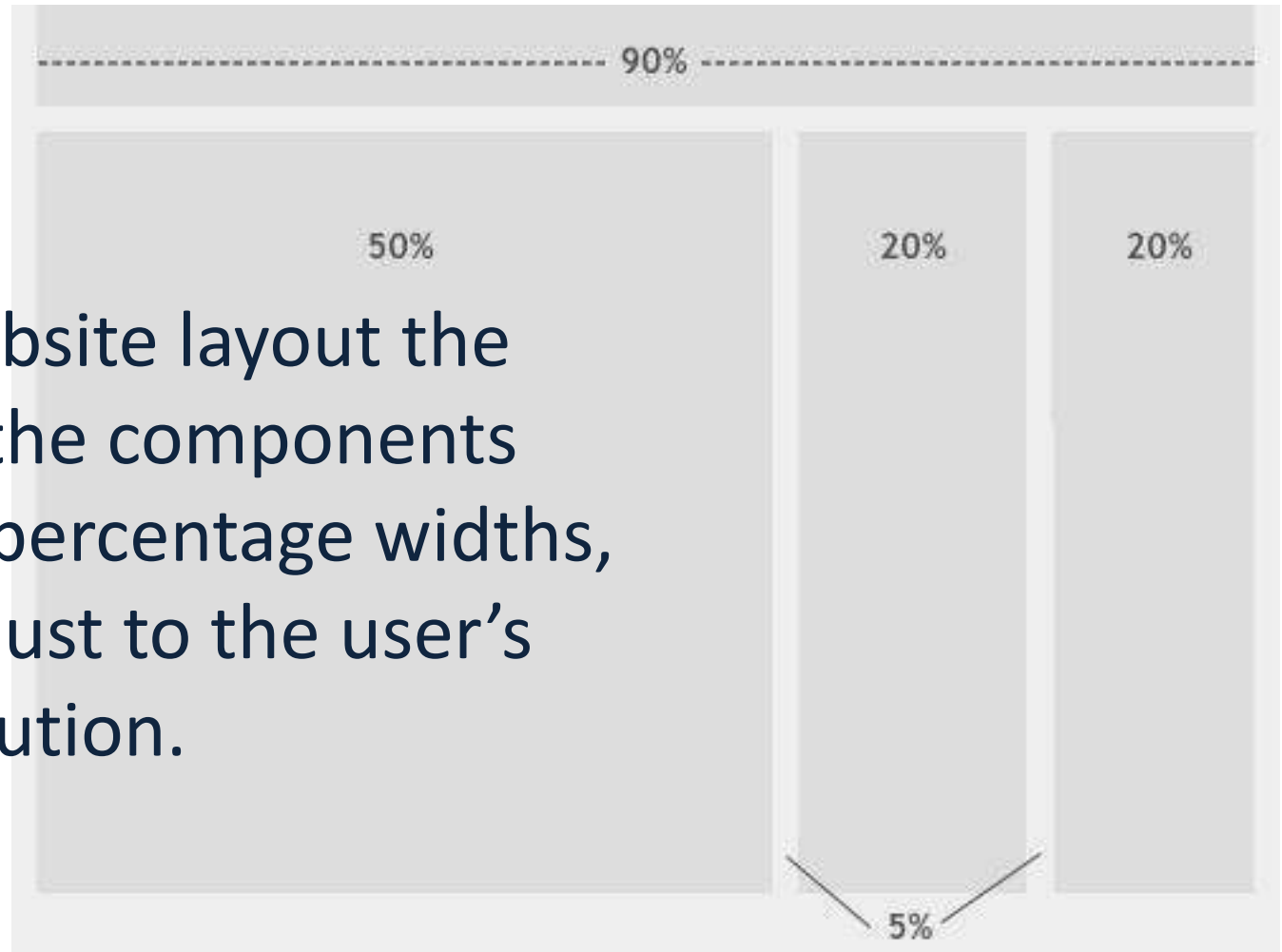
Fixed Website Layouts

A fixed website layout has a wrapper that is a fixed width, and the components inside it have either percentage widths or fixed widths no matter what screen resolution.



Fluid Website Layouts

In a fluid website layout the majority of the components inside have percentage widths, and thus adjust to the user's screen resolution.



Theme 25: Multiple Fixed Grids

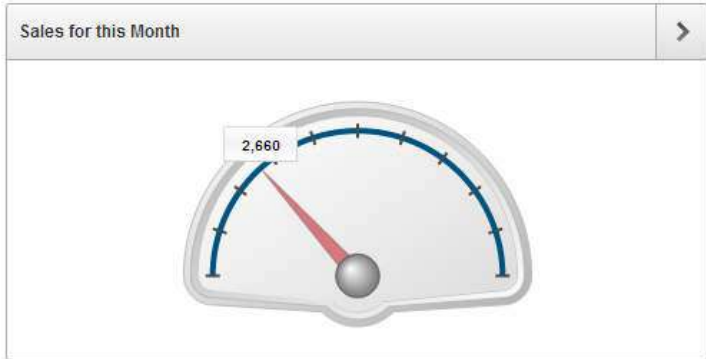
```
@media screen          and min-width  320px and max-width  479px
@media only screen and min-width  480px and max-width  767px
@media only screen and max-width  767px
@media only screen and min-width  768px and max-width  959px
@media only screen and min-width  960px and max-width 1024px
@media screen and min-width 1260px and max-width 1419px
@media screen and min-width 1420px and max-width 1659px
@media screen and min-width 1660px and max-width 1899px
@media screen and min-width 1900px
@media screen and min-width 2540px
```


APEX Responsive Features

- Declarative way to lay out regions and items on a page without manual css overrides (region attributes)
- Allows implementation of other grid frameworks such as twitterbootstrap, 960 gs, etc. (template)

Theme 25

Search customers, orders and product data



Top Customers + >

Bradley, Eugene - 2 Order(s)	\$2,760.00
Logan, Edward - 2 Order(s)	\$2,420.00
Dulles, John - 1 Order(s)	\$2,380.00
Hartsfield, William - 2 Order(s)	\$2,370.00
LaGuardia, Fiorello - 1 Order(s)	\$1,090.00

Top Products + >

Jacket - 18 x \$1.50	\$2,700.00
Bag - 16 x \$1.25	\$2,000.00
Trousers - 21 x \$80	\$1,680.00
Ladies Shoes - 12 x \$1.20	\$1,440.00
Business Shirt - 23 x \$50	\$1,150.00

Top Orders by Date + >

April 23, 2013	2,380
April 09, 2013	1,890
May 04, 2013	1,640
May 21, 2013	1,515
May 06, 2013	1,090

Tags

Region Grid Layout Attributes

Field	Value	Description
Start New Row	Yes	Position the region in a new row.
	No	Position the region on the same row as the previous region. This is useful when positioning a region to aside another region.
Column	Automatic	Position the region in a specific grid column. Selecting Automatic will automatically use the next available grid column to display the region.
	1-12	Position the region at this specific grid column.
New Column	Yes	Position this region in the next column in the same row.
	No	Position this region in the same column as the previous region.
Column Span	Automatic	Determines how many grid columns should be used by the region. Selecting Automatic will balance the available grid columns within all regions in the same grid row.
	1-12	Use this specific number of grid columns for this region.

Region Definition

Region: 2 of 2 Name: Region 1

Show All Identification Source User Inte

Grid Layout

Start New Row ▼

Column ▼

New Column ▼

Column Span ▼

Theme 25 Grid

The screenshot displays a web browser window with the URL `localhost:8080/apex/f?p=108:1:13869969997979::NO::`. The page header is a blue bar with the text "RWD Demo" on the left and a user profile "demo" with a "Logout" link on the right. Below the header is a light blue navigation bar with buttons for "Home", "Page 2", "Page 3", and "End". A breadcrumb trail shows "Home". The main content area is a grid with three regions: "Region 2" (top), "Region 3" (middle), and "Wide" (bottom). A "Navigation" sidebar on the left contains a "Sub 1" link. A large blue "DEMO" watermark is centered over the grid. At the bottom, a footer bar contains the text "Set Screen Reader Mode On release 1.0" and a status bar with links: "Home", "Application 108", "Edit Page 1", "Create", "Session", "Caching", "View Debug", "Debug", "Show Grid", and "Show Edit Links".

Page Template Grid Attributes

Grid Layout

Type Fixed Number of Columns ▼

* Maximum Columns 12

Always use Max Columns No ▼

Has Column Span Yes ▼

Emit Empty Leading Columns Yes ▼

Emit Empty Trailing Columns No ▼

First Column Attributes alpha

Last Column Attributes omega

Page Template Grid Definition

* Container Template

```
#ROWS#
```

```
#USED_COLUMNS_NUMBER#
#USED_COLUMNS_ALPHA#
#USED_COLUMNS_ALPHA_MINUS#
#USED_COLUMNS_WORD#
#USED_COLUMNS_PLURAL#
```

* Row Template

```
<div class="apex_row">
#COLUMNS#
</div>
```

```
#ROWS#
```

```
#COLUMNS#
```

* Column Template

```
<div class="apex_cols apex_span_#COLUMN_SPAN_NUMBER# #FIRST_LAST_COLUMN_ATTRIBUTES#">
#CONTENT#
</div>
```

```
#COLUMN_NUMBER#
#COLUMN_ALPHA#
#COLUMN_WORD#
#COLUMN_PLURAL#
#COLUMN_SPAN_NUMBER#
#COLUMN_SPAN_ALPHA#
#COLUMN_SPAN_WORD#
#COLUMN_SPAN_PLURAL#
```

JavaScript Debug Code

```
apex.jquery(document)
  .on("apex-devbar-grid-debug-on", showGrid)
  .on("apex-devbar-grid-debug-off", hideGrid);
```

```
#ATTRIBUTES#
#FIRST_LAST_COLUMN_ATTRIBUTES#
#CONTENT#
```

CSS Utility Classes

Hide/show content depending on @media query

Class	Phones 767px and below	Tablets 979px to 768px	Desktops Default
<code>.visible-phone</code>	Visible	Hidden	Hidden
<code>.visible-tablet</code>	Hidden	Visible	Hidden
<code>.visible-desktop</code>	Hidden	Hidden	Visible
<code>.hidden-phone</code>	Hidden	Visible	Visible
<code>.hidden-tablet</code>	Visible	Hidden	Visible
<code>.hidden-desktop</code>	Visible	Visible	Hidden

Responsive Interactive Reports

Sample Database Application

[demo](#)
[Mobile](#)
[Administration](#)
[Help](#)
[Logout](#)

Home
Customers
Products
Orders
Reports

Home

Go

Actions
▼

⚙️ Upload Data

Create Customer >

Customer Name	Address	City	State	ZIP Code	Tags
Bradley, Eugene	Schoephoester Road	Windsor Locks	CT	06096	REPEAT CUSTOM
Dulles, John	45020 Aviation Drive	Sterling	VA	20166	

<http://apex.shak.us/post/35664732629/responsive-interactive-reports-in-theme-25>

RWD Considerations

- Developing a responsive application can be time consuming and may require a deep understanding of grid layout, HTML and CSS.
- Page size remains the same. You are loading the full HTML, CSS, and JS resources, even on mobile devices with limited broadband.
- Responsive Web Design is just the tip of the iceberg.

Theme 25 != Theme

DON'T PANIC



Beyond Theme 25

- Navigation
- Data Tables
- Leverage APEX condition feature with client property detection to optimize layout generation.

The Grid, the Tab and the Ugly



Responsive Tabs in Theme

The screenshot displays the 'RWD Demo' application header with a user 'demo' and a 'Logout' link. Below the header, a navigation menu is shown with tabs for 'Home', 'Classic Report', 'Interactive Report', and 'Responsive Report'. The 'Interactive Report' tab is currently selected and highlighted in yellow. A dropdown menu is open over the 'Interactive Report' tab, listing the same four options, with 'Interactive Report' marked with a checkmark. Below the navigation, there is a search bar with a 'Go' button and an 'Actions' dropdown menu. At the bottom, a report table displays customer information.

Customer Id	Cust First Name	Cust Last Name	Cust Street Address1
7	Eugene	Bradley	Schoephoester Road
1	John	Dulles	45020 Aviation Drive

Responsive Tabs in Theme

The screenshot shows a responsive user interface with a blue header bar containing 'RWD Demo', a user profile 'demo', and a 'Logout' link. Below the header, there are three tabs: 'Home', 'Interactive Report', and 'Responsive Report'. The 'Home' tab is active, and a dropdown menu is open over it, listing 'Class Report', 'Interactive Report' (with a checkmark), and 'Responsive Report'. To the right of the tabs is a search bar with a 'Go' button. Below the search bar is an 'Actions' dropdown menu. At the bottom of the page is a table with the following data:

Customer Id	Cust First Name	Cust Last Name	Cust Street Address1
7	Eugene	Bradley	Schoephoester Road
1	John	Dulles	45020 Aviation Drive

<http://rokitta.blogspot.nl/2013/10/theme-25-responsive-tabs-enhancement.html>

Conditionally Show/Hide Content

RWD Demo

demo Logout

Home Classic Report Interactive Report **Responsive Report**

Customers

ID	First Name	Last Name	Adres 1	Adres 2	City	State	Postal Code	Email	Phone 1	Phone 2	URL	Credit Limit	Tags
1	John	Dulles	45020 Aviation Drive	-	Sterling	VA	20166	john.dulles@email.com				1000	-
2	William	Hartsfield	6000 North Terminal Parkway	-	Atlanta	GA	30320					1000	REPEAT CUSTOMER
3	Edward	Logan	1 Harborside Drive	-	East Boston	MA	02128					1000	REPEAT CUSTOMER
4	Frank	OHare	10000 West OHare	-	Chicago	IL	60666					1000	-
5	Fiorello	LaGuardia	Hangar Center	Third Floor	Flushing	NY	11371					1000	-
6	Albert	Lambert	10701 Lambert International Blvd.	-	St. Louis	MO	63145					1000	-
7	Eugene	Bradley	Schoephoester Road	-	Windsor Locks	CT	06096					1000	REPEAT CUSTOMER

desktop

mobile

RWD Demo
demo Logout

Responsive Report

Customers

ID	First Name	Last Name	City	Email	Credit Limit
1	John	Dulles	Sterling	john.dulles@email.com	1000
2	William	Hartsfield	Atlanta	-	1000
3	Edward	Logan	East Boston	-	1000
4	Frank	OHare	Chicago	-	1000
5	Fiorello	LaGuardia	Flushing	-	1000
6	Albert	Lambert	St. Louis	-	1000
7	Eugene	Bradley	Windsor Locks	-	1000

1 - 7

Show/Hide Column: Custom CSS

```
@media (orientation:portrait) and (max-width: 640px) {  
  [headers="CUST_STREET_ADDRESS1"], #CUST_STREET_ADDRESS1 {  
    display: none;      TD: table data/cell      TH: table header  
  }  
}
```


Responsive Reflow Tables

First Name	Last Name	Job Title	DOB	Status
Carle	Branco	Fashion Designer	15 Jul 1979	●
Claudine	Pennock	Electrical Lineworker	29 Apr 1971	●
Claudine	Holmes	Potato Sorter	1963	●
Consuelo	Robare	Internal Medicine Nurs	1974	●
Easer	Dragoo	Drywall Stripper	1977	●
Granville	Leonardo	Business Services Sales	1969	●
Isidra	<u>Boudreaux</u>	Traffic Court Referee	1972	●
Ilona	Mcgaughy	Cloak Room Attendant	1990	●
Isidra	Furniss	Jig Bore Tool Maker	1987	●
Judi	Badgett	Electrical Lineworker	1981	●
Jason	Mcfetridge	Staff Electronic Warfare	1981	●
Jesusa	Shumpert	Internal Medicine Nurse	1962	●
Lauri	Hyland	Blackjack Supervisor	1985	●
Lizzee	<u>Goodlow</u>	Technical Services Librari	1961	●
Lorraine	Mcgaughy	Hemodialysis Technician	1983	●
Maria	Nidey	Meat Packager	1966	●
Lorraine	Mcgaughy			●

First Name	Last Name
Shona	Woldt
Job Title : <u>Airtine Transport Pilot</u>	
DOB : 3 Oct 1981	
Status : ●	
Rivka	Bittinger
Maple	Halladay
Job Title : Aviation Tactical Readiness Officer	
DOB : 30 Dec 1991	
Status : ●	
Maxine	Woldt
Maria	Nidey
Lorraine	Mcgaughy

desktop

mobile

<http://rokitta.blogspot.nl/2014/03/declarative-reflow-table-reports-in.html>

Categorizr

Client device property detection

Oracle & Apex Geekery - DemoApp

Set Min/Max Date Remember Me - Autologin Categorizr

Viewport Properties	
Orientation	<input type="text" value="landscape"/>
Viewport Width	<input type="text" value="912"/>
Viewport Height	<input type="text" value="901"/>
Device Type	<input type="text" value="desktop"/>

`categorizr.isportrait`
`categorizr.islandscape`

`categorizr.isdesktop`
`categorizr.istablet`
`categorizr.ismobile`

<http://rokitta.blogspot.nl/2013/05/how-are-you-categorizr-for-apex-part-2.html>

Demo

Questions, Answers & Discussion



<http://rokitta.blogspot.com>



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<http://www.themes4apex.com>



<http://plus.google.com/u/0/102034735771815472470>



<http://nl.linkedin.com/in/rokit/>

