iLab

IBM Watson

Frontend development course

GIT & HTML & CSS

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GIT

Git

Git is a distributed revision control and source code management system with an emphasis on speed.

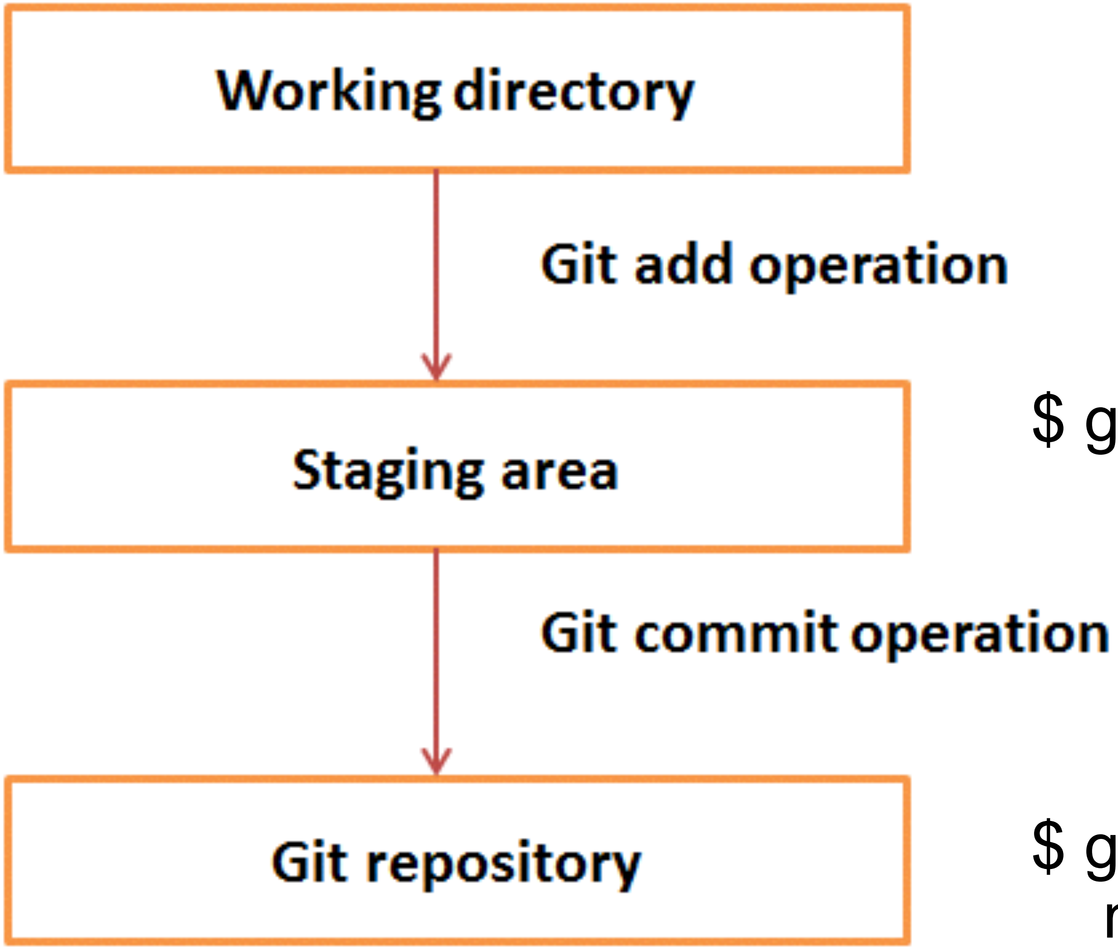
- Allows developers to work simultaneously.
- Does not allow overwriting each other’s changes.
- Maintains a history of every version.

Tool settings

```
$ git config --global user.name "Your Name Comes Here"

$ git config --global user.email you@yourdomain.example.com
```

Git Workflow



Working directory

Git add operation

Staging area

Git commit operation

Git repository

```
$ git add changed_file.txt
```

```
$ git commit -m “Commit
  message here”
```

Starting New Project in Git

Clone

Clone operation creates the instance of the repository. Clone operation not only checks out the working copy, but it also mirrors the complete repository. Users can perform many operations with this local repository. The only time networking gets involved is when the repository instances are being synchronized.

Init

This command creates an empty Git repository locally which can be then pushed to remote.

Git Collaboration

Pull operation copies the changes from a remote repository instance to a local one. The pull operation is used for synchronization between two repository instances. This is same as the update operation in Subversion.

Push operation copies changes from a local repository instance to a remote one. This is used to store the changes permanently into the Git repository. This is same as the commit operation in Subversion.

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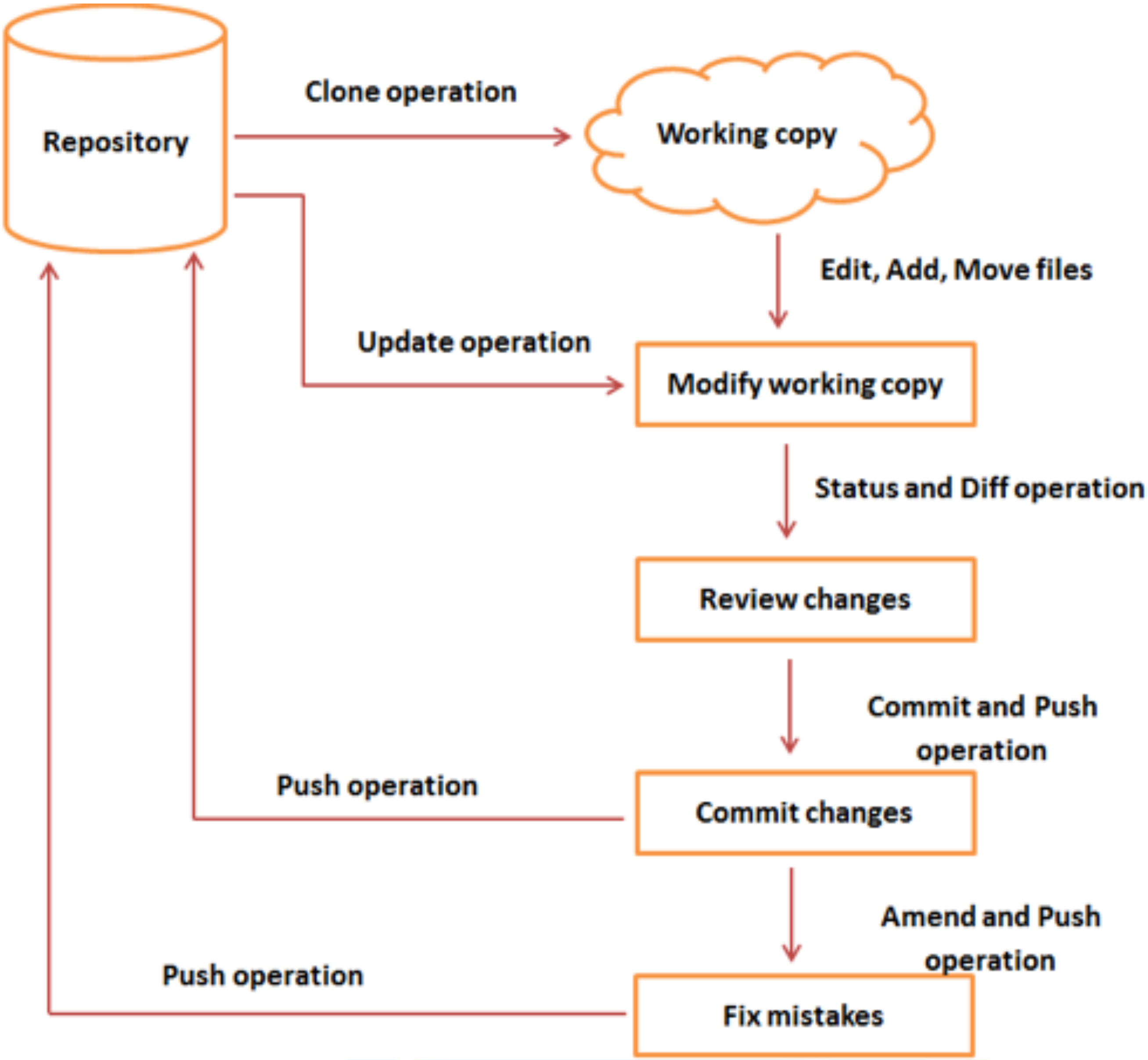
Git Lifecycle

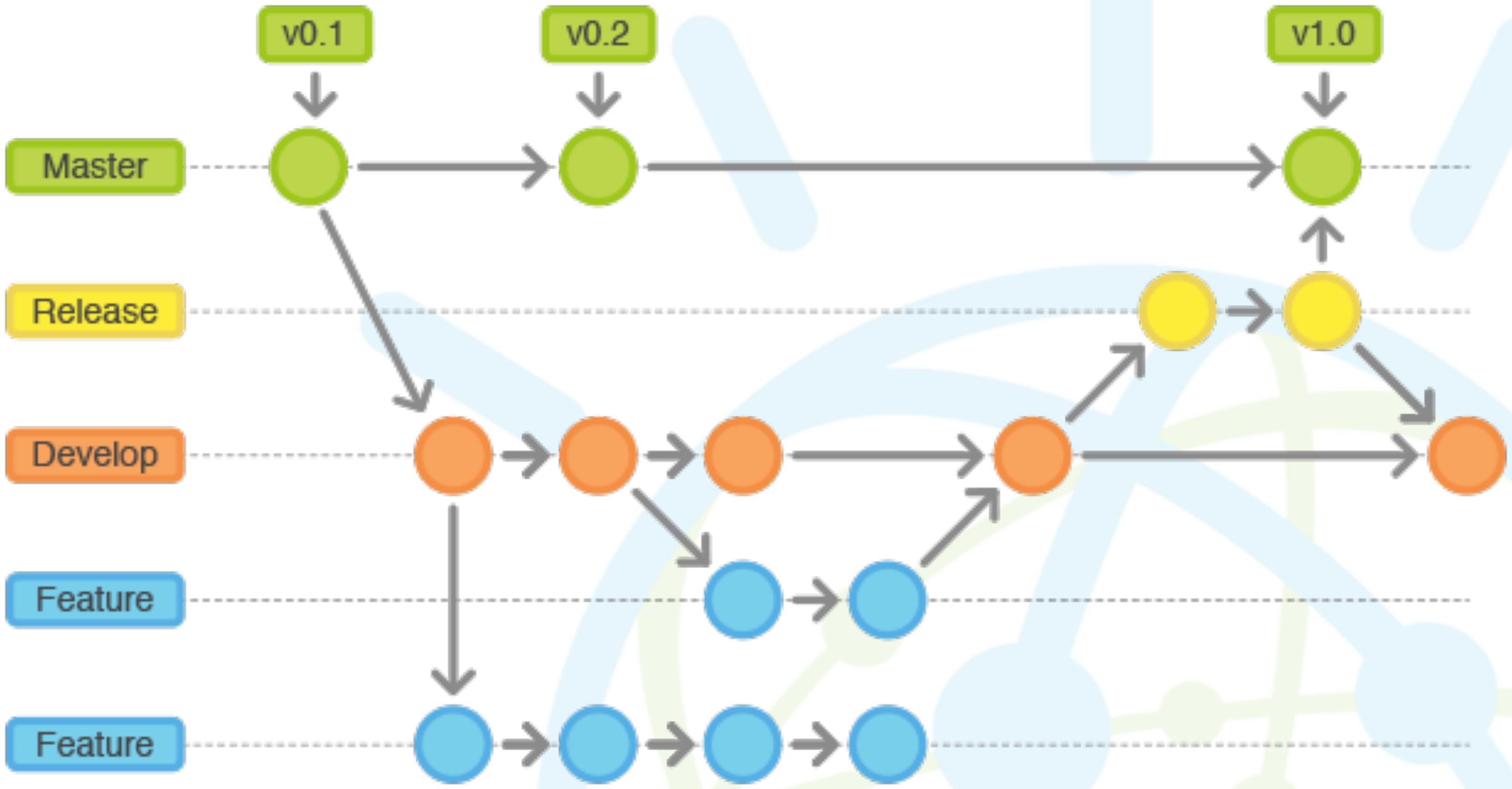


Git Branching

Branch operation allows creating another line of development. We can use this operation to fork off the development process into two different directions. For example, we released a product for 6.0 version and we might want to create a branch so that the development of 7.0 features can be kept separate from 6.0 bug fixes.

Merge operation incorporates changes from the named commits (since the time their histories diverged from the current branch) into the current branch.

Git Branching Workflow



HTML

Web page

A typical webpage depends on several technologies (such as CSS, JavaScript, Flash, AJAX, JSON) to control what the end-user sees, but most fundamentally, developers write webpages in HTML, without which there can be no webpages. To display the page on the client-side device, a browser starts out by reading the HTML

HTML structure

```
<!DOCTYPE html>
<html>
    <head>
        <title>Page title here</title>
    </head>
    <body>
        This is sample text...
        <!-- We use this syntax to write comments -->
        <!-- Page content and rest of the tage here... --
  >
        <!-- This is the actual area that gets shown in
  the browser -->
    </body>
</html>
```

Some basic HTML tags

<style> The HTML <style> element contains style information for a document, or part of a document. By default, the style instructions written inside that element are expected to be CSS.

<title> The HTML <title> element defines the title of the document, shown in a browser's title bar or on the page's tab. It can only contain text, and any contained tags are ignored.

<div> The HTML <div> element (or HTML Document Division Element) is the generic container for flow content, which does not inherently represent anything. It can be used to group elements for styling purposes (using the class or id attributes), or because they share attribute values, such as lang. It should be used only when no other semantic element (such as <article> or <nav>) is appropriate.

<li> The HTML <li> element (or HTML List Item Element) is used to represent an item in a list. It must be contained in a parent element: an ordered list (<ol>), an unordered list (<ul>), or a menu (<menu>). In menus and unordered lists, list items are usually displayed using bullet points. In ordered lists, they are usually displayed with an ascending counter on the left, such as a number or letter.

<p>The HTML <p> element (or HTML Paragraph Element) represents a paragraph of text.<pre> The HTML <pre> element (or HTML Preformatted Text) represents preformatted text. Text within this element is typically displayed in a non-proportional ("monospace") font exactly as it is laid out in the file. Whitespace inside this element is displayed as typed.

- full list of tags at https://developer.mozilla.org/en-US/docs/Web/HTML/Element

HTML Content Sectioning Elements

<address> The HTML <address> element supplies contact information for its nearest <article> or <body> ancestor; in the latter case, it applies to the whole document.

<article> The HTML <article> element represents a self-contained composition in a document, page, application, or site, which is intended to be independently distributable or reusable (e.g., in syndication). This could be a forum post, a magazine or newspaper article, a blog entry, an object, or any other independent item of content. Each <article> should be identified, typically by including a heading (<h1>-<h6> element) as a child of the <article> element.

<footer> The HTML <footer> element represents a footer for its nearest sectioning content or sectioning root element. A footer typically contains information about the author of the section, copyright data or links to related documents.

<header> The HTML <header> element represents a group of introductory or navigational aids. It may contain some heading elements but also other elements like a logo, wrapped section's header, a search form, and so on.

<h1>, <h2>, <h3>, <h4>, <h5>, <h6> Heading elements implement six levels of document headings, <h1> is the most important and <h6> is the least. A heading element briefly describes the topic of the section it introduces. Heading information may be used by user agents, for example, to construct a table of contents for a document automatically.

<hgroup> The HTML <hgroup> Element (HTML Headings Group Element) represents the heading of a section. It defines a single title that participates in the outline of the document as the heading of the implicit or explicit section that it belongs to.

<nav> The HTML <nav> element (HTML Navigation Element) represents a section of a page that links to other pages or to parts within the page: a section with navigation links.

<section> The HTML <section> element represents a generic section of a document, i.e., a thematic grouping of content, typically with a heading. Each <section> should be identified, typically by including a heading (<h1>-<h6> element) as a child of the <section> element.

HTML Tables

<table> The HTML Table Element (<table>) represents data in two dimensions or more.

<tbody> The HTML Table Body Element (<tbody>) defines one or more <tr> element data-rows to be the body of its parent <table> element (as long as no <tr> elements are immediate children of that table element.) In conjunction with a preceding <thead> and/or <tfoot> element, <tbody> provides additional semantic information for devices such as printers and displays. Of the parent table's child elements, <tbody> represents the content which, when longer than a page, will most likely differ for each page printed; while the content of <thead> and <tfoot> will be the same or similar for each page printed. For displays, <tbody> will enable separate scrolling of the <thead>, <tfoot>, and <caption> elements of the same parent <table> element. Note that unlike the <thead>, <tfoot>, and <caption> elements however, multiple <tbody> elements are permitted (if consecutive), allowing the data-rows in long tables to be divided into different sections, each separately formatted as needed.

<td> The Table cell HTML element (<td>) defines a cell of a table that contains data. It participates in the table model.

<tfoot> The HTML Table Foot Element (<tfoot>) defines a set of rows summarizing the columns of the table.

<th> The HTML element table header cell <th> defines a cell as a header for a group of cells of a table. The group of cells that the header refers to is defined by the scope and headers attribute.

<thead> The HTML Table Head Element (<thead>) defines a set of rows defining the head of the columns of the table.

<tr> The HTML element table row <tr> defines a row of cells in a table. Those can be a mix of <td> and <th> elements.

HTML Forms

<button> The HTML <button> Element represents a clickable button.

<form> The HTML <form> element represents a document section that contains interactive controls to submit information to a web server.

<input> Text input element

<option> In a Web form, the HTML <option> element is used to create a control representing an item within a <select>, an <optgroup> or a <datalist> HTML5 element.

<label> The HTML Label Element (<label>) represents a caption for an item in a user interface. It can be associated with a control either by placing the control element inside the <label> element, or by using the for attribute. Such a control is called the labeled control of the label element. One input can be associated with multiple labels.

HTML Miscellaneous Elements

<frame> <frame> is an HTML element which defines a particular area in which another HTML document can be displayed. A frame should be used within a <frameset>.

<noscript> The HTML <noscript> Element defines a section of html to be inserted if a script type on the page is unsupported or if scripting is currently turned off in the browser.

<script> The HTML Script Element (<script>) is used to embed or reference an executable script within an HTML or XHTML document.

<canvas> The HTML <canvas> Element can be used to draw graphics via scripting (usually JavaScript). For example, it can be used to draw graphs, make photo compositions or even perform animations. You may (and should) provide alternate content inside the <canvas> block. That content will be rendered both on older browsers that don't support canvas and in browsers with JavaScript disabled.

<embed> The HTML <embed> Element represents an integration point for an external application or interactive content (in other words, a plug-in).

CSS

How to Connect CSS to HTML

<style> element

```
<style type="text/css">
  body { color: black; background: white; }
</style>
```

Link to a separate style sheet

```
<link type="text/css" rel="stylesheet" href=“style.css">
```

Inline styling NOT RECOMMENDED

```
<p style=“text-weight: bold”>
```

CSS Selectors

```
<p class="key" id=“principal”>Lorem Ipsum</p>

<style>
    // tag selector
    p {
        text-decoration: underline;
    }
    // class selector
    .key {
        color: green;
    }
    // ID selector
    #principal {
        font-weight: bolder;
    }
    // combination
    p.key#principal {
        color: red;
    }
</style>
```

CSS Selectors by Relationship

`A E`

Any E element that is a descendant of an A element (that is: a child, or a child of a child, etc.)

`A > E`

Any E element that is a child (i.e. direct descendant) of an A element

`E:first-child`

Any E element that is the first child of its parent

`B + E`

Any E element that is the next sibling of a B element (that is: the next child of the same parent)

CSS Media Selectors

```
// the styling inside the brackets applies only for screens up to 600px wide

@media (max-width: 600px) {

   .facet_sidebar {

      display: none;

   }

}


// the styling inside the brackets applies only for printing purposes

@media print {

   #nav-area {display: none;}

}
```

CSS Pseudo-class Selectors

```
selector:pseudo-class {
  property: value;
}
```

List of pseudo-classes

:link

:visited

:active

:hover

:focus

:first-child

:last-child

:enabled

:disabled

:nth-child

:nth-last-child

:nth-of-type

:first-of-type

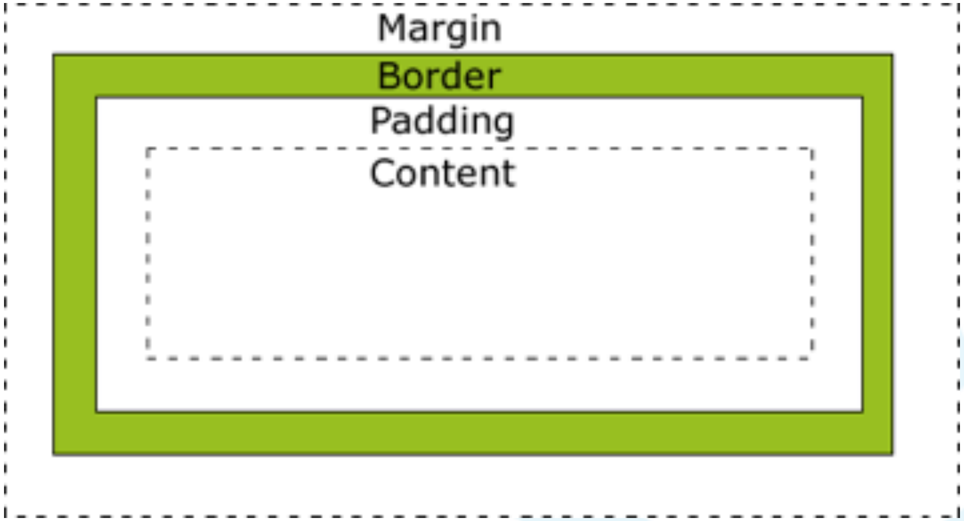
:last-of-type

:empty

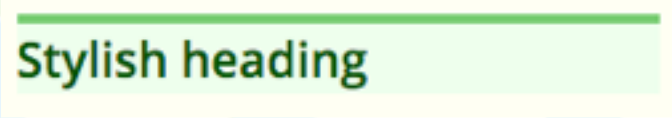
:target

:checked

Element Sizing

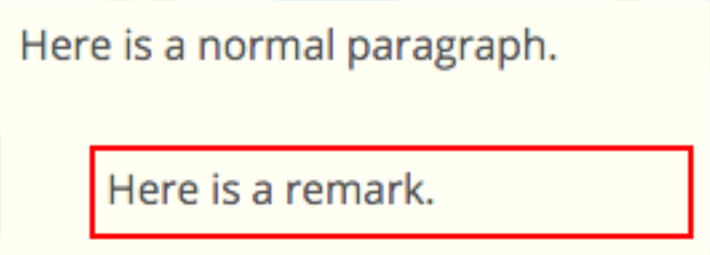


```
h3 {
  border-top: 4px solid #7c7; /* mid green */
  background-color: #efe;     /* pale green */
  color: #050;                /* dark green */
}
```



Stylish heading

```
p.remark {
  border: 2px solid red;
  padding: 4px;
  margin-left: 24px;
}
```



Here is a normal paragraph.

Here is a remark.

CSS Positioning

You can specify an element's position in four ways by specifying the position property and one of the following values.

relative

The element's position is shifted relative to its normal position. Use this to shift an element by a specified amount. You can sometimes use the element's margin to achieve the same effect.

fixed

The element's position is fixed. Specify the element's position relative to the document window. Even if the rest of the document scrolls, the element remains fixed.

absolute

The element's position is fixed relative to a parent element. Only a parent that is itself positioned with relative, fixed or absolute will do. You can make any parent element suitable by specifying position: relative; for it without specifying any shift.

static

The default. Use this value if you need to turn positioning off explicitly.

Cheatography

CSS2 Cheat Sheet

by Dave Child (DaveChild) via cheatography.com/1/cs/14/

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CSS2 Selectors

*	All elements
div	<div>
div *	All elements within <div>
div span	<span> within <div>
div, span	<div> and <span>
div > span	<span> with parent <div>
div + span	<span> preceded by <div>
.class	Elements of class "class"
div.class	<div> of class "class"
#itemid	Element with id "itemid"
div#itemid	<div> with id "itemid"
a[attr]	<a> with attribute "attr"
a[attr='x']	<a> when "attr" is "x"
a[class~='x']	<a> when class is a list containing 'x'
a[lang|='en']	<a> when lang begins "en"

CSS2 Pseudo Selectors and Pseudo Classes

:first-child	First child element
:first-line	First line of element
:first-letter	First letter of element
:hover	Element with mouse over
:active	Active element
:focus	Element with focus
:link	Unvisited links
:visited	Visited links
:lang(var)	Element with language "var"
:before	Before element
:after	After element

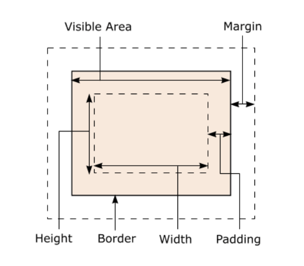
CSS2 Sizes

0	0 requires no unit
Relative Sizes	
em	1em equal to font size of parent (same as 100%)
ex	Height of lower case "x"
%	Percentage
Absolute Sizes	
px	Pixels
cm	Centimeters
mm	Millimeters
in	Inches
pt	1pt = 1/72in
pc	1pc = 12pt

CSS2 Colours

#789abc	RGB Hex Notation
#acf	Equates to "#aaccff"
rgb(0,25,50)	Value of each of red, green, and blue. 0 to 255, may be swapped for percentages.

CSS2 Box Model



CSS2 Positioning

display	clear
position	z-index
top	direction
right	unicode-bidi
bottom	overflow
left	clip
float	visibility

CSS2 Dimensions

width	min-height
min-width	max-height
max-width	vertical-align
height	

CSS2 Colour and Background

color	background-repeat
background	background-image
background-color	background-position
background-attachment	

CSS2 Text

text-indent	word-spacing
text-align	text-transform
text-decoration	white-space
text-shadow	line-height
letter-spacing	

CSS2 Fonts

font	font-weight
font-family	font-stretch
font-style	font-size
font-variant	font-size-adjust

CSS2 Boxes

margin	border-color
margin-top	border-top-color
margin-right	border-right-color
margin-bottom	border-bottom-color
margin-left	border-left-color
padding	border-style
padding-top	border-top-style
padding-right	border-right-style
padding-bottom	border-bottom-style
padding-left	border-left-style
border	border-width
border-top	border-top-width
border-bottom	border-right-width
border-right	border-bottom-width
border-left	border-left-width

CSS2 Tables

caption-side	border-spacing
table-layout	empty-cells
border-collapse	speak-header

CSS2 Paging

size	page-break-inside
marks	page
page-break-before	orphans
page-break-after	widows

CSS2 Interface

cursor	outline-style
outline	outline-color
outline-width	

CSS2 Aural

volume	elevation
speak	speech-rate
pause	voice-family
pause-before	pitch
pause-after	pitch-range
cue	stress
cue-before	richness
cue-after	speak-punctuation
play-during	speak-numeral
azimuth	

CSS2 Miscellaneous

content	list-style-type
quotes	list-style-image
counter-reset	list-style-position
counter-increment	marker-offset
list-style	

Resources

https://developer.mozilla.org/

http://www.html5rocks.com/

http://css3generator.com/

http://caniuse.com/