CSS

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CSS Zen Garden

Outline

- The Basics
- Selectors
- Layout
- Stacking Order

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Grammar

```
selector {
  property: value;
}
```

Example

```
/* for all h1's */
h1 {
  color: red;
  font-size: 56px;
}

/* for all img's */
img {
  border-color: blue;
  border-width: 3px;
}
```

Color & Background

```
h1 {
   color: #4b0082;
   background: #95a5a6;
}

h1 {
   color: rgba(11, 99, 150, 0.3);
}
```

More Background Properties

```
body {
    background: #000 /* color */
                url("img.png") /* image */
                no-repeat /* repeat */
                fixed /*attachment */
                right top; /*position */
}
```

- CSS3

```
body {
    background-size: cover;
}
```

CSS Properties

- Background:
  - E.g., background-color, background-image, etc.
- Text:
  - E.g., color, text-align, text-decoration, etc.
- Font:
  - E.g., font-family, font-size, font-style, font-weight, etc.
- List & table:
  - E.g., list-style-type, list-style-image, vertical-align, etc.
- Layout:
  - E.g., width, height, border, padding, margin, display, visibility, float, position, etc.
- See a list here

Native Font Stack

```
body {
  font-family:
  /* Safari for OS X and iOS */
  -apple-system,
  /* Chrome >= 56 for OS X , Windows, Linux and Android */
  system-ui,
  /* Chrome < 56 for OS X */
  BlinkMacSystemFont,
  /* Windows */
  "Segoe UI",
  /* Android */
  "Roboto",
  /* Basic web fallback */
  "Helvetica Neue", Arial, sans-serif;
}
```

Google Fonts

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Selectors

```
<ul id="todo-list">
  <li class="done">TODO 1</li>
  <li>TODO 2</li>
  <li class="done">TODO 3</li>
</ul>

li {                          /* element/tag selector */
  font-weight: bold;
}
#todo-list {                  /* ID selector */
  background-color: gray;
}
.done {                       /* class selector */
  text-decoration: line-through;
}
```

Chrome Inspector

More Selectors

```
/* composition */
#todo-list, li.done {...}

/* descendant selector */
li a {...}

/* adjacent selector */
li.done+li {...}

/* attribute selector */
a[href="http://..."] {...}
```

Pseudo Classes & Elements

```
/* pseudo class selector */
a:hover, a:visited {
  ...
}
li:nth-of-type(3) {
  ...
}
```

```
/* pseudo element selector */
p::first-latter {
  font-size: 200%;
}
h1::before {
  content: url(image.gif);
}
```

- More selector examples

Inheritance

- Most style properties of an element will be ***inherited*** by its descendants
  - E.g., font, color, text-align, etc.
- Common exceptions are those related to the box model
  - E.g., height, width, border-width, etc.
- Check this reference to see if a property is inheritable

Cascading

- Final properties gotten by an element are ***cascaded*** from all applicable rules

```
<body>
  <ul id="todo-list">
    <li>...</li>
    <li class="done">
      TODO
    </li>
  </ul>
</body>
```

```
body {
  color: gray;
}
#todo-list {
  font-weight: bold;
}
#todo-list li {
  color: red;
}
li.done {
  text-decoration:
              line-through;
}
```

How to Resolve Conflicts?

1. By importance
2. By ***specificity***

```
body {
  color: gray !important;
}
```

Example	# ID Selectors	# Class Selectors	# Type Selectors
ul	0	0	1
ul li.done	0	1	2
#sec-2 ul li (wins)	1	0	2

3. By source order
   - Rules written later win

- More about cascade and inheritance

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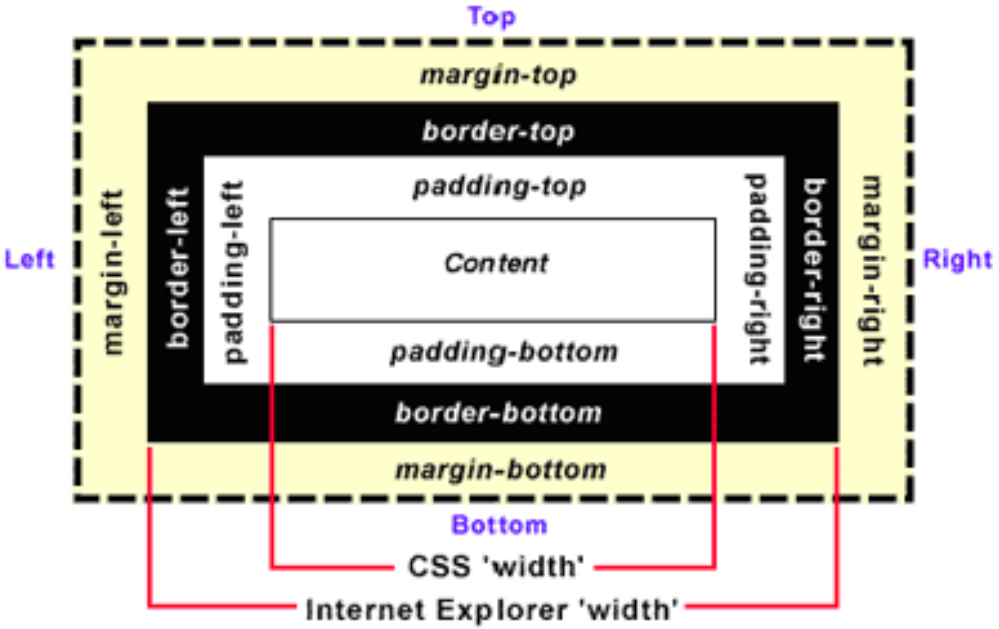
Box Model

- Each element is rendered as a box:



  - IE6 is problematic unless you give XHTML a DTD

Width and Height

```
div {
  width: 70%;
  max-width: 640px;
  font-size: 16px;
}
```

- It's a good practice to use `rem`

```
html{
  font-size: 16px;
}
div {
  width: 70%;
  max-width: 40rem;
  font-size: 1rem;
}
```

Box Sizing

```
div {
  width: 50%;
  padding: 1rem;
  border: 0.25rem solid blue;
}
```

- Box sizing in CSS 3:

```
* {
  /* border & padding count into width & height */
  box-sizing: border-box;
}
```

Inline vs. Block Boxes

- If an inline box wraps into multiple lines, you cannot set its width
  - Not the case for `<input>` and `<img>`
- Inline boxes reserve space for descender chars, e.g., ‘g’
- `<img>` is an inline element, so there is (unwanted) space between its bottom border and container

```
img {
  display: block; /* or inline */
}
```

Hiding Elements

- Method 1: `visibility:hidden`
  - Still occupies space in normal flow

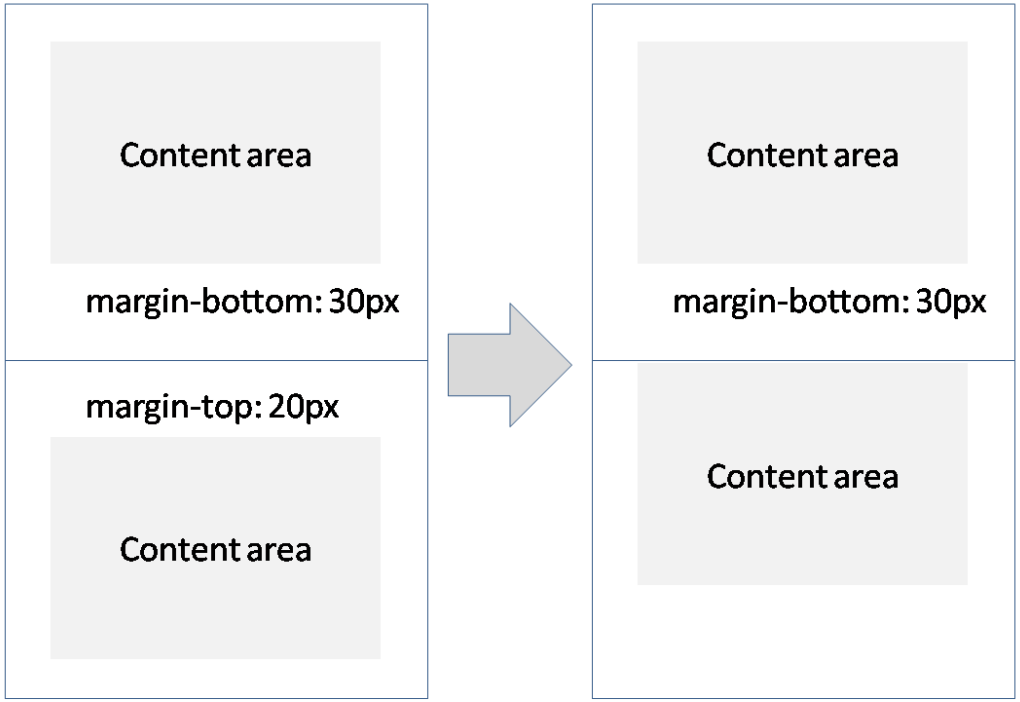
- Method 2: `display:none`
  - Removed from normal flow

Centering Text/Elements

- How to center text/inline elements inside a block element?
  - Add `text-align:center` to the block
- How to center text in an inline element?
  - There is no such an issue
- How to center a block element inside another?
  1. Give inner block a width (otherwise we don't have this issue)
  2. Add `margin-left:auto` and `margin-right:auto` to inner block

Margin Collapsing

- Adjacent margins collapse between
  - Sibling elements
  - Parent and first/last child



HTML Rendering

- The content are rendered following the ***normal flow***
  - Block elements are laid out vertically
  - Inline elements are laid out horizontally

Positioning

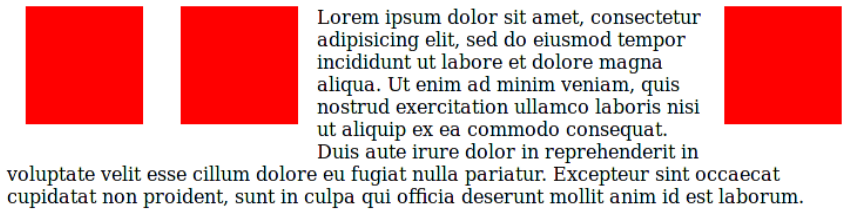
- Not positioned: `static` (in normal flow)

```
div {
  position: relative; /* in normal flow */
  top: 8px;           /* offset from static position */
  left: 8px;
}
div {
  position: absolute; /* removed from normal flow */
  top: 8px;           /* offset from positioned ancestor */
}
div {
  position: fixed;     /* removed from normal flow */
  top: 8px;           /* offset from browser window */
}
```

Floats

```
.elem {
  float: left;
}
```

```
.container::after {
  content: '';
  display: block;
  clear: both;
}
```



- Removed from normal flow and stick to the left/right-most side of its container
  - Unless specified, width and height shrink to fit the content

Demo: Photo Gallery

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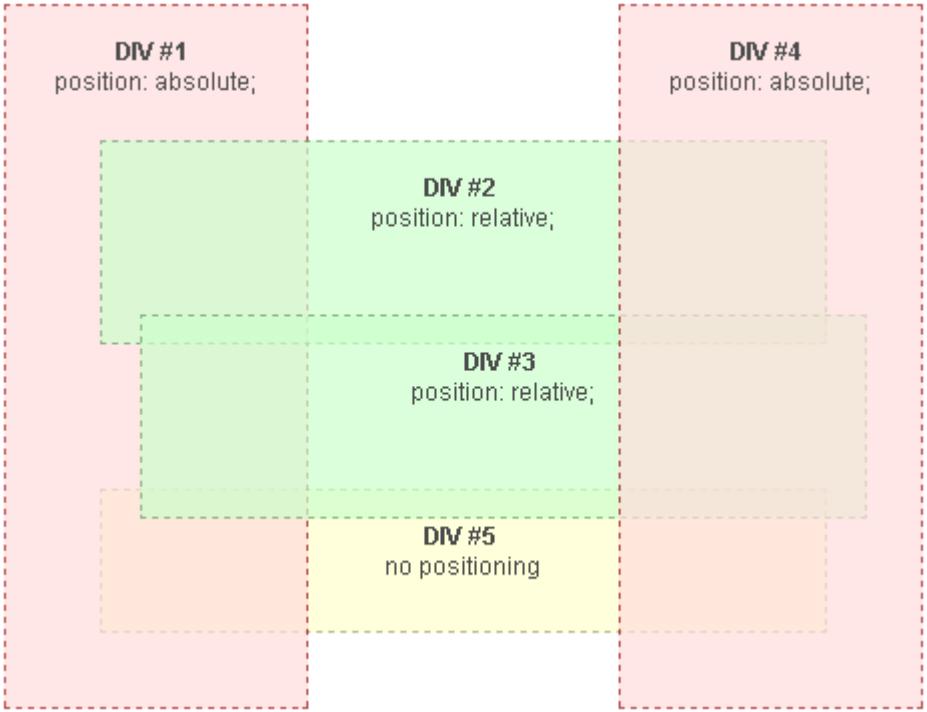
Overlapping Elements

- Elements may overlap

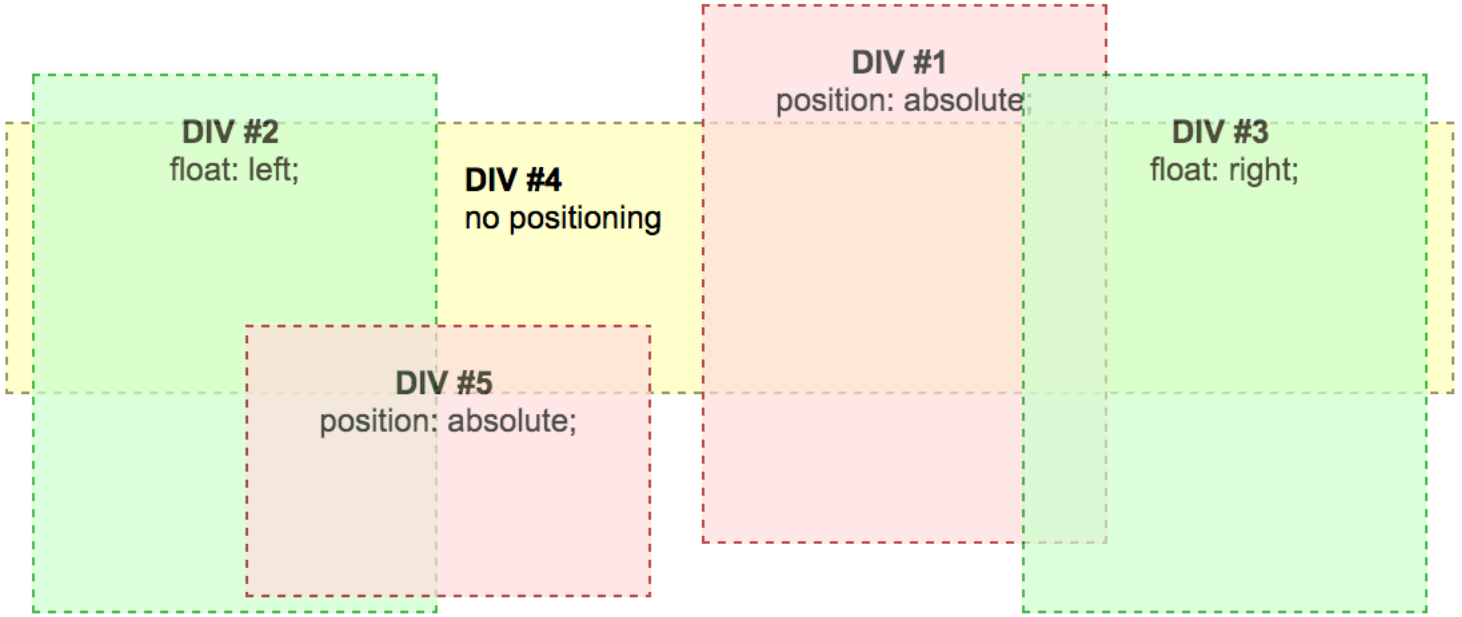
```
<div id="1">...</div>
<div id="2">...</div>
<div id="3">...</div>
<div id="4">...</div>
<div id="5">...</div>
```



- Which one shows on top?

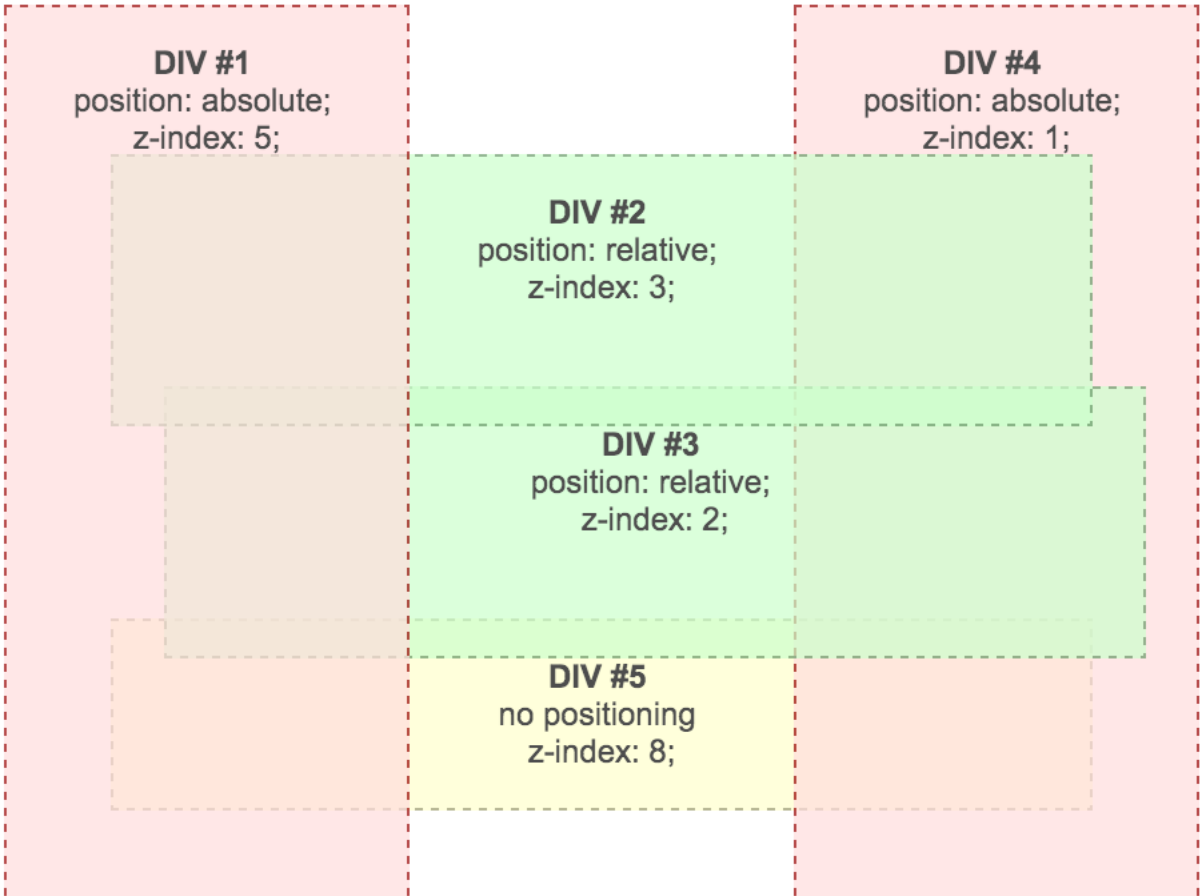
Stacking Order (Bottom to Top)

1. Background and borders of `<html>`
2. Descendant blocks in normal flow (in HTML order)
3. Floating blocks
4. Descendant positioned elements (in HTML order)



Z-Index

- Default: 0
- Stacking order applies to each layer
- Elements need to be positioned to take effect

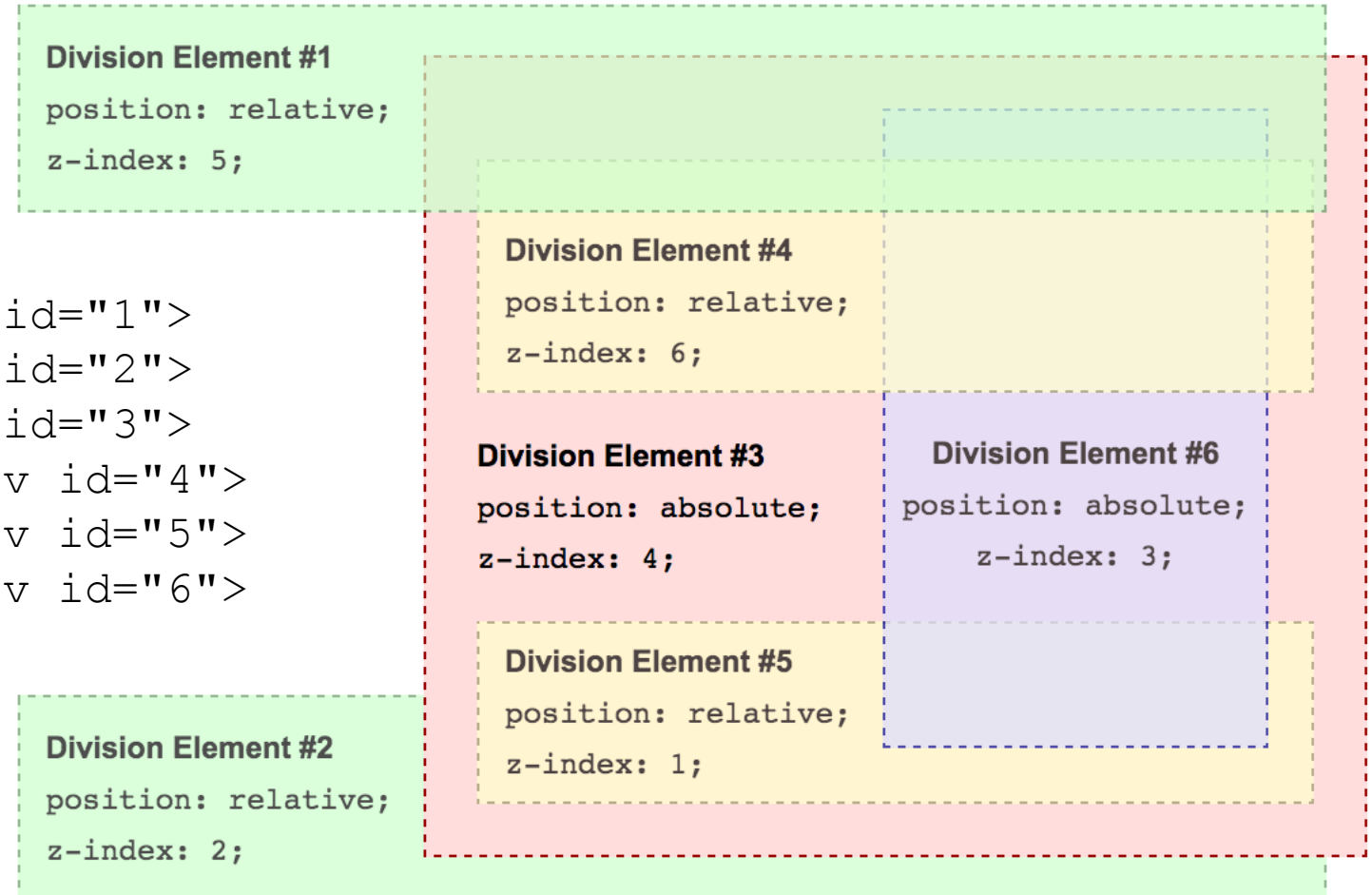


How about the order of descendants?

Stacking Context

- `<html>`, positioned, and non-full opacity elements creates ***stacking contexts***
- Z-index is ***local*** to a stacking context

```
<div id="1">
<div id="2">
<div id="3">
  <div id="4">
  <div id="5">
  <div id="6">
```



Assigned Readings

- CSS tutorial

Exercise


My Blog
file:///Volumes/SD/ss/lab-css-blog/index.html
Welcome To My Blog !
JANUARY 23 2017
This Is My First Article
Bacon ipsum dolor amet capicola strip steak landjaeger, biltong spare ribs rump cow ground round andouille sirloin pork. Short ribs pig prosciutto swine. Flank turducken turkey rump, leberkas shoulder bresaola ham hock tail drumstick corned beef. Venison pork chop beef jowl short ribs.
Bresaola short ribs pastrami, beef ribs spare ribs kielbasa ham tongue kevin landjaeger chicken ball tip. Pork chop beef kevin strip steak, chicken pork belly pastrami ham hock flank shoulder chuck turkey ribeye andouille ball tip. Leberkas ham ham hock pork loin. Filet mignon bacon pancetta leberkas turducken fatback tongue frankfurter jowl. Shoulder tenderloin chicken shank bacon shankle sirloin.