CSCI 202

HTML & CSS

What is HTML?

- **Hyper Text Markup Language.**
- **NOT** a programming language
- Markup Language for creating web pages/ document
- Building blocks of the Web

<u>What you'll need</u>

A Web Browser

- **Google Chrome ***
- Mozilla Firefox

- A Text Editor

Creating an HTML file

- Does **NOT** need a server
- Files must end with the **.html** extension
- Runs in a web browser (Chrome, FireFox, etc)
- **index.html** is the root / home page of a website

http://www.something.com

Loads the index.html file

http://www.something.com/about.html

Loads the about.html file

HTML Page Structure

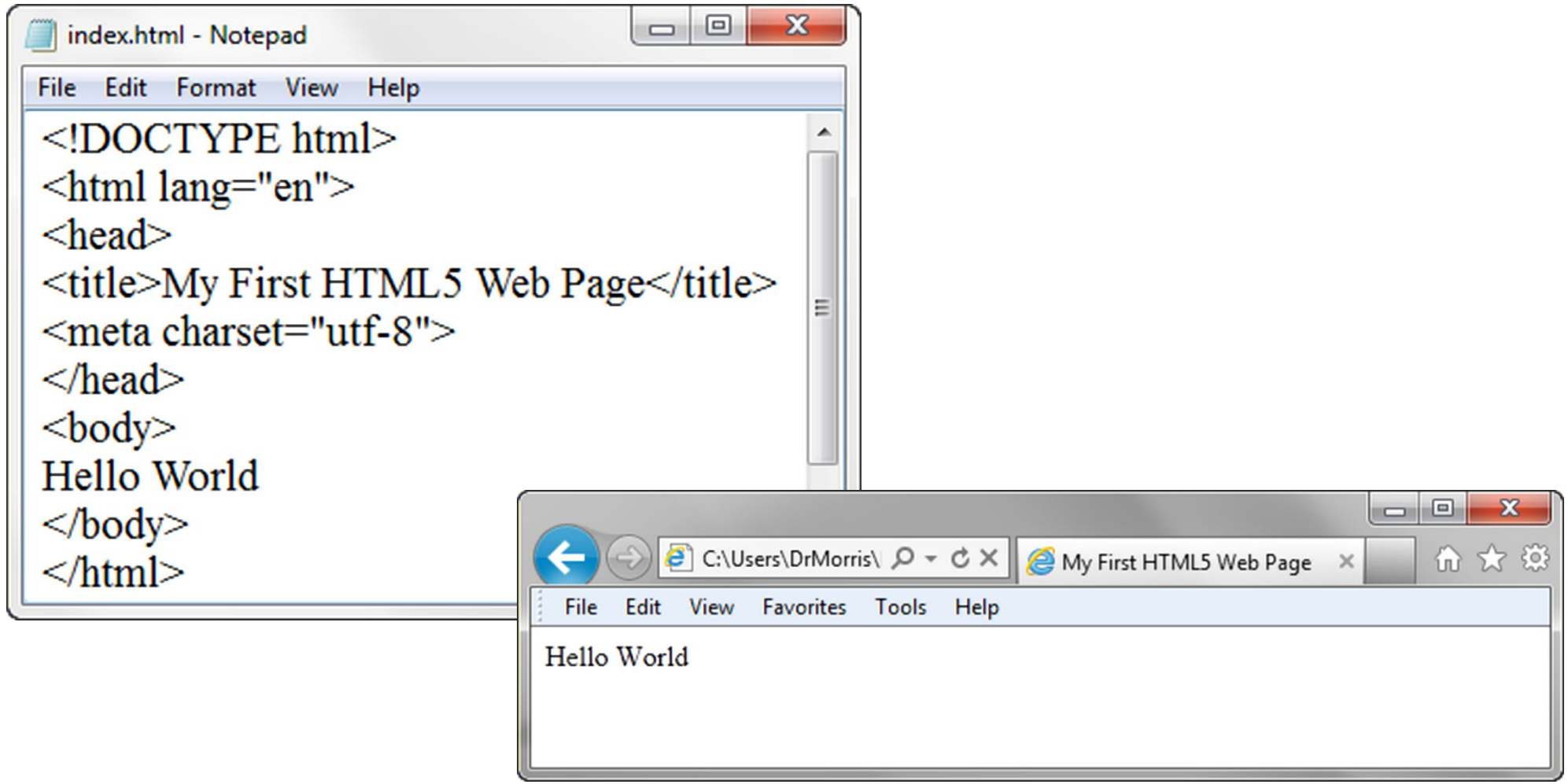
```
<html>

  <head>

    <title>Page title</title>

  </head>

  <body>

    <h1>This is a heading</h1>

    <p>This is a paragraph.</p>

    <p>This is another paragraph.</p>

  </body>

</html>
```

Page (HTML5) Template

```
<!DOCTYPE  html>
<html lang="en">
<head>
    <title>Page Title Goes Here</title>
    <meta charset="utf-8">
</head>
<body>
    … body text and more HTML tags go here
    …
</body>
</html>
```

Head & Body Sections

- **Head Section**
  Contains information that describes the web page document
  <head>
  …head section info goes here
  </head>
- **Body Section**
  Contains text and elements that display in the web page document
  <body>
  …body section info goes here
  </body>


index.html - Notepad
File Edit Format View Help
<!DOCTYPE html>
<html lang="en">
<head>
<title>My First HTML5 Web Page</title>
<meta charset="utf-8">
</head>
<body>
Hello World
</body>
</html>
C:\Users\DrMorris\
My First HTML5 Web Page
File Edit View Favorites Tools Help
Hello World

HTML Tags

- HTML tags are keywords surrounded by angle brackets

<html> , <body> , <h1>

- HTML tags normally come in pairs, with opening and ending tags

<tagname>content</tagname>

<h1>Hello World</h1>

What goes in the body?

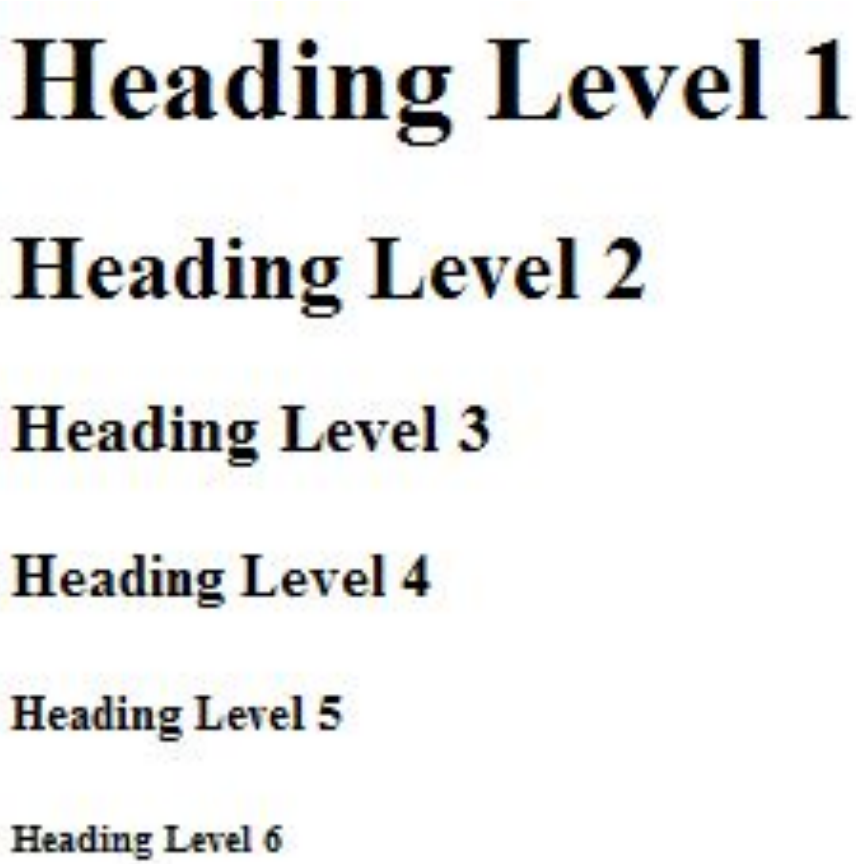
Headings

- Heading elements are organized into six levels.
- Headings are defined with the <h1> to <h6> tags.
- <h1> defines the most important heading.
- <h6> defines the least important heading.

```
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
. . .
<h6>This is heading 6</h6>
```

Headings

```
<h1>Heading Level 1</h1>
<h2>Heading Level 2</h2>
<h3>Heading Level 3</h3>
<h4>Heading Level 4</h4>
<h5>Heading Level 5</h5>
<h6>Heading Level 6</h6>
```



Comments

- Comments can be added to your HTML source by using the following syntax:

```
<!-- Write your comments here -->
```

- Comments are not displayed by the browser.

Paragraphs Element

- The HTML <p> element defines a paragraph:
- Groups sentences and sections of text together.

```
<p>Paragraph 1</p>

<p>Paragraph 2</p>

<p>Paragraph 3</p>
```

Line Breaks

- The
 tag inserts a single line break.
- The
 tag is an empty tag which means that it has no end tag.

```
<p>Principles and technologies <br>
required to produce and <br>
distribute Web content<br>
</p>
```

The Horizontal Rule

- The <hr> tag inserts a horizontal line on the page.

```
<hr>
```

The Blockquote Element

- Blockquote element Indents a block of text for special emphasis
- Semantically appropriate for long quotations

```
<blockquote>

   …text goes here…

</blockquote>
```

HTML Block and Inline Elements

- One of the most important attributes of an element is its display. The two most common are block and inline
- **block (can take width and height)**
  - Newline is inserted before and after, e.g. it “Takes up” whole width (e.g. <p> , <h1> … <h6>, <form>, etc.)
- **inline (can not take width and height)**
  - Only uses as much space as needed to contain the element. (e.g. <a> , <img>, etc.)

Phrase Elements

- HTML also defines special elements for defining text with a special meaning.

```
<b>Bold</b>

<i>Italic</i>

<big>Big text</big>

<small>Small text</small>

<strong>Important text</strong>

<em>Emphasized text</em>
```

HTML Lists

- An Unordered List
- An Ordered List
- Description List

```
<ul>
    <li>Item 1</li>
     <li>Item 2</li>
     ...
</ul>
```

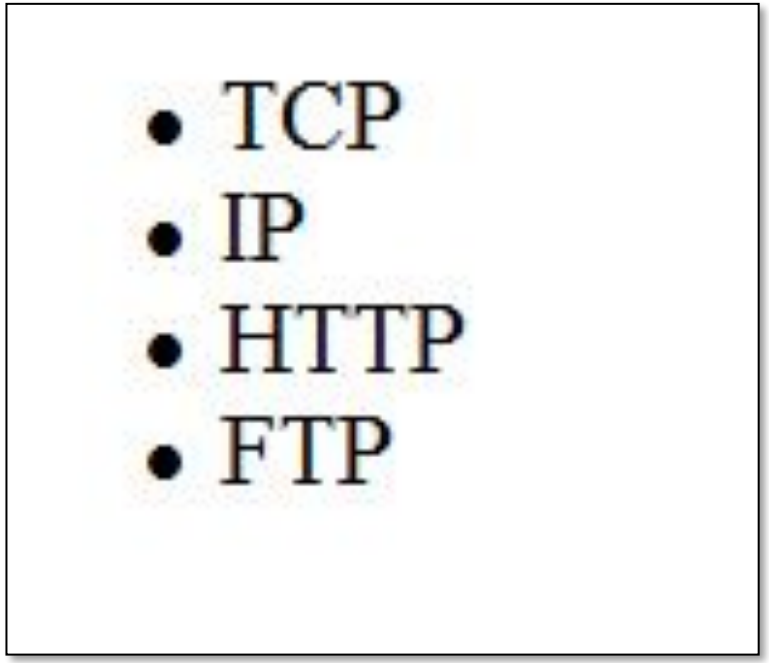
HTML Lists

- An Unordered List
- An Ordered List
- Description List
  - *Formerly called a definition list*

Unordered Lists

- Displays a bullet, or list marker, before each entry in the list.
- An unordered list starts with the <ul> tag.

```
<ul>
    <li>TCP</li>
     <li>IP</li>
     <li>HTTP</li>
      <li>FTP</li>
</ul>
```



Ordered Lists

- An ordered list starts with the <ol> tag.
- List items are marked with numbers.

```
<ol>
  <li>Apply to school</li>
  <li>Register for course</li>
  <li>Pay tuition</li>
  <li>Attend course</li>
 </ol>
```

1. Apply to school
2. Register for course
3. Pay tuition
4. Attend course

Definition Lists

- A definition list is a list of terms, with a description of each item and is defined using <dl> tag.
- <dt> defines an item in the list and <dd> describes the item.

```
<dl>
   <dt>IP</dt>
       <dd>Internet Protocol</dd>
    <dt>TCP</dt>
        <dd>Transmission Control Protocol</dd>
</dl>
```

Description List Example

```
<dl>
   <dt>IP</dt>
       <dd>Internet Protocol</dd>
    <dt>TCP</dt>
        <dd>Transmission Control Protocol</dd>
</dl>
```

IP
: Internet Protocol

TCP
: Transmission Control Protocol

What is CSS3 ?

- CSS3 - Cascading Style Sheets language.
- Some important CSS3 modules are:
  - Selectors
  - Box Model
  - Backgrounds and Borders
  - Image Values and Replaced Content
  - Text Effects
  - 2D/3D Transformations
  - Animations
  - Multiple Column Layout
  - User Interface

CSS3 Selectors

- selectors reference a .classname, #id, or element.

```
 .circle{width:150px;
        height: 150;
        border-radius: 50%;}

#circle1{width:150px;
        height: 150;
        border-radius: 50%;}

    div{width:150px;
        height: 150;
        border-radius: 50%;}
```

CSS3 Position

The position property specifies the type of positioning method used for an element.

There are five different position values:

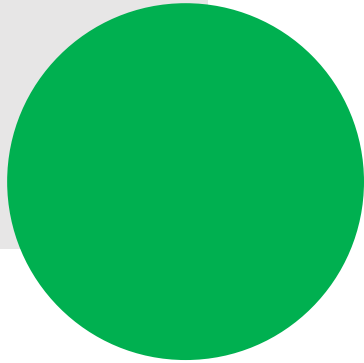
- **static** - default position, order of elements on the page
- **relative** - to its default position
- **fixed** - stays in same spot as page scrolls
- **absolute** - relative to the nearest positioned ancestor or html body
- **sticky** - toggles between **relative** and **fixed**, depending on the scroll position

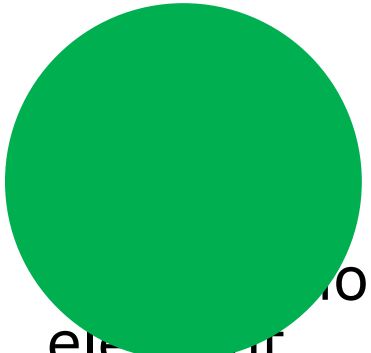
CSS3 Position

The position property specifies the type of positioning method used for an element.

There are five different position values:

```
#circle1{
        position: fixed;
        bottom: 10px;
        right: 0;
        width:150px;
        height: 150;
        border-radius: 50%;
        background-color: green;
        }
```





CSS3 Position

ion property specifies the type of positioning method used for an element.

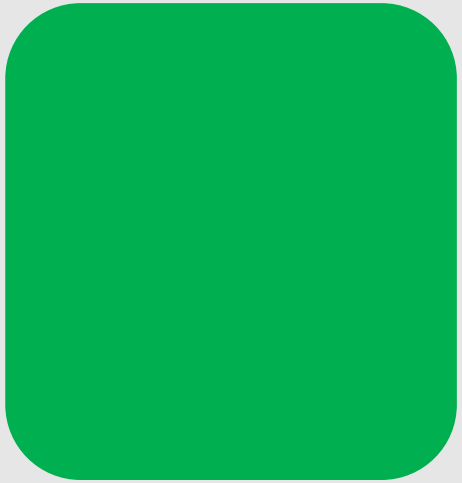
There are five different position values:

```
#circle1{
        position: absolute;
        top: 10px;
        left: 50px;
        width:150px;
        height: 150;
        border-radius: 50%;
        background-color: green;
        }
```

CSS3 Rounded Corners

- With the CSS3 border-radius property, you can give any element "rounded corners".

```
div{   width: 200px;
       height: 300;
       border-radius:25px;
       background-color: green;
}
```



CSS3 Backgrounds

- CSS background-image property configures a background image.

```
div{ background-image: url(image.jpg);

   }
```

CSS3 Backgrounds

- CSS background-repeat property configures the behavior of an image.

```
div{ background-image: url(image.jpg);
    background-repeat: no-repeat;

    }
```

CSS3 Background Size

- The CSS3 background-size property allows you to specify the size of background images.

```
div{ background-image: url(image.jpg);
    background-repeat: no-repeat;
    Background-size: 100px 80px;

    }
```

CSS3 Colors

- **CSS3 also introduces:**
  - RGBA colors
  - HSL colors
  - HSLA colors
  - opacity.

```
div{background-color: rgba(255,0,0,0.3);}
```

```
div{background-color: hsl(120,100%,50%);}
```

```
div{background-color: hsla(120,100%,0.3);}
```

CSS3 Colors

- **CSS3 also introduces:**
  - RGBA colors
  - HSL colors
  - HSLA colors
  - opacity.

```
div{background-color: rgb(255,0,0)
  opcity:0.3);
}
```

CSS3 Gradients

- **CSS3 gradients** let you display smooth transitions between two or more specified colors.

```
div{height:300px;
  background: red;
  background: linear-gradient(left, blue,
white);
}
```

CSS3 Transitions

- **CSS3 transitions** allows you to change property values smoothly (from one value to another), over a given duration.

```
div{height:100px;
  Width: 100px
  background: red;
  transition: width 2s, height 3s;
}
div: hover{width:300px; height:300px;}
```

Specify the Speed Curve of the Transition

- The transition-timing-function property specifies the speed curve of the transition effect.

```
#div1 {transition-timing-function: linear;}
#div2 {transition-timing-function: ease;}
#div3 {transition-timing-function: ease-in;}
#div4 {transition-timing-function: ease-out;}
#div5 {transition-timing-function: ease-in-out;}
```

CSS3 Images

- **Rounded Images**
  - Use the border-radius property to create rounded images:

```
img{border-radius: 50%;}


<img src="paris.jpg" width="300"
height="300">
```

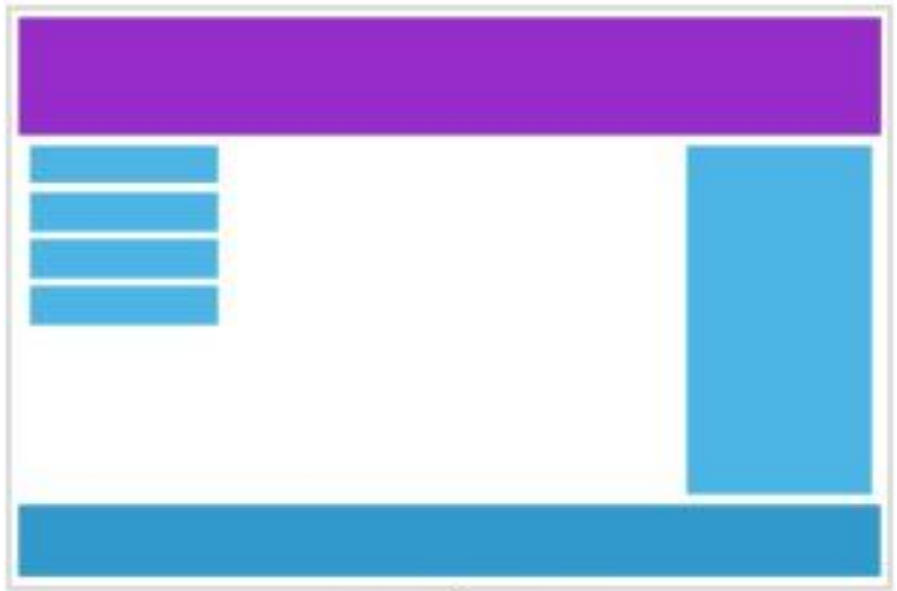
CSS3 Images Text

- We can use CSS3 to position text in an image

```
div{position: relative;}

 text{position: absolute;
      top: 50%;
      left: 50%;
      transform: translate(-50%, -50%);
      font-size: 18px;}
```

CSS3 Media Queries

- **What is a Media Query?**
- Media query is a CSS technique introduced in CSS3.
- It uses the **@media** rule to include a block of CSS properties only if a certain condition is true.



CSS3 Media Queries

- **Media queries** in CSS3 helps with the capability of devices.
- **Responsive web design** refers to progressively enhancing a web page for different viewing contexts.
  - Smartphone: 320px, Tablet: 768px, Netbook: 1024px, Desktop: 1600px

```
@media only screen and (min-width: 480px) {
    body {
        background-color: lightgreen;
    }
}
```

Design with CSS3

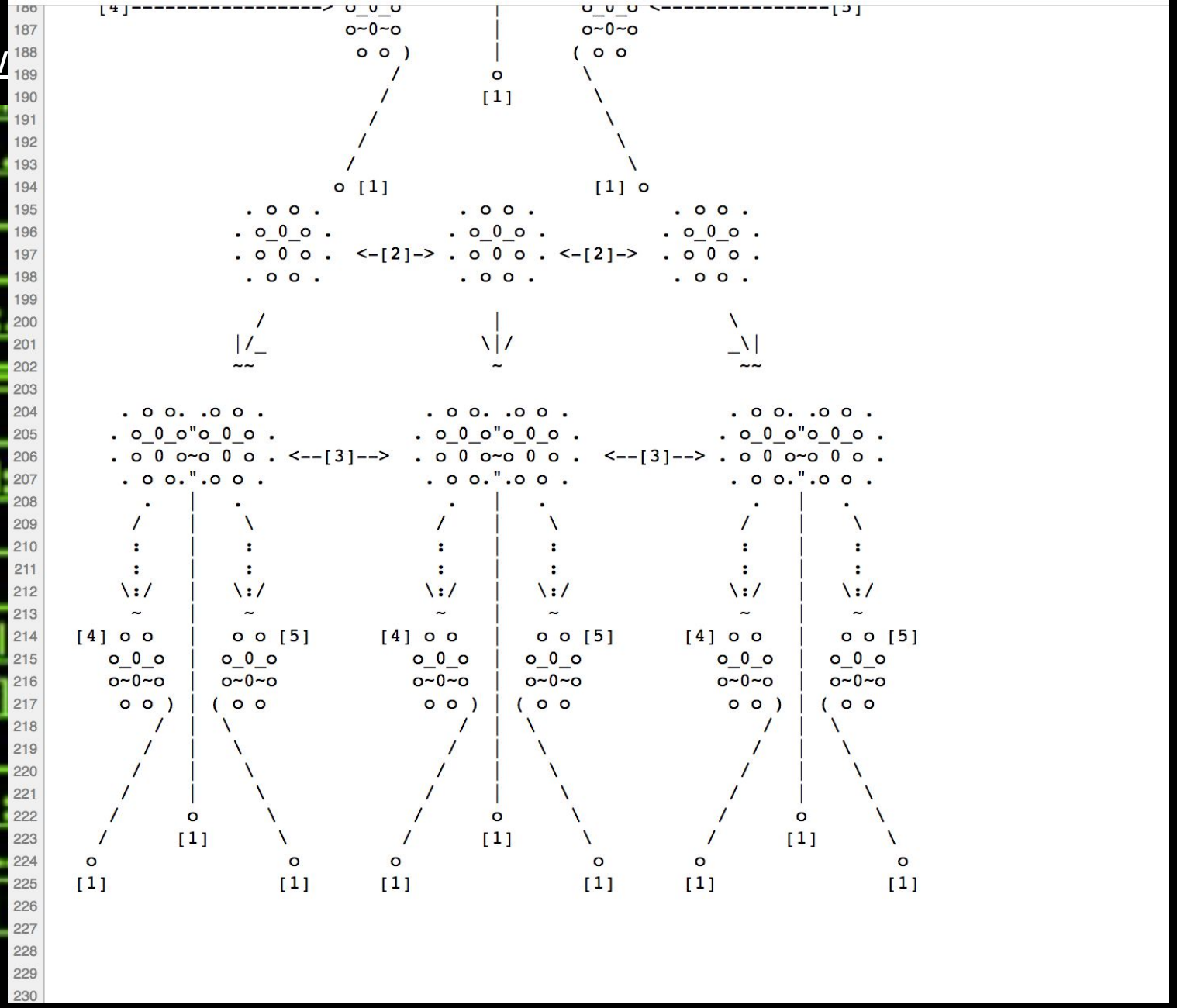
https://github.com/cyanharlow/purecss-zigario

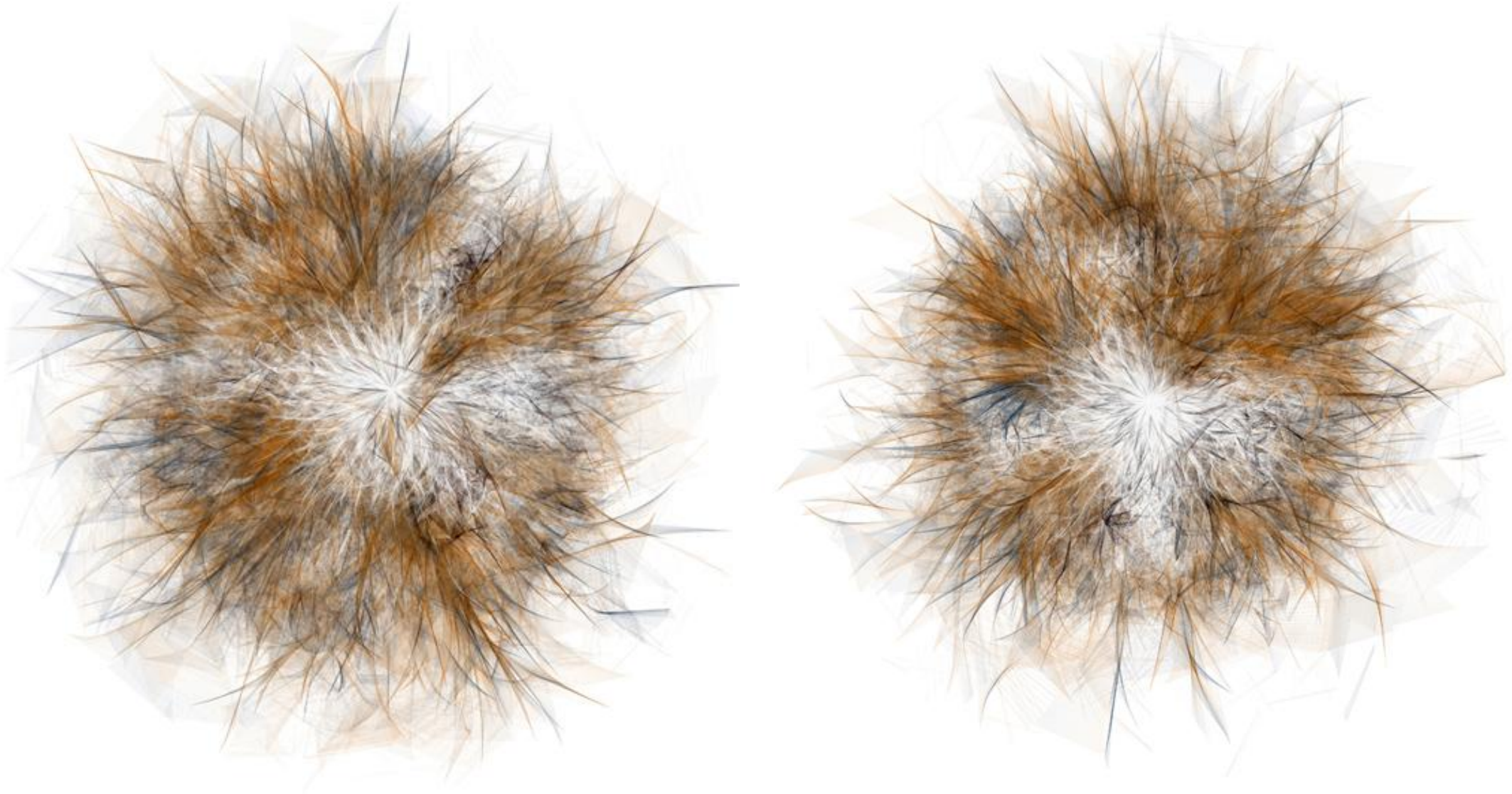
HAROLD COHEN & AARON

http://wwwwwwwww.jodi.org/

http://ww

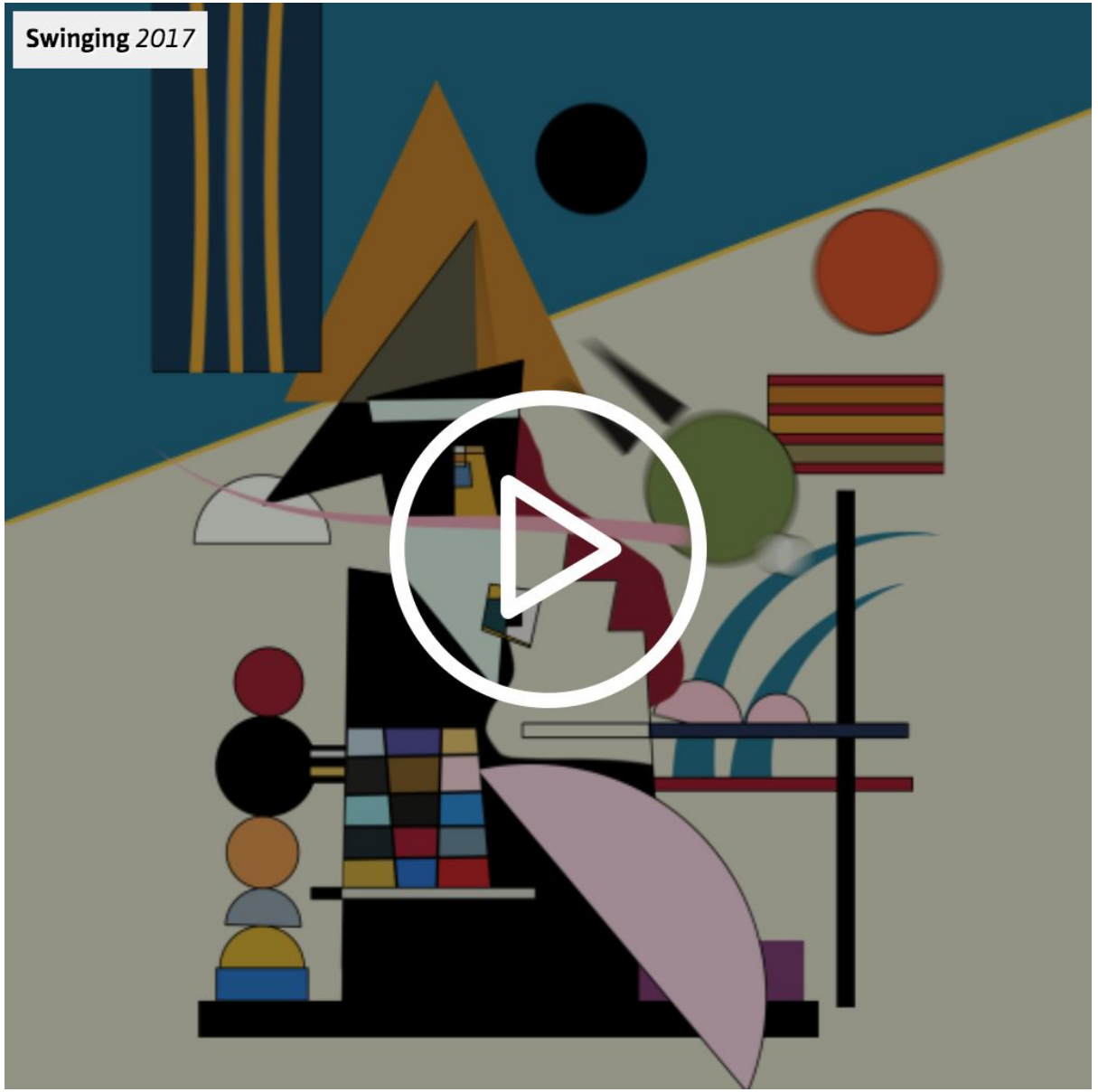
Not Secure | view-source:wwwwwwwww.jodi.org





Casey Reas: http://reas.com/p6_images3_p/

Wassily Kandinsky Swinging 1925



Jono Brandel's reproduction of Swinging

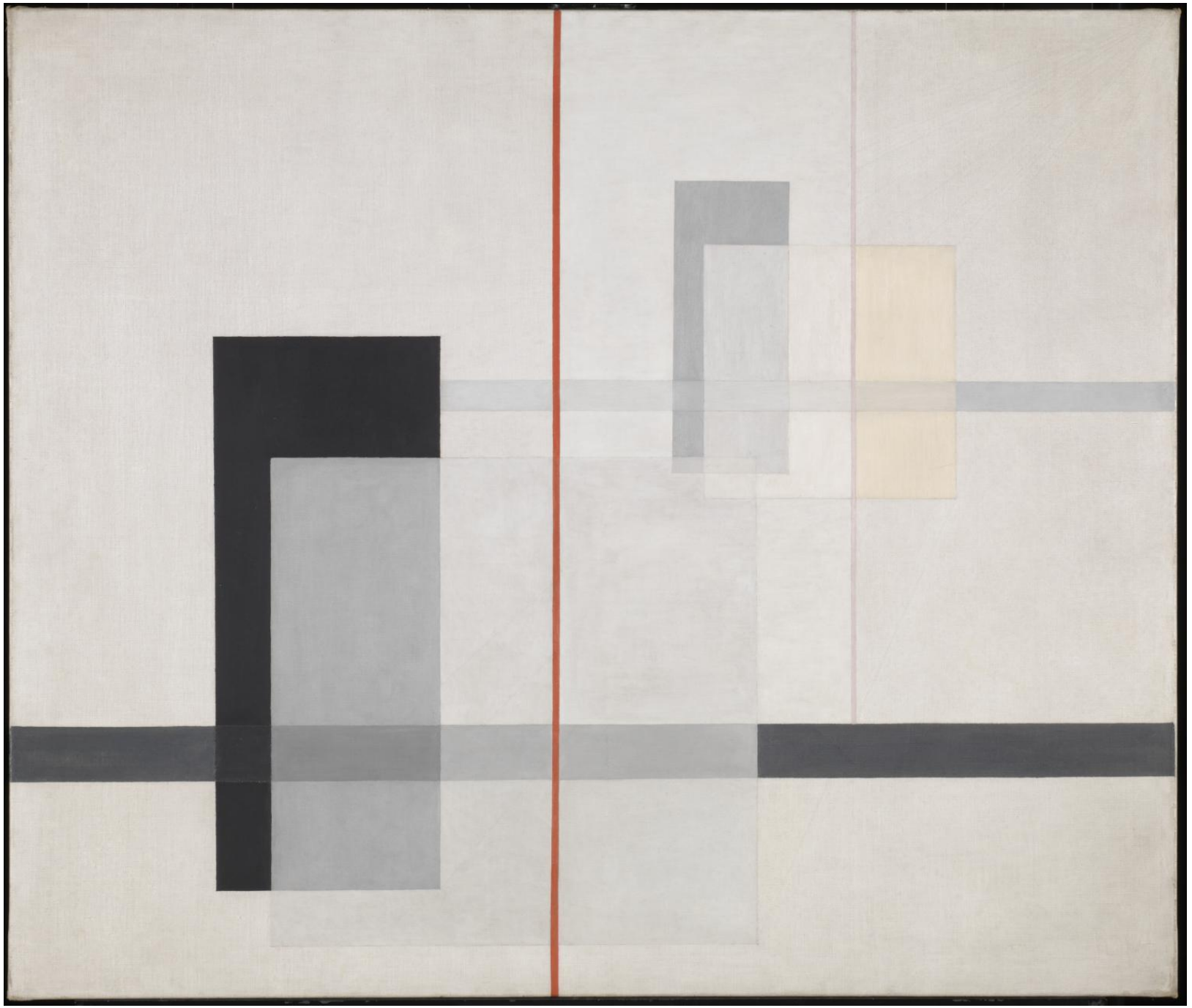
Today’s Exercise

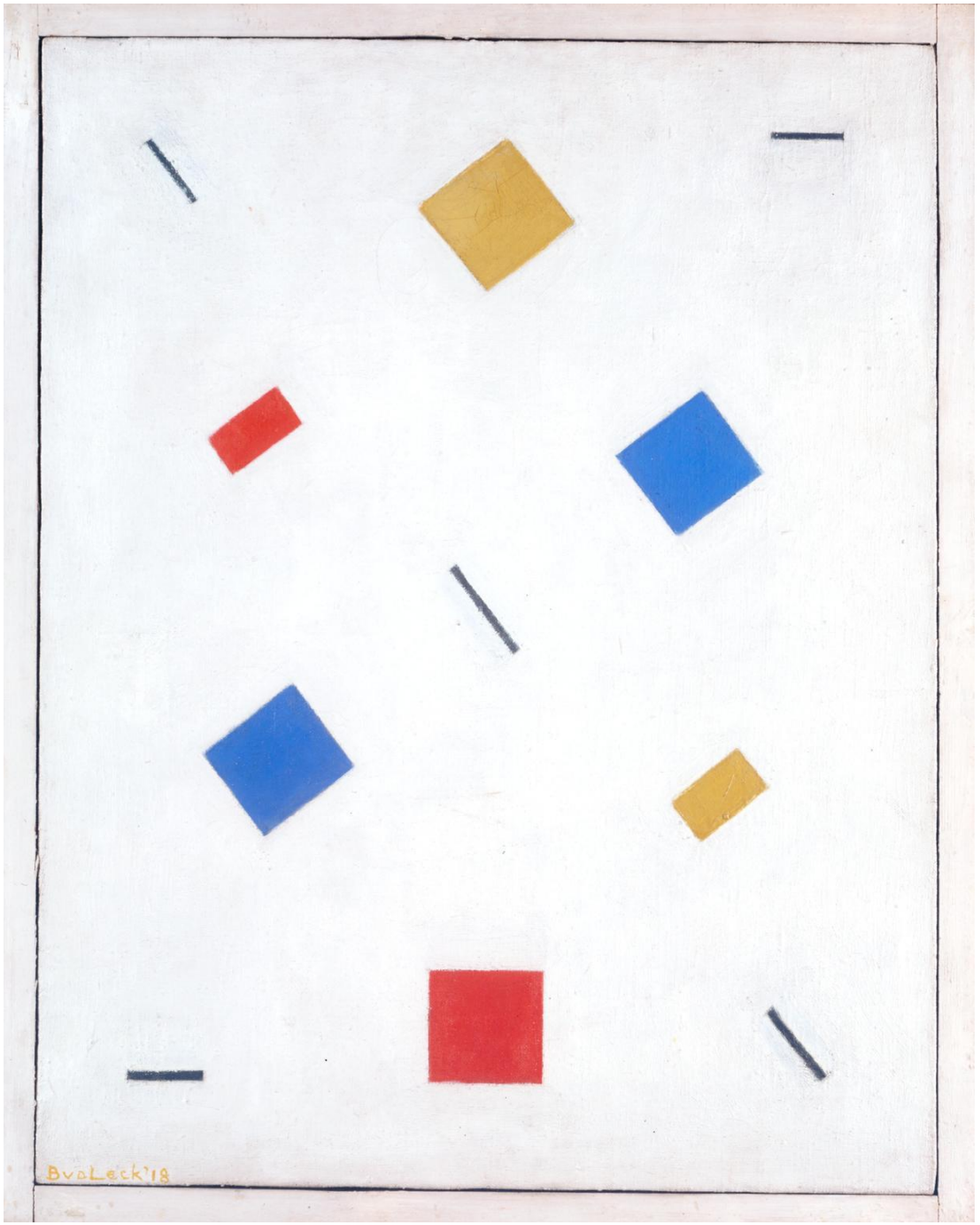
Reproduce a painting in the web browser.

Select one of the paintings from the list below. Using HTML and CSS reproduce the visual design. Do not use any embedded images. All visuals should be written using some combination of html, css, and javascript. Most of this assignment can be done using CSS, but for students that feel ready, they can use javascript libraries designed for creating dynamic visuals (such a p5.js or two.js).

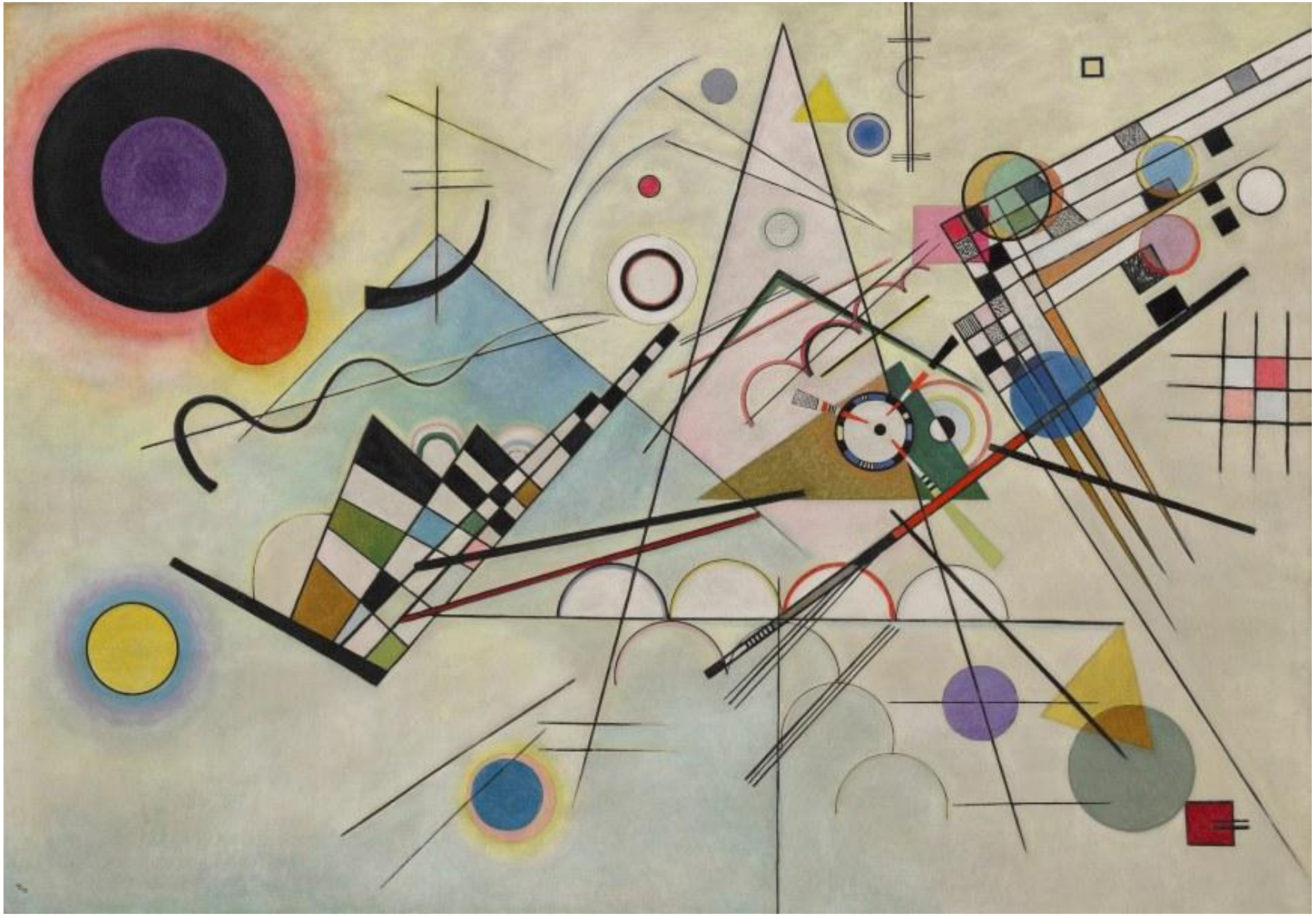
László Moholy-Nagy

K VII 1922





Bart van der Leck Composition
1918



Wassily Kandinsky
Composition III, 1923

Charles Demuth,
Figure 5 in Gold, 1928