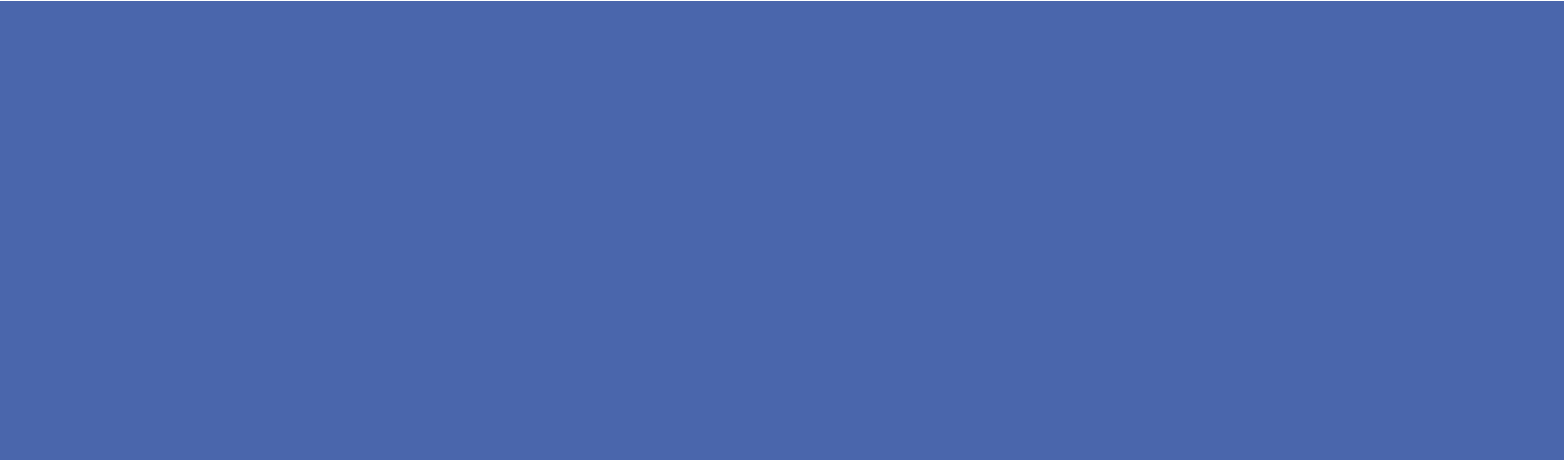




# FULL STACK, HTML

WEEK 5 – 09/23/2019



## THINGS TO DO



Submit Project Milestone 1 by Sept 27, 11:59 p.m. on the Github repository for Project Milestones for your project team

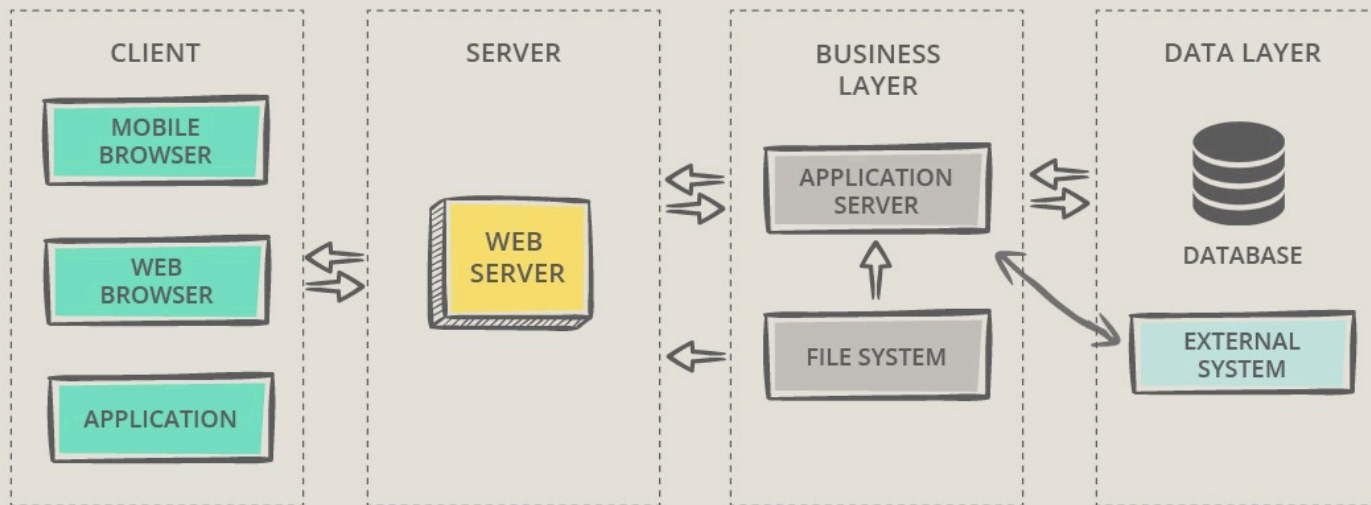


Homework 1 will be posted on Sept 27. Due on October 11, 11:59 p.m. on Canvas

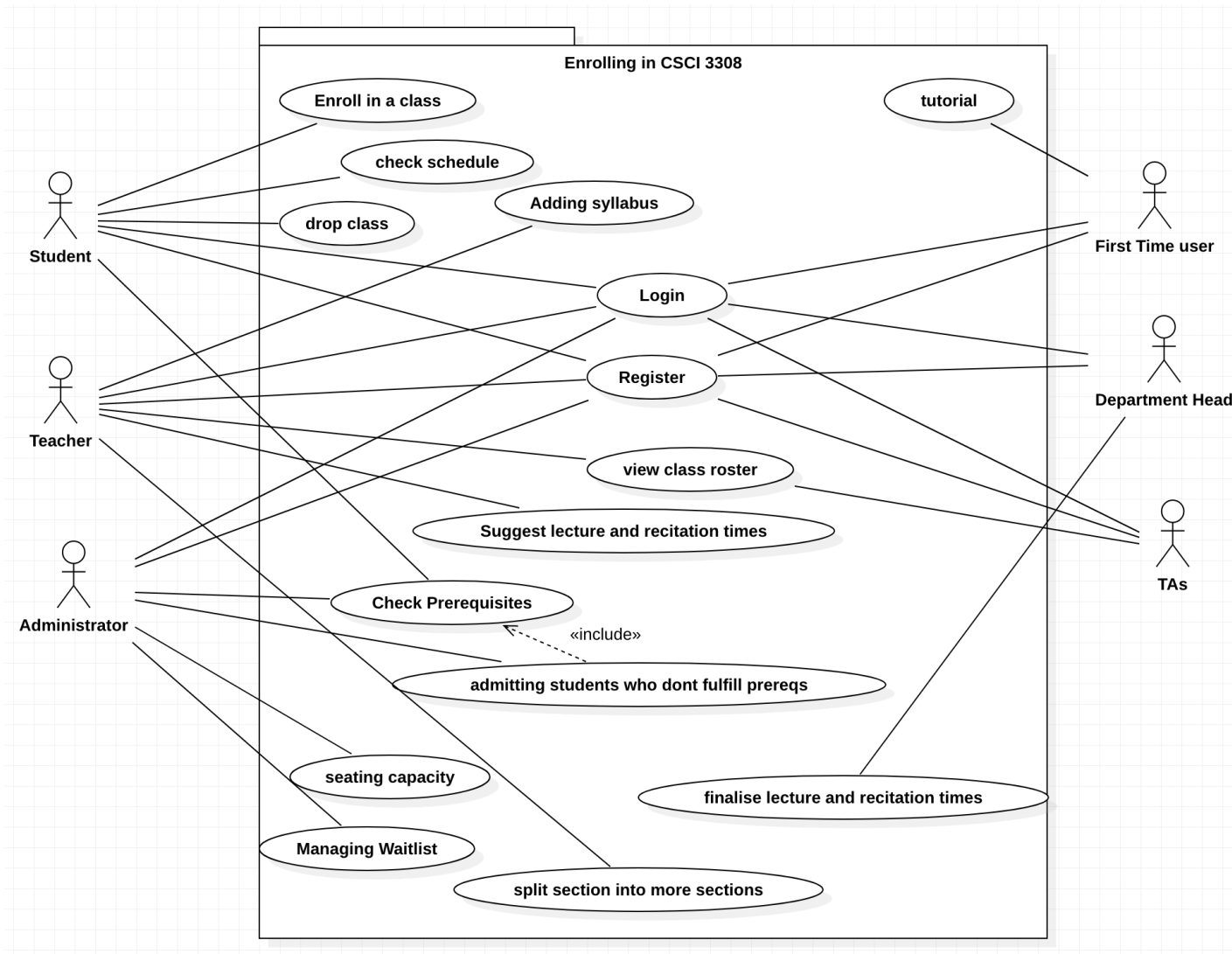
# APPLICATION STACK

- Front-End
  - The presentation layer
  - What the user sees and interacts with
  - What software tools do I use to build it and present it to the users
- Back-End
  - The underlying database and code to interact with it
  - Authentication, User Management
- Integration Layer
  - Connects the Front-End to the Back-End
- Full Stack Developer
  - “A Full-Stack Web Developer is someone who is able to work on all portions of an application – front-end, backend, integration.”

# NODE.JS WEB APPLICATION ARCHITECTURE



EXISTEK



# HTML

- HyperText Markup Language
- The foundation of all web pages
- Marking up text with tags
- Tags look like
  - **<tag>content</tag>**

# HTML

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
    <!-- head elements go here -->
```

```
  </head>
```

```
  <body>
```

```
    <!-- body elements go here -->
```

```
  </body>
```

```
</html>
```

# ELEMENTS

- Paragraph
  - `<p>` text goes here `</p>`
- Headings
  - `<h1>` big heading `</h1>`
  - `<h2>` smaller heading `</h2>`
  - `<h3>` even smaller heading `</h3>`
- Divisions
  - `<div>` contains multiple paragraphs `</div>`
- Lists
  - `<ol>` an ordered list `</ol>` A,B,C or 1,2,3
  - `<ul>` an unordered list `</ul>` bullets



### Horizontal Lines

- `<hr size="10" width="10px" float="[left,right,center]" >`

### Line Break

- `<br> </br>`

### Blanks

- `&nbsp;`

### Comments

- `<!-- xxxx -->`

MORE ELEMENTS

GO PLAY

- <https://www.w3schools.com/html/default.asp>
- [https://www.tutorialspoint.com/online\\_html\\_editor.php](https://www.tutorialspoint.com/online_html_editor.php)

## SOME BASIC GUIDELINES



HTML commands are NOT case sensitive.

Tip: always enter tags in lower case.



Anything in quotes *might be* case sensitive

Such as attribute values:

```

```



Spaces: Many spaces = one space.



Always use end tags.



Nesting elements: From `<tag>` to `</endtag>`



Good habit: Quote all attribute values.

# TERMINOLOGY

**Cache:** Browser caches pages. Beware when reloading. SHIFT + Reload or CTRL + Reload will force.

**"Deprecated"** = no longer supported by the standard.

It's either a **TAG** or it's **TEXT**

There are 4 basic **attributes** for every tag

- **id="xxxx"** – identifies it
- **class="classname"** – ties it into a group for style
- **style="xxxxx"** – where xxx is a list of style elements
- **title="xxxxx"** – adds misc info to the tag

# LINKING

- **Hyperlink**

- Takes the web user to another document
- Can be on the same site, or ANYWHERE
- Implemented via **<a>** tag ("a" is for "anchor")
- Uses the **href="xxxxx"** attribute
- Browser identifies Link via underscore and color
  - Avoid **<u>** tag
- Cursor changes shape on "mouseover"
- Status Bar shows URL of the link on "mouseover"

# LINKING

- **Managing Hyperlink Colors**
  - `<body link="xxxx", alink="xxxx", vlink="xxxx">`
  - xxxx = valid color name
- **Absolute versus Relative URL**
  - Protocol://host.domain.tld/fullpath/file.htm - absolute
  - file.htm - relative
  - Relative location set by current page OR `<base>` tag in `<head>` section
  - `<base href=http://host.domain.tld/path>`
  - No file name - uses "index.htm" or "default.htm"
- **URL**
  - Directory path – filename plus extension
- **Linking to a "marker"**
  - Defined by `id="xxxx"` attribute

# LINKING

```
<!DOCTYPE html>
```

```
<html>
```

```
  <head>
```

```
  </head>
```

```
  <body>
```

```
    <p>In this example, the anchor tag creates a link to another  
    document.</p>
```

```
    <br><br>
```

```
    <p>
```

```
      <a href="http://www.colorado.edu"> CUBOULDER</a>
```

```
    </p>
```

```
  </body>
```

```
</html>
```

# IMAGES

- **Two basic types**
  - **.gif** – Graphics Interchange Format
    - For illustrations
    - Good with large areas of contiguous color
    - Compresses nicely. "lossless"
    - Limited to 256 colors
    - Allows transparency
    - Supports animation
  - **.jpg** – Joint Photographic Experts Group
    - For photos
    - Good with large numbers of various colors
    - "lossy" compression.
    - Millions of colors
    - No transparency
    - No animation





## <img> tag attributes

**Alt="xxxxx"** - text to display when image is not available  
**Hspace="xx", Vspace="xx"** - puts a buffer of space around the image  
**Height="xx", Width="xx"** - resizes the image

- Reserves the space to speed in page loading



## <img> as "link" (I.e. a "button")



```
<a href="week3_ex4.htm">  
      
</a>
```

# IMAGES

## OTHER FORMATTING TAGS

- **<body>** attributes
  - Bgcolor="xxxx"
  - Text="xxxx"
  - Link, alink, vlink
  - Background="image.gif"
  - Topmargin="xx", leftmargin="xx"

# TABLES

- Used Primarily for LAYOUT options
- Rows and Columns, "cells"
- The browser will SIZE the table large enough to hold the cells' contents
- Every row gets the same number of "cell positions", whether or not you define or use them
- **Table Tags:**
  - `<table>` defines the table
  - `<tr>` defines a table row
  - `<th>` defines the table's header cell content
  - `<td>` defines the table's data cell content
  - `<caption>` puts some text above, outside the table

# TABLES

- **<table> attributes**
  - bgcolor – just like <body>
  - border="xx" size in pixels. Default = no border
  - cellspacing="xx" size of cell space in pixels (space between cells)
  - cellpadding=size of cell pad in pixels (space around contents within cell)
  - width="nn" (pixels or percent) Size of table

# TABLES

- **<tr> defines a table ROW**
- **<tr> attributes**
  - bgcolor – just like <body>
- **<td> or <th> defines a table cell**
- **<td> <th> attributes**
  - bgcolor – just like <body>
  - Colspan="nn" – number of columns cell spans
  - Rowspan="nn" – number of rows cell spans

# HTML FORMS

- How are they used?
  - Use the browser's window as a data entry screen
  - Collect information from the user
  - Pass it to the web server via http
  - Invoke a server-side script
  - Passes form data as input to the script

# HTML FORMS

- Tag has several attributes – two are required
- ACTION
  - `<form action="http://URL">` name of a program on the web server
    - URL specifies the location of the executable file on the web server
  - `<form action="mailto:mailrecipient">` sends an email
- METHOD
  - `<form method="GET">` or `<form method = "POST">`
    - POST when you have large amount of data being sent, encryption available, a two-step process
    - GET for small amounts, no security – all in one step
      - `<form enctype="[multipart/form-data]">` or `<form enctype="[text/plain]">`

# HTML FORMS

- The `<input>` tag –
  - Specifies an input field on a form
- type attribute – tells us what kind of control
  - Text
  - Radio
  - Checkbox
  - submit button
  - reset button



# HTML FORMS

- `<form>` examples
- Text Box
  - `<input type="text" name="Name" size="20" maxlength="30">`
- Radio Button(s)
  - `<input type="radio" name="Gender" value="M"/>`  
Male
  - `<input type="radio" name="Gender" value="F"/>`  
Female

## HTML FORMS

- `<input type="checkbox" name="size" value="S"/>` Small
- `<input type="checkbox" name="size" value="M"/>` Medium
- `<input type="checkbox" name="size" value="L"/>` Large
- `<input type="checkbox" name="size" value="XL"/>` X-Large

# HTML FORMS

- List boxes

```
<select name="grade" size="3">
```

```
<option>A
```

```
<option>B
```

```
<option>C
```

```
<option>D
```

```
<option>E
```

```
</select>
```

# HTML FORMS

- List Box via `<select>` tag
  - Size attribute
    - When absent: you get a "drop down list", first item selected by default
    - When present: indicates the number of items in the list
  - Selected attribute: specifies selected item
  - Multiple attribute: when "yes", can click `> |`

# HTML FORMS

- `<input type = “submit” />`
- `<input type = “reset” />`
- `<textarea name = “comments” cols = “40” rows = “8”>`

# WIREFRAMES

- Your Website Begins with a Story
- <https://www.youtube.com/watch?v=7LKPVAIcDXY>

(Jump to 2:45)

- <https://www.youtube.com/watch?v=Z5-a9uQkzac>

# WIREFRAMES

How a team designs a web site

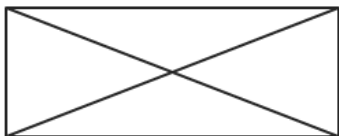
- The wireframes tell the story

Contains important layout and content, not style

No color; no graphics, no images

Includes

- Information design (describes what's being presented)
- Navigation design (describes links and nav menus)
- Interface design (drop down menus, buttons, form fields)



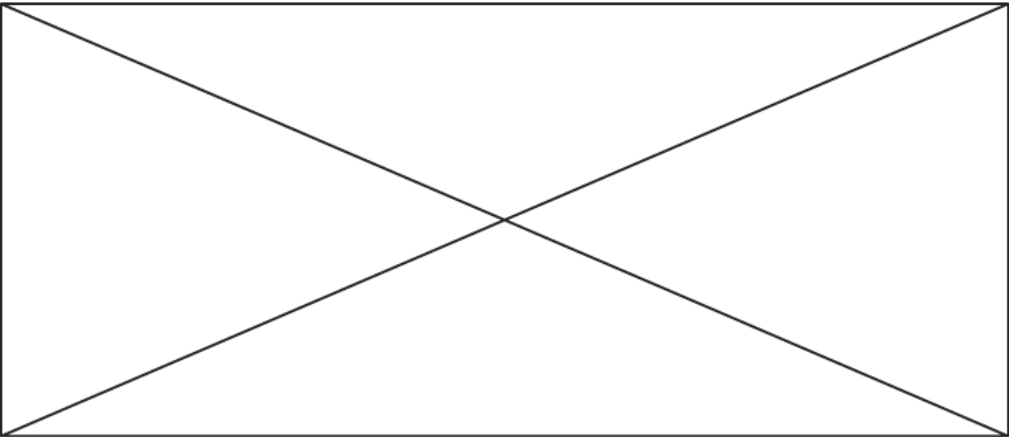
[View Cart](#) [Order History](#)

Products, Parts, Keywords Search

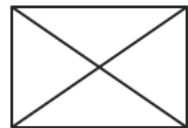
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Rainfall Sensors
Wind Anemometer
Weather Stations
Controllers
Indicators/Displays
Temp/Humidity Sensors
Barometric Pressure
Solar Radiation
Replacement Parts



Featured Products

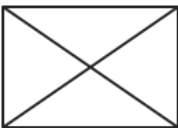


Product Title

SKU

Lorem ipsum dolor sit amet,  
consectetur adipiscing elit.

[More Info »](#)



Product Title

SKU

Lorem ipsum dolor sit amet,  
consectetur adipiscing elit.

[More Info »](#)



Product Title

SKU

Lorem ipsum dolor sit amet,  
consectetur adipiscing elit.

[More Info »](#)

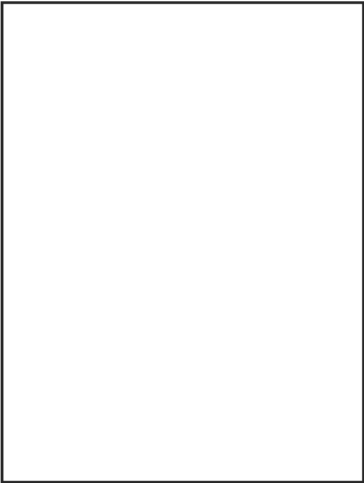


Product Title

SKU

Lorem ipsum dolor sit amet,  
consectetur adipiscing elit.

[More Info »](#)





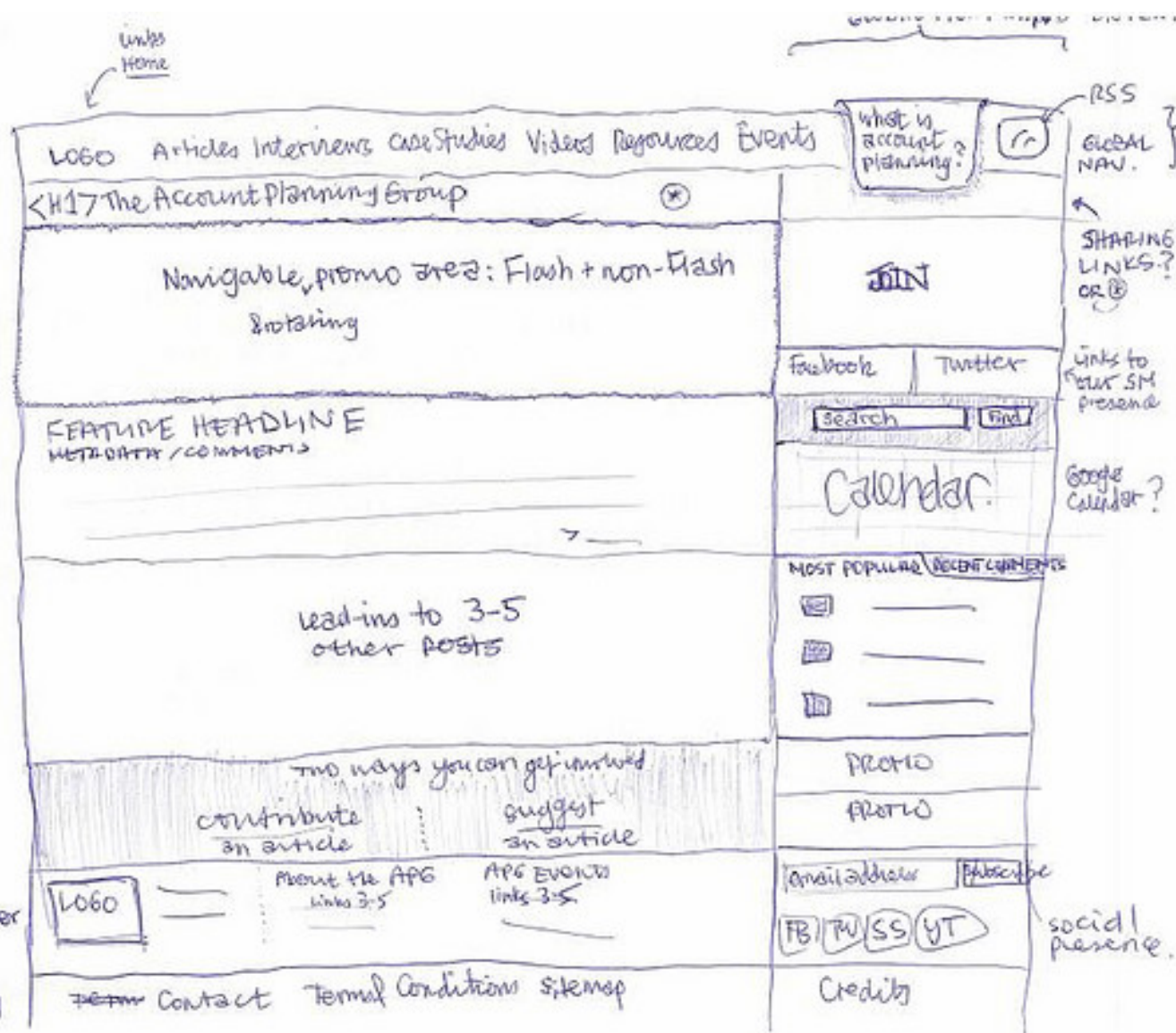
APG  
Homepage

CORE THOUGHT:  
Sparkling ideas

Possibly  
an image?

Global content footer

Global mandatory  
footers



# WIREFRAMES

- Free Wireframe Tools
- <https://www.designforfounders.com/free-wireframe-tools/>