

Criterion E: Product Development

Advanced Techniques used to meet client's requirements are:

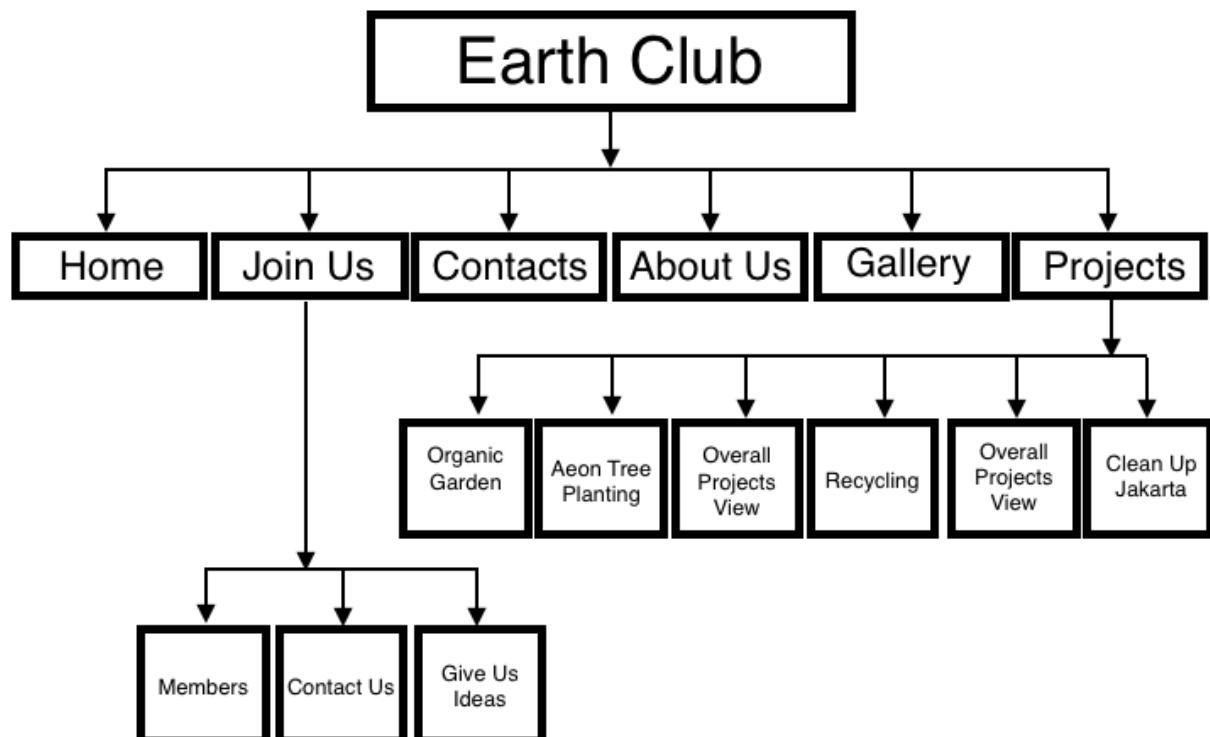
- Proficient integration of the different elements of multimedia
- Manipulated graphics
- Cascading style sheets or schema
- Manipulation of codes such as HTML and JavaScript to customize pages or improve functionality
- Integration of components using advanced features from other applications
- Edited video clips

Basic Techniques used are:

- Navigation (internal and external links)
- Combining text and graphics
- Use of tables or layers for layout
- Use of headers and footers
- Combining two software applications
- Six slides for a presentation

- **Organization of the website**

- I. **Organization Hierarchy (Sitemap) of the website**



II. Document object model

- Indicating the structure and names of the files and folders in which has been arranged.

A. Webpages (.html)

- a. Home
- b. About Us
- c. Contacts
- d. Gallery
- e. Projects
- f. Join
- g. Cleanupjakarta
- h. Aeon
- i. garden
- j. idea
- k. members
- l. Recycling

B. CSS Files (.css)

- a. style
- b. gall

C. Graphics (.jpg/.png)

D. JS (.js)

- a. myScript

E. Slider

- a. images (.jpg/.png)
- b. themes

- The webpages and files are classified into the file types (web-pages, CSS files, images, and javascript), so Mr.Basil or any authorized stakeholders will have no difficulties accessing these files in my absence.
- Within Graphics are images classified under different projects and arranged in named subfolders.
- **Changes to the Design:** I divided the Join Us page from Criterion D into 3 separate webpages (Join, members, idea) as Mr.Basil think it's too crowded to be in one page.

- Techniques Used

I. Managing Main Page Template

A. CSS Style Sheet

All stylesheets are integrated into one page; for consistent layout requested by the client in Criteria-B. Hence Mr.Basil can change the designs of all web-pages through one CSS file.

```

1  body{
2      background-color: black;
3      margin: 0;
4  }
5  div.body {
6      background-color: FFFFCC;
7      margin: 0 auto;
8      padding: 0;
9
10     width: 970px;
11 }
12 div#heading {
13     background-color: #222;
14     height: auto;
15 }
16 h1 {
17     color: white;
18     text-align: center;
19     padding-top: 20px;
20     font-size: 70px;
21     display: block;
22     margin-bottom: 30px;
23 }
24 div#heading ul li {
25     display: inline-block;
26 }
27 div.col-sm-4 {
28     padding-bottom: 40px;
29     padding-top: 0px;
30     margin: 10px;
31
32     display: inline-block;
33 }
34 div#alllink{
35     display: block;
36     padding-right: 30px; /*make the links go to 1
37 }
38

```

```

}
#nav ul ul {
    display: none; /*When li not in hover ul
    position: absolute;
    min-width: 200px;
}
#nav ul ul li {
    display: block; /*Appears in vertical*/
}
#nav ul ul li a:hover {
    color: #099;
}
/*Dropdown end*/
/*Footers*/
div#footer2{
    height: 200px;
    border: 1px solid black;
    margin: 0 auto;
    text-align: center;
    margin-top: 2%;
}
div#footer1{

```

Comment Tags - to classify codes.

```

<head>
    <link rel="stylesheet" type="text/css" href="style.css">
    <title>Earth Club - Welcome</title>
</head>
<!--Slideshow External sheet-->

```

linking CSS to HTML - under head tag

B. Use of Tables to organize data

Name	Work/Grade	Position
Basil Chesney	Chemistry Teacher	Supervisor
Jocelyn	10	President
Dhanita	10	Vice President
Steven	12	storage keeper
Rafi	12	Member
Stanley	12	Member

```
<p class="bigheading"> List of Members </p>

<table class="members">
  <thead>
    <th> Name </th>
    <th> Work/Grade </th>
    <th> Position </th>
  </thead>
  <tbody>
    <tr>
      <td> Basil Chesney </td>
      <td> Chemistry Teacher </td>
      <td> Supervisor </td>
    </tr>
    <tr>
      <td> Jocelyn </td>
      <td> 10 </td>
      <td> President </td>
    </tr>
    <tr>
      <td> Dhanita </td>
      <td> 10 </td>
      <td> Vice President </td>
    </tr>
    <tr>
      <td> Steven </td>
      <td> 12 </td>
      <td> storage keeper </td>
    </tr>
    <tr>
      <td> Rafi </td>
      <td> 12 </td>
      <td> Member </td>
    </tr>
    <tr>
      <td> Stanley </td>
      <td> 12 </td>
      <td> Member </td>
    </tr>
  </tbody>
</table>
```

```
/*Members*/
table.members, th, tr, td{
  border: 2px solid black;
  border-collapse: collapse;
  margin: 0 auto;
}
table.members{
  width: 700px;
  height: auto;
}
table.members th{
  background-color: #66FF99;
}
table.members th, tr, td{
  padding: 20px;
}
```

collapse border to make it one line border

Organized width of columns

Background color of th

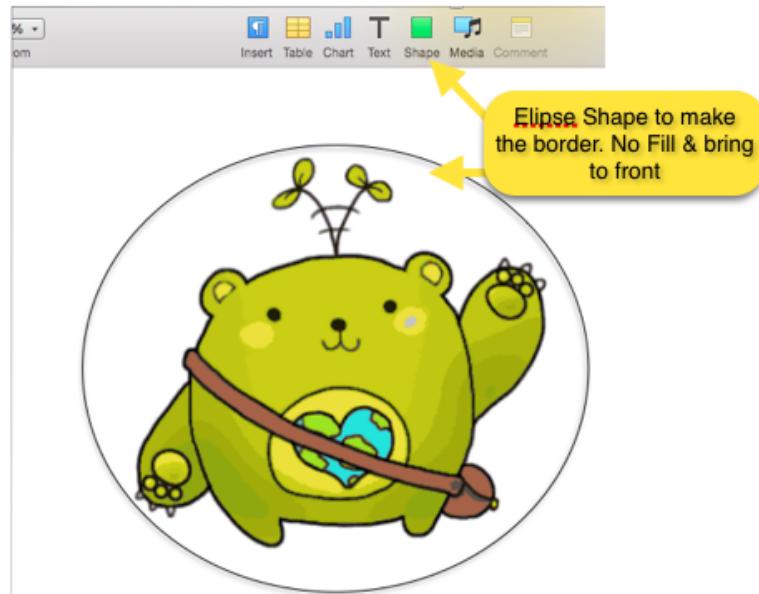
List of Members

Name	Work/Grade	Position
Basil Chesney	Chemistry Teacher	Supervisor
Jocelyn	10	President
Dhanita	10	Vice President
Steven	12	storage keeper
Rafi	12	Member
Stanley	12	Member

II. Combining two software applications & Manipulating graphics

A. Modification of Logo using Pixelmator & Pages

The logo was initially made by the club and requested by Mr.Basil to be placed on the website header to add professionalism. I used ‘Pages’ software to apply border using the *shape* tool. Image is set as “*Bring to front*” so the shape appears in background.



I then used pixelmator to erase white backgrounds using alpha tool to select and delete. I export as .png, to allow alpha transparency.



III. Use of header and footer

A. Creating header and putting up logo with HTML and CSS and Use of layers (nested structures) for layout

I insert the logo as a div element background with CSS because only then, can transparency be done. I use ‘relative positioning’ to position the logo without affecting other elements.

Aside from logo, I use texts and navigation links on the header. The links are nested into lists and organized within div elements as shown on the HTML below. The divisions improve the structure pragmatically, for other programmers to easily manipulate these links in the future.

```
div.logo{
    display: inline-block;
    height: 170px;
    width: 21%;

    float: left;
    -moz-border-radius: 100px; /*Make div circular*/
    -webkit-border-radius: 100px;
    border-radius: 100px;

    position: relative;
    left: 50px;
    top: 10px;           Image set as background
                         image to allow transparency.

    background-image:url(logo.png);
    background-repeat:no-repeat;
    background-position: center;

    background-size: 130%;

    margin:0;
    padding:0           Image Size relative to div
}
```

<body>

```
<div class="body">
    <div id="heading">
        <div class="logo"></div>
        <h1>EARTH CLUB</h1>
        <center><div id="alllink">
            <ul id="menu">
                <div class="col-sm-4">
                    <li><a href="Home.html" id="home">Home</a></li>
                </div>
                <div class="col-sm-4">
                    <li><a href="About Us.html" id="aboutus">About Us</a></li>
                </div>
                <div class="col-sm-4" style="text-align: right;">
                    <li><a href="Contact.html" id="contacts">Contacts</a></li>
                </div>
            </ul>
        </div></center>
    </div>
</div>
```

Nested tags are organized chronologically using tabs

Below is the process of making navigation links on the header. Fonts and colors are customized with CSS. Pseudo elements was also used for user-interactivity.

EARTH CLUB

Logo

Colorful links - width and height of links are controlled

display block to let links appears as blocks, inner link (a) padding to control width and height of each block ; and padding and margins to control the distances between the links

Make links not underlined, and black colored

Change background colors of the link when hovered - Make it colorful & lively

```
div#alllink{
    display: block;
    padding-right: 30px;
}

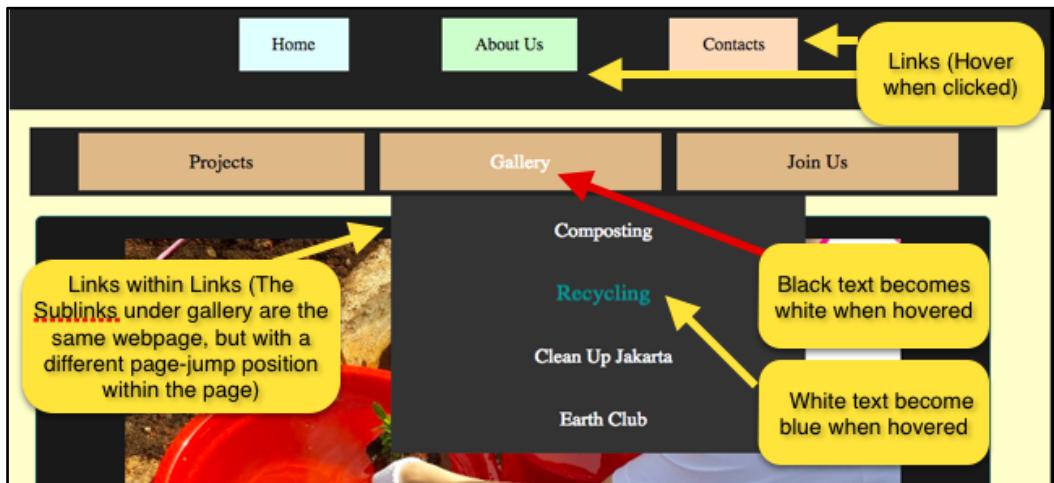
div#heading ul li a {
    text-decoration:none;
    color:black;
    padding: 15px 30px;
    margin-left: 30px;
    margin-right: 30px;
}

div#heading ul li a#home {
    background-color:LightCyan;
}
div#heading ul li a#aboutus {
    background-color:#CCFFCC;
}
div#heading ul li a#contacts {
    background-color:PeachPuff;
}
div#heading ul li a:hover {
    color:white;
}
div#heading ul li a#home:hover {
    background-color: #222;
}
div#heading ul li a#aboutus:hover {
    background-color: #222;
}
div#heading ul li a#contacts:hover {
    background-color: #222;
}
```

IV. Navigation Links

A. Organized links (html codes) into lists for Drop Down Menu

Drop-down menu improves navigation as it's more organized, professional and user-friendly. Techniques like pseudo codes are integrated to change colors of hovered buttons, adding aesthetics for users.



CSS

```
/*Dropdown*/
div#nav {
    background-color:#222;
    width: 90px;
    margin: 0 auto;
    padding: 0;
}
div#nav-wrapper {
    width:100px;
    margin:0 auto;
    text-align: center;
}
div#nav-wrapper> ul >li a {
    padding: 15px 100px 15px 100px;
    background-color: BurlyWood;
    margin: 5px;
}
    position: relative;
    right: 15px;
}
#nav ul {
    list-style-type:none;
    margin:0;
    position:relative;
}
div#nav ul li{
    display:inline-block;
}
    Get rid of
    bullets in the
    list
    Change display from
    block to none when
    li:hover
Style of link
text
Padding to
control size of
link.
#nav ul li a,visited {
    text-decoration: none;
    color:black;
    display:block;
    padding:20px;
    font-size: 18px;
}
#nav ul li a:hover {
    color:#ccc;
}
#nav ul li a:hover ul{
    color:white;
}
#nav ul li a:hover{
    color:#ccc;
}
#nav ul li: hover ul{
    display:block;
    /*When we hover first ul
     which is display:blo
     background-color: #333;
}
    z-index: 1;
}
#nav ul li: hover ul a{
    background-color: #333;
}
#nav ul ul {
    display:none;
    /*When li not in hover
     position: absolute;
     min-width: 200px;
}
#nav ul ul li{
    display:block;
}
#nav ul ul li a:hover {
    color: #009;
}
```

HTML

```
<div id="nav">
<div id="nav-wrapper">
<ul class="menu">
    <li>
        <a href="Projects.html"> Projects </a>
        <ul class="submenu">
            <li><a href="Projects.html">Overall Project View</a></li>
            <li><a href="Composting.html">Composting</a></li>
            <li><a href="Recycling.html">Recycling</a></li>
            <li><a href="Cleanupjakarta.html">Clean Up Jakarta</a></li>
            <li><a href="#">Earth Club</a></li>
        </ul>
    </li>
    <li>
        <a href="#"> Gallery </a>
        <ul class="submenu">
            <li><a href="Gallery.html#composting">Composting</a></li>
            <li><a href="Gallery.html#recycling">Recycling</a></li>
            <li><a href="Gallery.html#cleanupjakarta">Clean Up Jakarta</a></li>
            <li><a href="Gallery.html#earthclub">Earth Club</a></li>
        </ul>
    </li>
    <li>
        <a href="#"> Join Us </a>
        <ul class="submenu">
            <li><a href="members.html">Members</a></li>
            <li><a href="Contact.html">Contact Us</a></li>
            <li><a href="idea.html">Give Us Ideas</a></li>
        </ul>
    </li>
</ul>
</div>
<br>
```

Within divs - for easy CSS editing

Links organized - in unordered list - within parent link - within parent list

Using hashtag for page jump internal links, and name of class of the section

spacing in CSS indicates nested element inside another

B. Internal Links within parts of a webpage

Internal links are shortcuts for users to skip to sections of a web page; by setting up id names for each section(div) and add the #name of id following the page name.

following the name of id of the <div> area on the webpage (Gallery), used to link links toward the desired id area on the page

```
<li><a href="#">../Webpages/Gallery.html#recycling">Recycling</a></li>
<li><a href="#">../Webpages/Gallery.html#cleanupjakarta">Clean Up Jakarta 2013</a><
<li><a href="#">../Webpages/Gallery.html#aeon">Aeon Tree Planting</a></li>
<li><a href="#">../Webpages/Gallery.html#cleanupjakarta2014">Clean Up Jakarta 2014<
<li><a href="#">../Webpages/Gallery.html#organicgarden">Organic Garden</a></li>
```

C. Links to pictures and pages in different folders

To organize web pages, files are classified to graphics, webpage, css pages, etc. Therefore linking needs to be done through the directory of another folder. This is done using .. to indicate going to the previous/parent folder.

../ means going to the previous directory where the current html folder is.

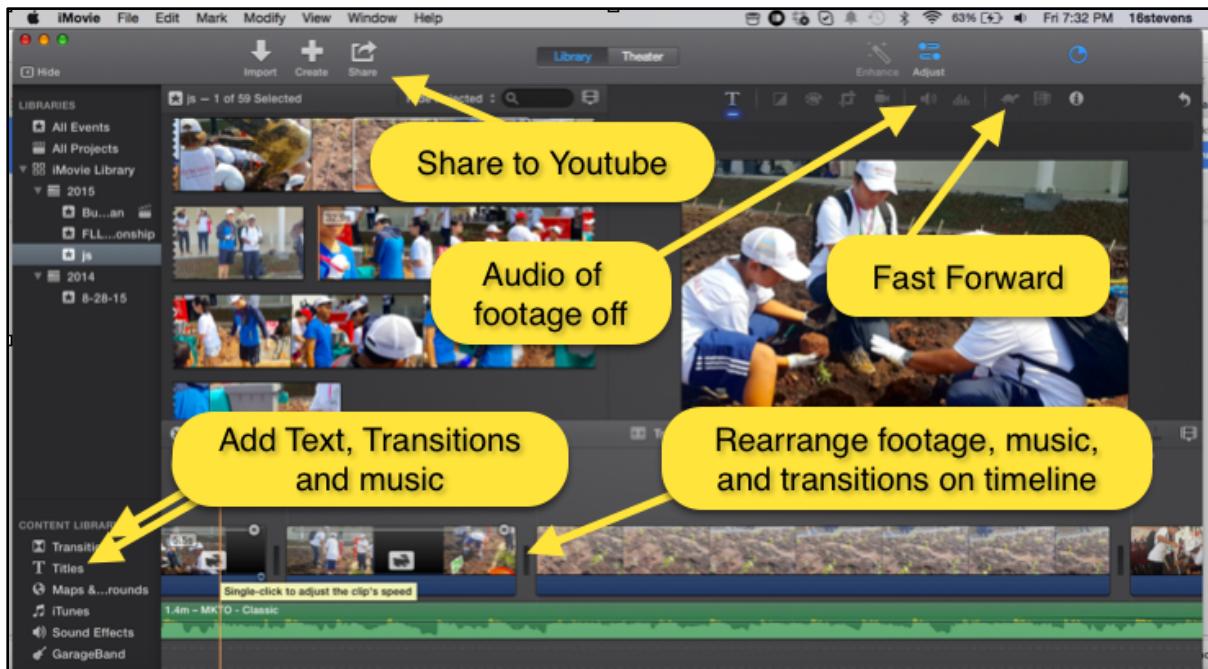
```
../Slider/images/thumb1.jpg" />
../Slider/images/thumb2.jpg" />
../Slider/images/thumb3.jpg" />
../Slider/images/thumb4.jpg" />
../Slider/images/thumb5.jpg" />
../Slider/images/thumb6.jpg" />
```

- V. Proficient integration of the different elements of multimedia (video clips, audio, texts, and pixel graphics),
- VI. Integration of components using advanced features from other applications (Imovie),
- VII. Combining text and graphics

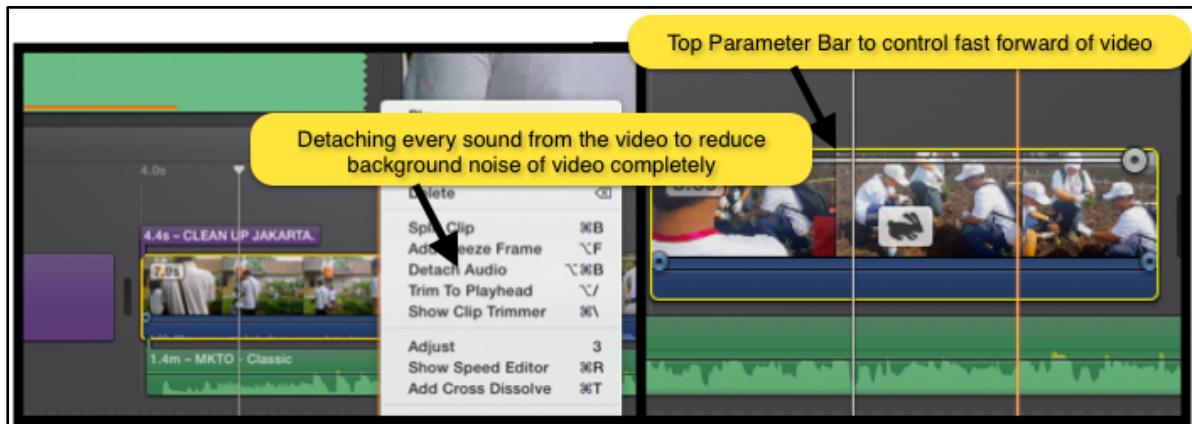
I compiled videos that Mr.Basil provided into a short introduction using “iMovie”. I used an external music namely “Classic” by MKTO under Mr.Basil’s choice. However it couldn’t be heard on the iframe due to copyright.

Imovie allowed me to compile audio, videos, as well as transitions and built-in text animations. These multimedia allows more engagement from the audiences who like better visuals. After getting an agreement of Mr.Basil, I publish it on Youtube. It is more effective to display a cloud-stored video rather than increasing the client’s storage memory.

I embed the video with HTML and CSS to style the dimensions and background color of the div enclosing the video tag.



About Us

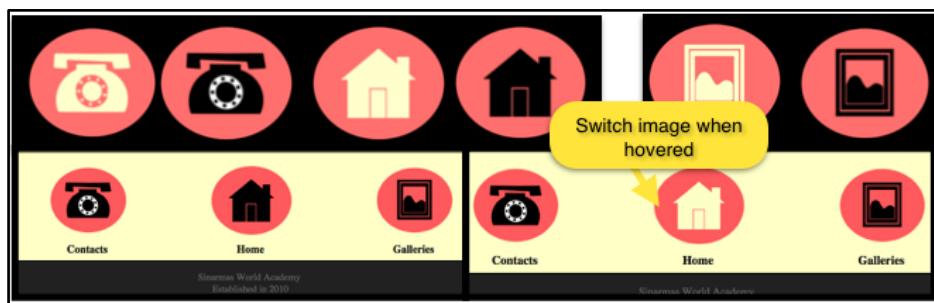
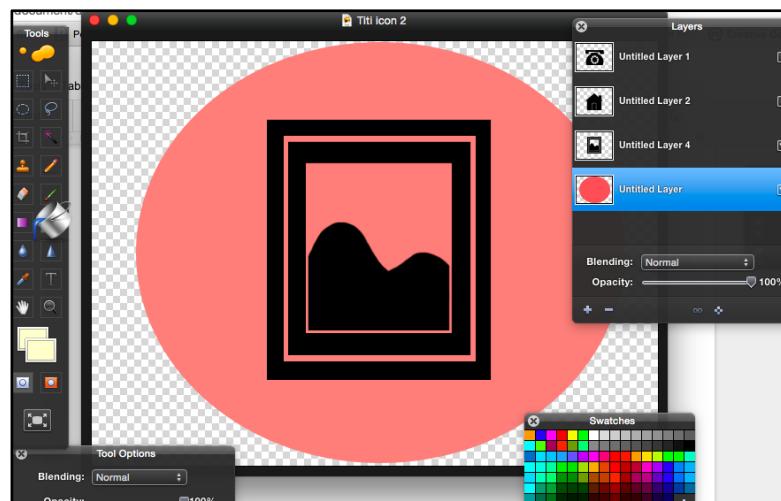


VIII. Manipulated Graphics (with pixelmator and CSS) & Integration of components using advanced features from other applications

A. Creating Footer

I used “Pixelmator” to create icons for the footer’s interactive buttons; which changes background color when hovered. I created two separate pictures using the same icon, but only changed the background color of the circle which is in another layer using the fill tool.

After having two distinct pictures for every icon, I used CSS’s pseudo element to change to another picture when hovered. Some challenges was arranging the icons to the right width, height, padding and float positions. I learned that alpha-transparency is needed for the image to appear circle in the website. This alpha-transparency was done in CSS.



B. Manipulation of graphics / use of Photoshop in organizing images

Another use of pixelmator is to scale images to certain dimensions for the interactive slideshow and gallery. The size of pictures in the slideshow is 700-306px, while thumbnails under the slideshow is 100-60px.



Dimension settings appear when new file is created. Edit>Transform>Scale, allows scaling of pictures according to desired dimensions. For portrait images, I used a fill tool for black background, so it fits the frame well without having to crop.



IX. Manipulation of codes with JavaScript

A. Making quiz with if-else instructions in Javascript

Javascript helped me create a mini-quiz in the home page for interactivity as well as the purpose of sharing awareness like Mr.Basil requested. Using if-else-if statements, input from users are processed in the script's function. Based on the conditions of input, output is printed in a form of text by replacing the ‘.innerHTML’ of the null value string on the webpage with the processed answer from the script.

The diagram illustrates a web-based quick guess quiz and its corresponding JavaScript code. The quiz interface features a title 'Quick Guess!', a question about plastic bottle degradation, and two input fields with 'Check My Guess' buttons. The code defines a function 'myFunction()' that retrieves the user input, checks if it's a number, and provides feedback based on the value relative to a constant 'ans=450'. It also updates the page's `innerHTML` for the 'demo' element. Annotations explain the code's logic and its connection to the user interface.

HTML (Left):

```
<span id="quiz">
<h2> Quick Guess! </h2>
<p>The average time for a plastic bottle to completely degrade is at least _ years.</p>
<input id="numb" type="number">
<button type="button" onclick="myFunction()">Check My Guess</button>
<p id="demo"></p>
</span>
```

JavaScript (Right):

```
<script>
function myFunction() {
    var x, text, ans;
    ans=450;
    // Get the value of the input field with id="numb"
    x = document.getElementById("numb").value;

    // If x is Not a Number
    if (isNaN(x)) {
        text = "Input not valid";
    } else if(ans<x){
        text = "Your guess is too big";
    } else if(ans>x){
        text = "Your guess is too small";
    } else{
        text = "That's right!";
    }

    document.getElementById("demo").innerHTML = text;
}
</script>
```

Annotations:

- replace variable x with user input value from text box (id of value ="numb")
- Changing Conditions using If else If statement
- Replace <p> tag with id "demo" with text from myFunction()

B. Making the slideshow images (External Source)

The base code of the slideshow is obtained from *Menucool.com*, an online site which provide codes for web developers. The code contains images, javascript, css, and html. I manipulated the code to fit my design by changing the background-color, the image links, thumbnail links, width of slideshow area, and image descriptions. ("Menucool.")

```
<!--Slideshow-->


<div id="slider">
    <a class="lazyImage" href=".../Slider/images/image-slider-1.jpg" title="Aeon Tree Planting">Aeon Tree Planting</a>
    <a class="lazyImage" href=".../Slider/images/image-slider-2.jpg" title="Clean Up Jakarta 2014">Clean Up Jakarta 2014</a>
    <a href="http://www.menucool.com/javascript-image-slider">
      <b data-src=".../Slider/images/image-slider-3.jpg" data-alt="Clean Up Jakarta 2013">Clean Up Jakarta 2013</b>
    </a>
    <a class="lazyImage" href=".../Slider/images/image-slider-4.jpg" title="Clean Up Jakarta recyclable trashes">Clean Up Jak
    <a class="lazyImage" href=".../Slider/images/image-slider-5.jpg" title="Gardening Project">Gardening Project</a>
    <a class="lazyImage" href=".../Slider/images/image-slider-6.jpg" title="Recycling Project">Recycling Project</a>


```

HTML

Link of images

Description of image within link


```
<!--thumbnails-->


<div class="thumb"></div>
  <div class="thumb"></div>
  <div class="thumb"></div>
  <div class="thumb"></div>
  <div class="thumb"></div>
  <div class="thumb"></div>


</div>
</div>
```

Thumbnail Images

Manipulated CSS

```
/*slider frame*/
#sliderFrame {
  width:820px; /*I change the width*/
  margin:0 auto; /*center-align*/
  padding:20px;
  background:#191919;
  border:1px solid #066;
  border-radius:6px;
}

#slider, #slider div.sliderInner {
  width:700px; height:306px; /*must be the same*/
}

#slider {
  background:black url(loading.gif) no-repeat 50% 50%;
  position:relative;
  margin:0 auto; /*center-aligned*/
  transform: translate3d(0,0,0);
}
```

Width of the whole slider area (dark grey background)

I added "margin: 0 auto;" to center the whole <div> slider area on the webpage

Size of image resolution (same for all images)

C. Making hover-effect gallery

Photo gallery is made with the help of an online resource, CSS3 Image Hover Effects.
(Andrey, "CSS3 Image Hover Effects | Script Tutorials").

I changed the dimensions of the <div> elements to fit the images and organize 3 images in one row filling the page. The online resource provide guidelines to help create smooth transitions for the scale animation of hovered images. Codes are manipulated for web browser compatibility as shown below.

```
.photos {
    width: 800px;
    height: 100%;
    margin: 40px auto;
    position: relative;
}
.container{
    height: auto;
    display: inline-block;
    <!-- Adding a container class helps make it display as block-->
}
.photos > div {
    background-color: rgba(128, 128, 128, 0.5);
    border: 2px solid #444;
    float: left;
    height: 150px;
    margin: 5px;
    overflow: hidden;
    position: relative;
    width: 230px;
    z-index: 1;
    -webkit-border-radius: 10px;
    -moz-border-radius: 10px;
    -ms-border-radius: 10px;
    -o-border-radius: 10px;
    border-radius: 10px;
    -webkit-transform: scale(1.0);
    -moz-transform: scale(1.0);
    -ms-transform: scale(1.0);
    -o-transform: scale(1.0);
    transform: scale(1.0);
    -webkit-transition-duration: 0.5s;
    -moz-transition-duration: 0.5s;
    -ms-transition-duration: 0.5s;
    -o-transition-duration: 0.5s;
    transition-duration: 0.5s;
}
```

Size of the image increases when hovered. There's smooth transitions in increasing image done with CSS

different codes are required for different web browser - for browser compatibility. (Ex. - `moz-` for mozilla firefox)

Initially called at 1.0. Afterwards 1.8 when hovered.

transition duration for smoother scale on image when hovered.

```
.photos > div:hover{
    z-index: 10;
    -webkit-transform:scale(1.8);
    -moz-transform:scale(1.8);
    -ms-transform:scale(1.8);
    -o-transform:scale(1.8);
    transform:scale(1.8);
}
```

There was a problem faced where images are overlapping without order like seen below. I figured out that by setting position of div to relative, z-index can be used to treat graphics as layers.



Overlapping images unorganized

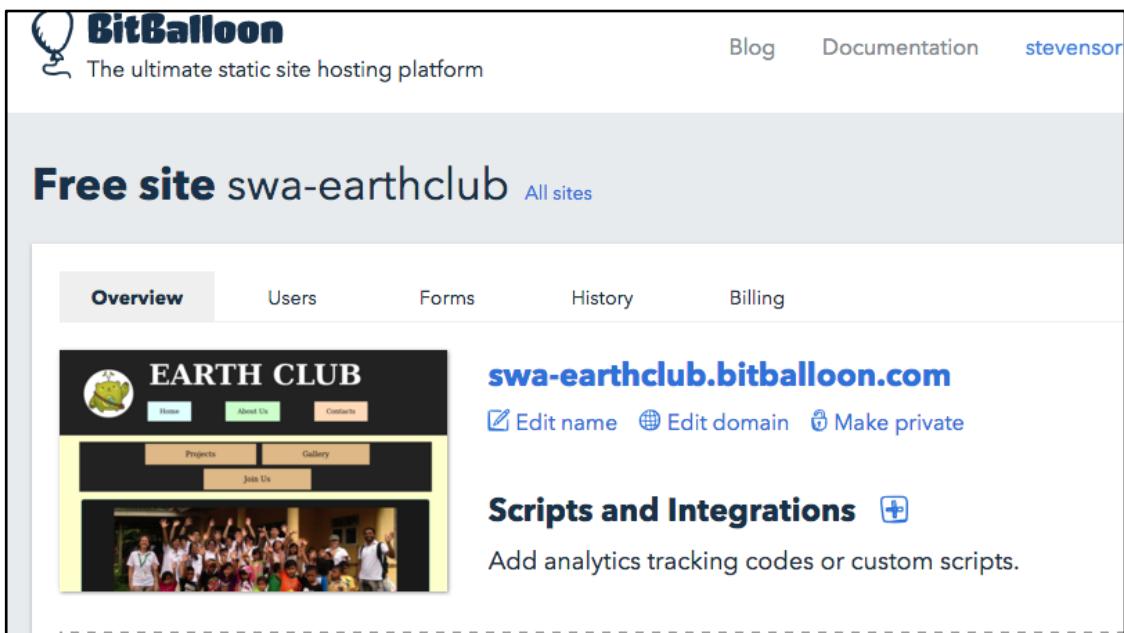
Solution

```
.photos > div {
    background-color: rgba(128, border: 2px solid #444;
    float: left;
    height: 150px;
    margin: 5px;
    overflow: hidden;
    position: relative;
    width: 230px;      <!--
    z-index: 1;
}
```

I used position: relative, for the div; so that z-index works. Z-index allows graphics to appear on top of others like layers.

X. Web Hosting

I used free hosting using www.bitballoon.com by submitting my files, and naming home-page as index.html. The website can now be available on <http://swa-earthclub.bitballoon.com/>



Free site swa-earthclub [All sites](#)

Overview [Users](#) [Forms](#) [History](#) [Billing](#)

swa-earthclub.bitballoon.com

[Edit name](#) [Edit domain](#) [Make private](#)

Scripts and Integrations [+](#)

Add analytics tracking codes or custom scripts.

Works Cited:

Andrey. "CSS3 Image Hover Effects | Script Tutorials." Script Tutorials. N.p., 25 Jan. 2012. Web. 13 Feb. 2014. <<http://www.script-tutorials.com/css3-image-hover-effects/>>.

"Menucool." *Menucool*. N.p., n.d. Web. 14 Sept. 2015. <<http://www.menucool.com/javascript-image-slider>>.

Word Count: 1169