

Comp 125 - Visual Information Processing

Spring Semester 2019 - Week 6 - Wednesday

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HTML & JavaScript - create a game - guess a letter

get letter from input field

- add **event listener** to the guess button
 - *listener is attached to the guess button*
 - *logic is executed each time a player clicks on this button*
 - *get the value of the letter entered by the player*
 - *value of input field for guess a letter*
 - *log value to console for initial testing*

```
// listen for user click on `guess` button
var guessBtn = document.getElementById('guessBtn');
guessBtn.addEventListener('click', function() {
    // get letter from input field
    var letter = document.getElementById('guess').value;
    console.log('letter = ' + letter);
    // check letter against
}, false);
```

HTML & JavaScript - create a game - HTML

update game page

- update HTML for game
 - *add <p> for letter guess by player*

```
<section id="updates">
  <header>
    <h3>game updates</h3>
  </header>
  <p id="guessLetter"></p>
  <p id="wordStatus"></p>
</section>
```

- Hangman Game - v0.1

HTML & JavaScript - create a game - guess a letter

output letter from input field

- use **guess** letter from input field
 - *output value to HTML for player*

```
// listen for user click on `guess` button
var guessBtn = document.getElementById('guessBtn');
guessBtn.addEventListener('click', function() {
  // get letter from input field
  var letter = document.getElementById('guess').value;
  // output guess letter
  console.log('letter = ' + letter);
  document.getElementById('guessLetter').innerHTML = `guess letter: ` + letter;
  // check letter against
}, false);
```

- get element with ID guessLetter
 - *set HTML to player's current **guess** letter*

HTML & JavaScript - create a game - check guess letter

check letter against game word - part 1

- use `includes()` method with `gameWord` string
 - *initial check that guess letter is in game word*

```
// check letter against game word
if (gameWord.includes(letter) === true) {
  console.log('letter has been found...');
} else {
  console.log('letter not found...');
  document.getElementById('guessLetter').innerHTML = 'letter not found - please';
}
```

- log results of conditional statement to console
 - *update player if guess letter not found in game word*

HTML & JavaScript - create a game - check guess letter

check letter against game word - part 2

- loop through game word
 - check guess letter against each character in game word
 - e.g. *letter* in *gameWord*
 - if guess letter found in game word
 - add guess letter to matching index position in *answers* array
 - update string from *answer* array
 - output update guess word for player

```
for (i = 0; i < gameWord.length; i++) {
  if (gameWord[i] === letter) {
    console.log('letter = index ' + i);
    answers[i] = letter;
    // update game progress to player
    var lettersOutput = answers.join(" "); // create string from answers array
    document.getElementById('wordStatus').innerHTML = 'guess word: ' + lettersOutput;
  }
}
```

HTML & JavaScript - create a game - check guess letter

check letter against game word - part 3

```
// select guess button in document
var guessBtn = document.getElementById('guessBtn');

// listen for user click on `guess` button
guessBtn.addEventListener('click', function() {
  // get letter from input field
  var letter = document.getElementById('guess').value;
  // output guess letter
  console.log('letter = ' + letter);
  document.getElementById('guessLetter').innerHTML = 'guess letter: ' + letter;
  // check letter against game word
  if (gameWord.includes(letter) === true) {
    console.log('letter has been found...');
    for (i = 0; i < gameWord.length; i++) {
      if (gameWord[i] === letter) {
        console.log('letter = index ' + i);
        answers[i] = letter;
        // update game progress to player
        var lettersOutput = answers.join(" "); // create string from answers array
        document.getElementById('wordStatus').innerHTML = 'guess word: ' + lettersOutput;
      }
    }
  } else {
    console.log('letter not found...');
    document.getElementById('guessLetter').innerHTML = 'letter not found - please try again';
  }
}, false);
```

- Hangman Game - v0.2

Semantic HTML - correct usage

- need to ensure elements convey their correct meaning
 - *i.e. the meaning expected for the contained content*
- e.g. often see the following elements mis-used and applied incorrectly for markup,
 - `<p>` - paragraphs
 - `` - unordered list
 - `<h1>` to `<h6>` - headings
 - `<blockquote>` - blockquote
- using `<blockquote>` to simply help indent text
 - *instead of CSS margins...*
- or the perennial mis-use of a `<p>`
 - *simply add extra space between elements*

```
<p>&nbsp;<p>
```


HTML - structure & validation - example

Using lists correctly...

```
<li>nice</li>  
<li>cannes</li>  
<li>menton</li>
```

- list markup looks OK
 - *still fails validation for an obvious reason*
 - *missing structural grouping for list items*
 - *not valid markup...*
- semantics of the overall list are missing
- example - basic list items

HTML - a semantic point of view

```
<ul>
  <li>nice</li>
  <li>cannes</li>
  <li>menton</li>
</ul>
```

- from the perspective of semantics
 - *meant to act as a group of items that belong together*
- denote such groupings with correct semantic markup
- structuring items to clearly denote their meaning and purpose
- consider global attributes
 - https://developer.mozilla.org/en-US/docs/Web/HTML/Global_attributes
- example - basic group

HTML - benefits of structure & validation

- define and create a meaningful structure for required markup
 - *improves usage and flexibility as project develops*
 - *provides extensible structure for project*
- for example, benefits include
 - *helps increase ease of CSS styling*
 - *creates properly structured documents*
 - *improves general management of updates to markup*
 - ...
- easier to understand and easier to maintain and update
- structured, valid markup aids in repurposing data
 - *into various representations of information*

HTML - benefits of structure & validation - example I

e.g. a standard list

```
<ul>
  <li>nice</li>
  <li>cannes</li>
  <li>menton</li>
  <li>antibes</li>
  <li>grasse</li>
</ul>
```

- example - basic group style

HTML - benefits of structure & validation - example 2

e.g. lists for navigation, menus, tabs...

```
<ul id="menutabs">
  <li><a href="nice">nice</a></li>
  <li><a href="cannes">cannes</a></li>
  <li><a href="menton">menton</a></li>
  <li><a href="antibes">antibes</a></li>
  <li><a href="grasse">grasse</a></li>
</ul>
```

- example - basic menu tabs