Announcements

- Clickers
- Friday—all JavaScript
  - 20 questions, 2 points each
  - Counts as two clicker quizzes

Announcements

- Friday's Quick Write
  - I will give you 4-5 lines of JavaScript code and ask you to explain it line by line
  - The code will be either a function or an if/else statement
  - It will be similar to something you've been doing in lab and something you can explain in 5 minutes.

JavaScript Storyteller Project

Going deeper into Part B

D.A. Clements

Functions

- Declaration syntax

```
function  Name(parameter)
{
    //statement body
    x = x * parameter; //example
}
```

- Call syntax

```
onclick="Name(argument)"
```

Passing Values to Functions

- Declaration syntax

```
function  Name(parameter)
{
    //statement body
    x = x * parameter; //example
}
```

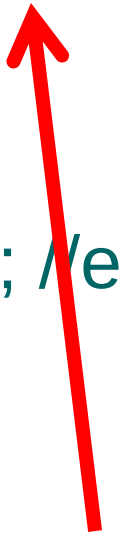
- Call syntax

```
onclick="Name(argument)"
```

Passing Values to Functions

- Declaration syntax

```
function  Name(parameter)
{
    //statement body
    x = x * parameter; //example
}
```



- Call syntax

```
onclick="Name(argument)"
```

Passing Values to Functions

- Declaration syntax

```
function  Name(parameter)
{
    //statement body
    x = x * parameter; //example
}
```

- Call syntax

```
onclick="Name(argument)"
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Passing Values to Functions

- Declaration syntax

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function  Name(parameter)
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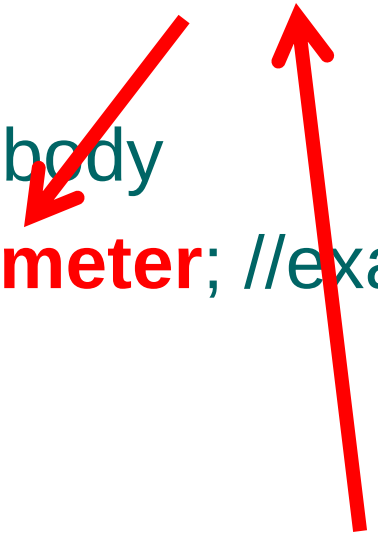


- Call syntax

```
onclick="Name(argument)"
```

Example

- Caps function
  - Strategy:
    1. Change whole string to lower case
    2. Grab the 1st letter of the word
       1. Save it
       2. Make it upper case
    3. Grab the rest of the word and save it
    4. Add the 1st letter and the rest of the word back together and save that

Example

```
function caps(word)
    {
        var word = word.toLowerCase();


    }
```

User entered:

A N N

A n n

a n n

Example

```
function caps(word)
    {
        var word = word.toLowerCase();


    }
```

User entered:

A N N

A n n

a n n

Change to:

a n n

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);


    }
```

word:

a n n

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);


    }
```

word:

```
a n n
```

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);


    }
```

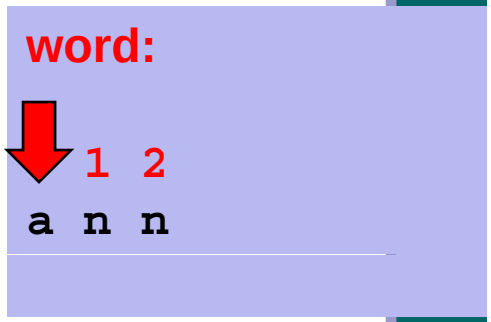
word:

0	1	2
a	n	n

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);

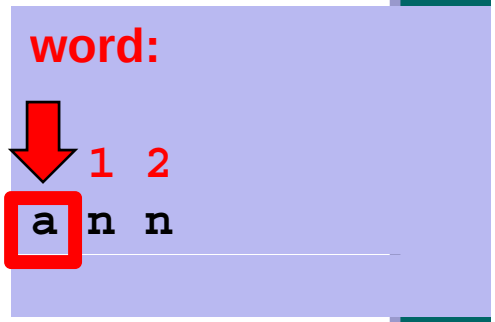

    }
```



Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);


    }
```



Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);


    }
```

word:

0	1	2
a	n	n

firstLetter:

a

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();

    }
```

word:

```
0 1 2
a n n
```

firstLetter:

```
a
```

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();

    }
```

word:

```
0 1 2
a n n
```

firstLetter:

```
A
```

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;

    }
```

word:

```
0 1 2
a n n
```

firstLetter:

```
A
```

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;

    }
```

word:

```
0  1  2
a  n  n
```

firstLetter:

```
A
```

Word is treated as an array with 3 elements
- length = 3
- last index = 2, or **length - 1**

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;
        var restOfWord =
            word.substr(1, wordLength);

    }
```

word:

```
0 1 2
a n n
```

firstLetter:

```
A
```

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;
        var restOfWord =
            word.substr(1, wordLength);

    }
```

word:

0	1	2
a	n	n

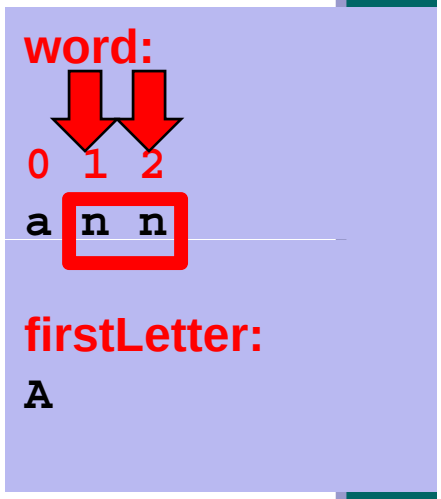
firstLetter:

A

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;
        var restOfWord =
            word.substr(1, wordLength);

    }
```



Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;
        var restOfWord =
            word.substr(1, wordLength);
    }
```

word:

0 1 2
a n n

firstLetter:
A

restOfWord:
n n

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;
        var restOfWord =
                word.substr(1, wordLength);
        var cappedWord =
                firstLetter + restOfWord;
        return cappedWord;
    }
```

word:

```
0 1 2
a n n
```

firstLetter:

```
A
```

restOfWord:

```
n n
```

Example

```
function caps(word)
   {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;
        var restOfWord =
                word.substr(1, wordLength);
        var cappedWord =
                firstLetter + restOfWord;
   }
```

word:
`a n n`

firstLetter:
`A`

restOfWord:
`n n`

cappedWord:
`A n n`

Example

```
function caps(word)
    {
        var word = word.toLowerCase();
        var firstLetter = word.charAt(0);
        firstLetter = firstLetter.toUpperCase();
        var wordLength = word.length -1;
        var restOfWord = word.substr(1, wordLength);
        var cappedWord = firstLetter + restOfWord;
        return cappedWord;
    }
```

Example

- That’s all well and good
  - But how and where do you call it?

Example

- Call the function where you need to run it:
  - Event handlers
    - In the input field or button or image tag:

      onclick="tellStory()";

Example

Caps function

- Before:

```
story += ‘<p>Once upon a time, there lived a <span
    class="replace">' + person + '</span> named ' +
    firstname + '.</p>‘;
```

Example

Calling the function

- Before:

```
story += <p>Once upon a time, there lived a <span
    class="replace">' + person + '</span> named ' +
    firstname + '.</p>';
```

- After:

```
story += <p>Once upon a time, there lived a <span
    class="replace">' + person + '</span> named ' +
    caps(firstname) + '.</p>';
```

Example

Calling the function

- Before:

```
story += <p>Once upon a time, there lived a <span
    class="replace">' + person + '</span> named ' +
    firstname + '.</p>';
```

- After:

```
story += <p>Once upon a time, there lived a <span
    class="replace">' + person + '</span> named ' +
    caps(firstname) + '.</p>';
```

Declaring Multiple Functions

```
<script type="JavaScript">
      function tellStory()        {
                  //statements
      }
</script>
```

Declaring Multiple Functions

```
<script type="JavaScript">
    function tellStory()        {
            //statements
    }
    function capitalize(word)   {
            //statements
    }
</script>
```

Declaring Multiple Functions

```
<script type="JavaScript">
    function tellStory()    {
        //statements
    }
    function capitalize(word)    {
        //statements
    }
    function isVowel(word)    {
        //statements
    }
</script>
```

Declaring Multiple Functions

```
<script type="JavaScript">
    var variables;     //declare any gobal variables
    //also bring user data over from form
    function tellStory()        {
            //statements
    }
    function capitalize(word)    {
            //statements
    }
    function isVowel(word)     {
            //statements
    }
</script>
```

isVowel function

```
function isVowel(word) {
        // basic strategy: make character lower case,
        // then see if it's in a string that contains all
        // of the vowels
        var vowels = "aeiou";
        var c = word.charAt(0);
        if (vowels.indexOf(c.toLowerCase()) == -1 ) {
        // indexOf returns -1 if char. not found in string
                return "a" + word;
        } else {
                return "an" + word;
        }
```

isVowel function

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        var vowels = "aeiou";
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        if (vowels.indexOf(c.toLowerCase()) == -1 ) {
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        if (vowels.indexOf(c.toLowerCase()) == -1 ) {
        // indexOf returns -1 if char. not found in string
                return "a" + word;
        } else {
                return "an" + word;
        }
```

word:

```
0 1 2
P E a r
```

isVowel function

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function isVowel(word) {
        // basic strategy: make character lower case,
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        var vowels = "aeiou";
        var c = word.charAt(0);
        if (vowels.indexOf(c.toLowerCase()) == -1 ) {
        // indexOf returns -1 if char. not found in string
                return "a" + word;
        } else {
                return "an" + word;
        }
```

word:

```
0 1 2 3
P E a r
```

c:

```
P
```

isVowel function

```
function isVowel(word) {
        // basic strategy: make character lower case,
        // then see if it's in a string that contains all
        // of the vowels
        var vowels = "aeiou";
        var c = word.charAt(0);
        if (vowels.indexOf(c.toLowerCase()) == -1 ) {
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                return "a" + word;
        } else {
                return "an" + word;
        }
```

word:

```
0 1 2
P E a r
```

c:

```
P
```

isVowel function

```
function isVowel(word) {
        // basic strategy: make character lower case,
        // then see if it's in a string that contains all
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        var vowels = "aeiou";
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        // indexOf returns -1 if char. not found in string
                return "a" + word;
        } else {
                return "an" + word;
        }
```

word:

```
0 1 2
P E a r
```

c:

```
p
```

isVowel function

```
function isVowel(word) {
        // basic strategy: make character lower case,
        // then see if it's in a string that contains all
        // of the vowels
        var vowels = "aeiou";
        var c = word.charAt(0);
        if (vowels.indexOf(c.toLowerCase()) == -1 ) {
        // indexOf returns -1 if char is not found in string
                return "a“ + ‘ ‘ + word;
        } else {
                return "an“ +  ‘ ‘ + word;
        }
```

word:

```
0 1 2
P E a r
```

c:

```
p
```

Calling is_vowell()

- story += is_vowel(firstname);

Concatenating

- Can be done two ways:
  - story = story + ….
  - story += ….