

## Announcements

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

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## 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.

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## JavaScript Storyteller Project

Going deeper into Part B

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## 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
 

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

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

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## 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
 

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

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

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## Passing Values to Functions

- Declaration syntax
 

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

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

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## Example

- Caps function
  - Strategy:
    1. Change whole string to lower case
    2. Grab the 1<sup>st</sup> 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 1<sup>st</sup> letter and the rest of the word back together and save that

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## Example

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

User entered:

A N N

A n n

a n n

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## Example

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

User entered:

A N N

A n n

a n n

Change to:

a n n

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## Example

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

word:

a n n

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**Example**

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

word:  
a n n

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**Example**

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

word:  
0 1 2  
a n n

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**Example**

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

word:  
↓ 1 2  
a n n

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**Example**

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

word:  
↓ 1 2  
a n n

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**Example**

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

word:  
0 1 2  
a n n

firstLetter:  
a

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**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

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### 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
```

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### 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
```

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### 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,
- **word.length - 1**

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### 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
```

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### 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
```

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### 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
```

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### 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

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### 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

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### 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

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### 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;
}
```

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### Example

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

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### Example

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

```
onclick="tellStory()";
```

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## 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 global variables
  //also bring user data over from form
  function tellStory() {
    //statements
  }
  function capitalize(word) {
    //statements
  }
  function isVowel(word) {
    //statements
  }
</script>

```

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## 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;
  }
}

```

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## 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;
  }
}

```

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## 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;
  }
}

```

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## 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;
  }
}

```

word:  
0 1 2  
P E A R

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## 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;
  }
}

```

word:  
0 1 2 3  
P E A R  
c:  
P

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### 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;
  }
}
```

**word:**

o 1 2  
P E a r

**c:**

P

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### 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;
  }
}
```

**word:**

o 1 2  
P E a r

**c:**

P

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### 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:**

o 1 2  
P E a r

**c:**

P

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### Calling is\_vowel()

- story += is\_vowel(firstname);

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### Concatenating

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

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