

Web Development Fundamentals

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Software Engineering Department

Thompson Rivers University

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Help!

Ask for help when needed.

We are here to assist you!

Brock, Alissa, Lars, and Abril

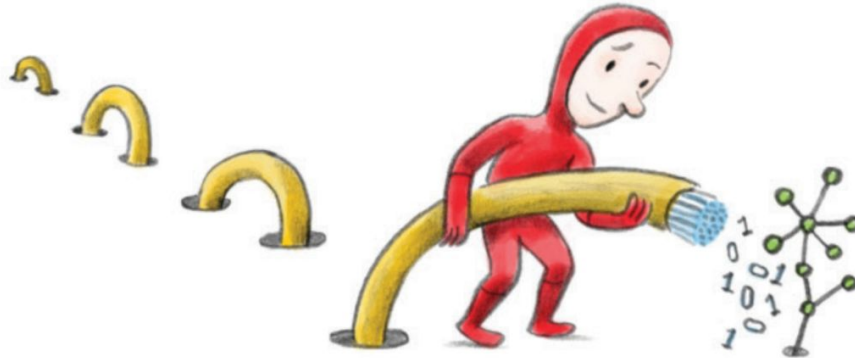


What's the
difference between
the **Internet** and
the **Web**?



Internet vs Web

The **Internet** is a network of interconnected computing devices



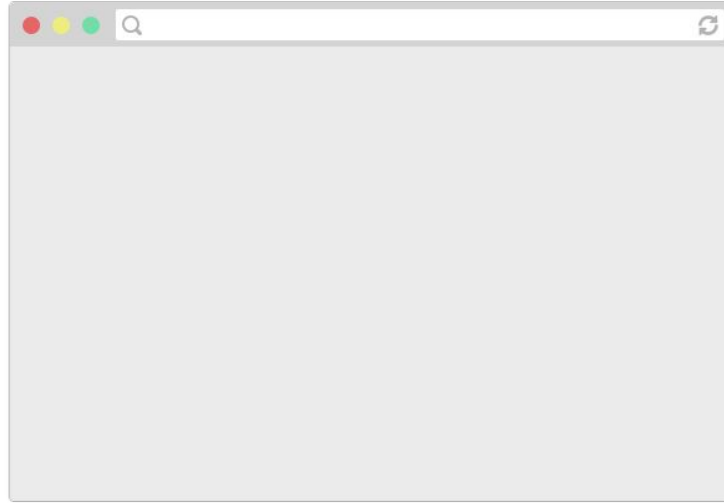
Internet vs Web

The **Web** is an application on over the Internet.

A collection of interconnected documents (web pages)



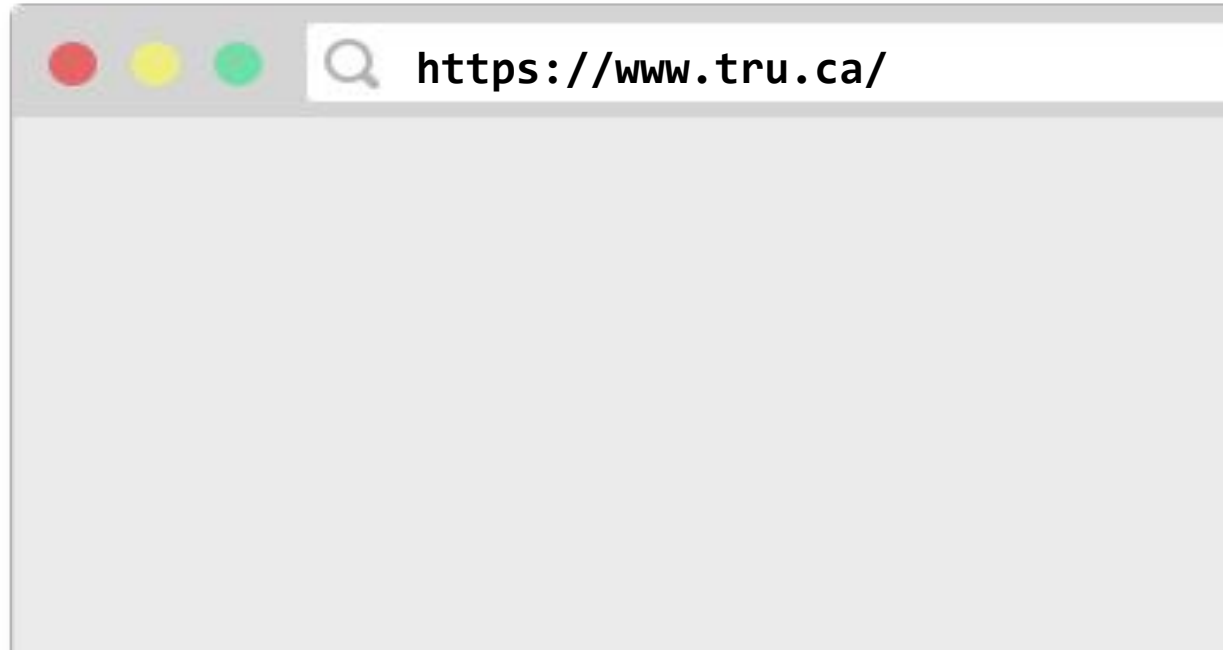
How do web pages work?



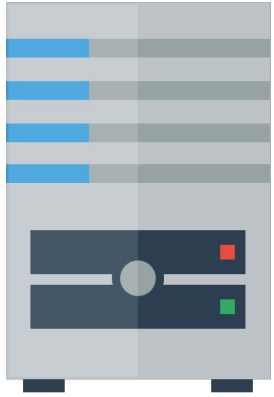
Browsers are applications that can display web pages.

How do web pages work?

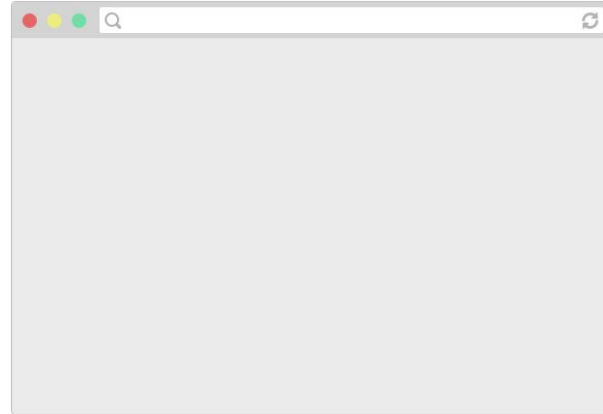
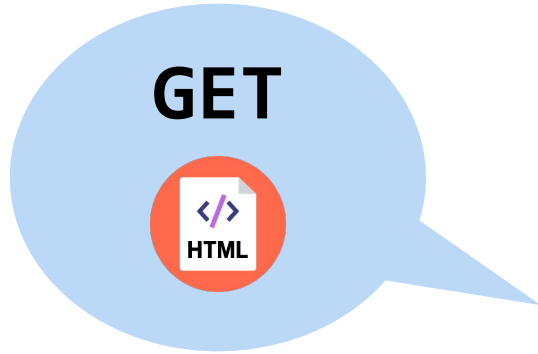
1. You type in a URL



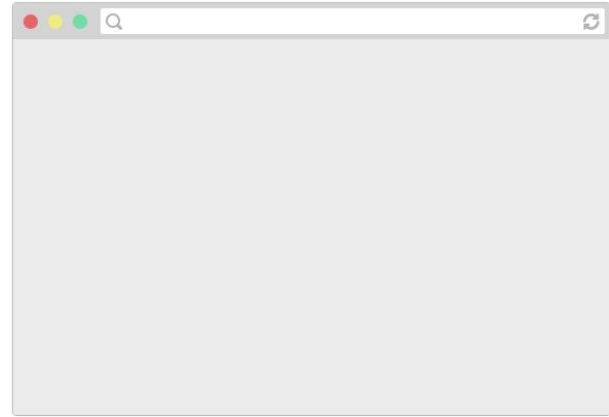
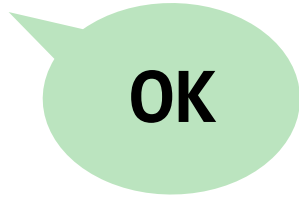
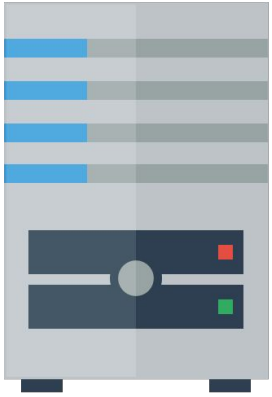
How do web pages work?



2. The browser asks the
web server



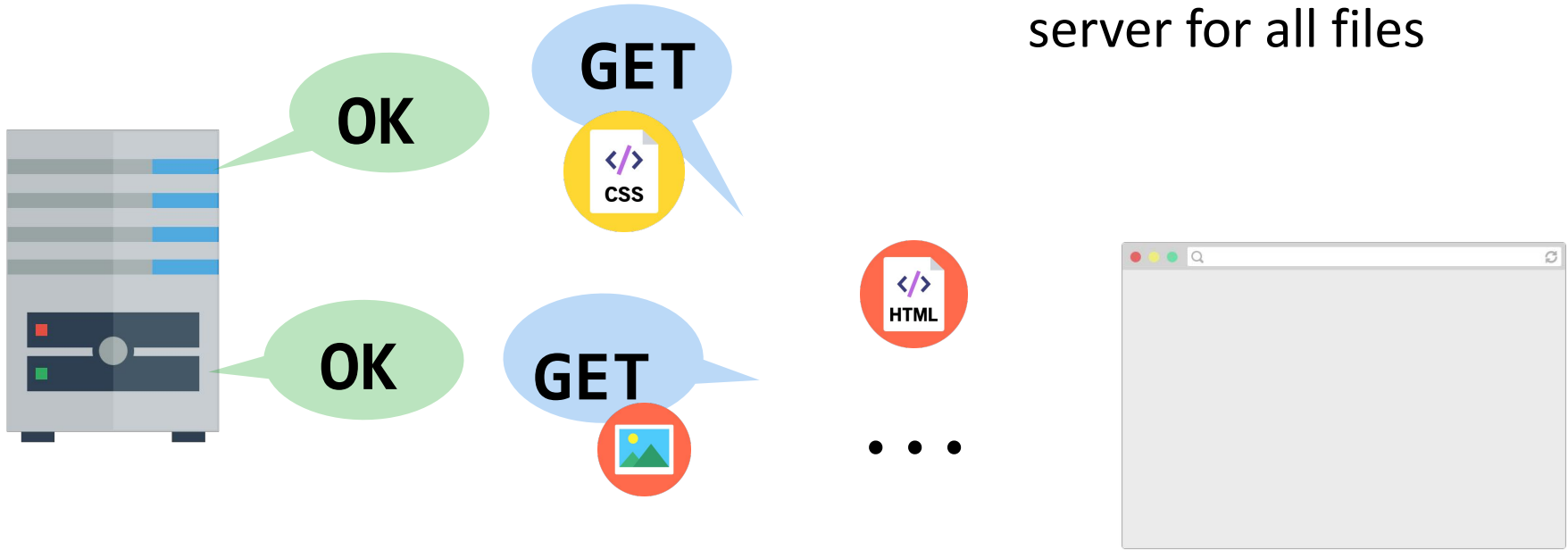
How do web pages work?



3. The web server
responds to the browser

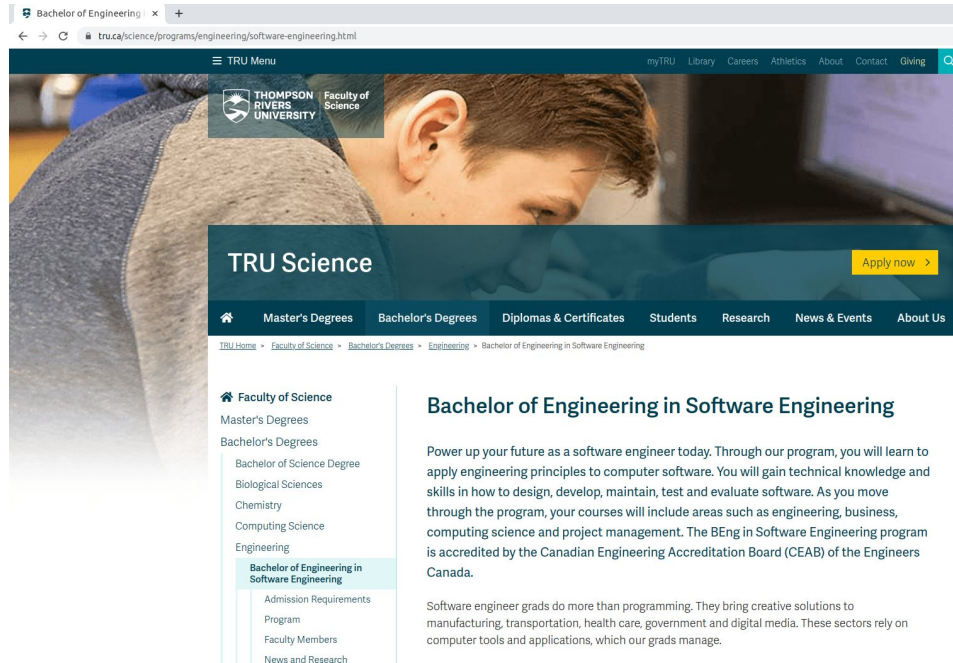
How do web pages work?

4. The browser reads and asks the server for all files



How do web pages work?

5. The web page is loaded when all the resources are fetched and displayed.



P.S.

That was obviously very hand-wavy.

Exercise

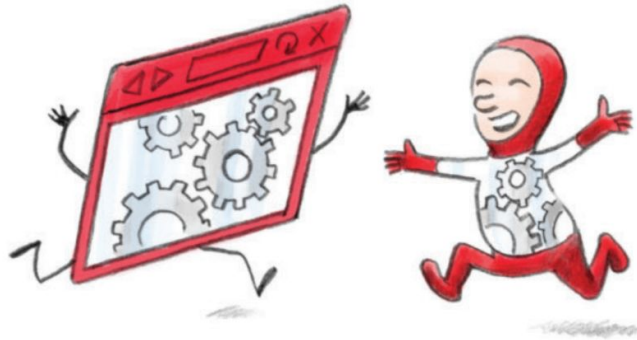
Ready to code?

Open the 'www' directory on your desktop and
click on the 'CODE PEN'

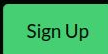
<https://codepen.io/webidsina/pen/OJZENBN>

Ready to code?

Open the 'www' directory on your desktop and
click on the 'Codepen'



Refers to: Worksheet Step 1



HTML

```
1 <!-- Write HTML Here -->
```

CSS

```
1 /* Write CSS Here */
```

JS

```
1 // Write JS here
```

HTML

(HyperText Markup Language)

Describes the content and structure of a web page.



Add a heading

It is made up of building blocks called **elements**.

e.g, you can use `<h1> Heading Text </h1>` to add a heading.

`<h1>Web Programming</h1>`

Refers to: Worksheet Step 2

Add a paragraph

<p> for paragraphs, to make text italic, etc.

<p>

HTML is awesome!!!

</p>

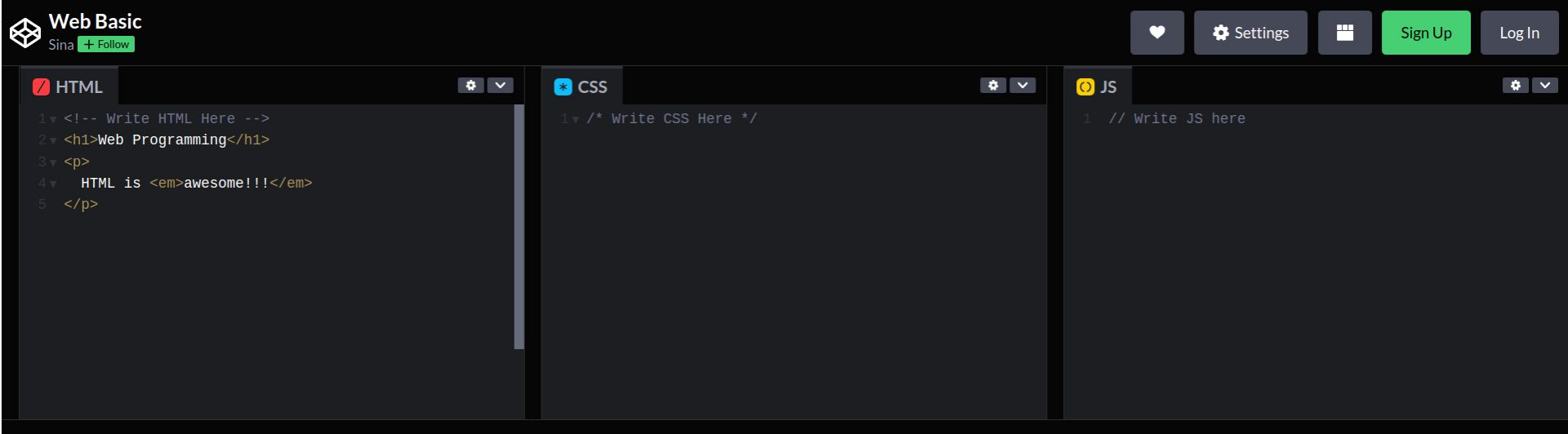
Refers to: Worksheet Step 3

HTML Coding

Write this code in the HTML tab:

```
<h1>Web Programming</h1>
```

```
<p>  
    HTML is <em>awesome!!!</em>  
</p>
```



Web Programming




Add an image

Write this code in the HTML tab:

```

```

Refers to: Worksheet Step 4

Web Basic

Sina + Follow

♥

⚙️ Settings

📄

Sign Up

Log In

HTML

1 <!-- Write HTML Here -->

2 <h1>Web Programming</h1>

3 <p>

4 HTML is awesome!!!

5 </p>

6

CSS

1 /* Write CSS Here */

JS

1 // Write JS here

Web Programming

HTML is awesome!!!



P.S.

We'll turn the light bulb on using JavaScript later

CSS

(**C**ascading **S**tyle **S**heets)

Describes the
appearance and layout of
a web page



CSS - Change the Heading Appearance

Write this code in the CSS tab:

```
h1 {  
  color:red;  
}
```

```
body {  
  text-align:center;  
}
```

Refers to: Worksheet Step 5-6

CSS - Change the Heading Appearance

Write this code in the CSS tab:

```
h1 {  
  color:red;  
}
```

Web Basic

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HTML

```
1 <!-- Write HTML Here -->
2 <h1>Web Programming</h1>
3 <p>
4   HTML is <em>awesome!!!</em>
5 </p>
6 
```

CSS

```
1 /* Write CSS Here */
2 h1 {
3   color:red;
4 }
5
```

JS

```
1 // Write JS here
```

Web Programming

HTML is *awesome!!!*



CSS - Change the Page Appearance

Write this code in the CSS tab:

```
body {  
text-align:center;  
}
```



Web Basic

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HTML



```
1 <!-- Write HTML Here -->
2 <h1>Web Programming</h1>
3 <p>
4   HTML is <em>awesome!!!</em>
5 </p>
6 
```

CSS



```
1 /* Write CSS Here */
2 h1 {
3   color:red;
4 }
5 body {
6   text-align:center;
7 }
8
```

JS



```
1 // Write JS here
```

Web Programming

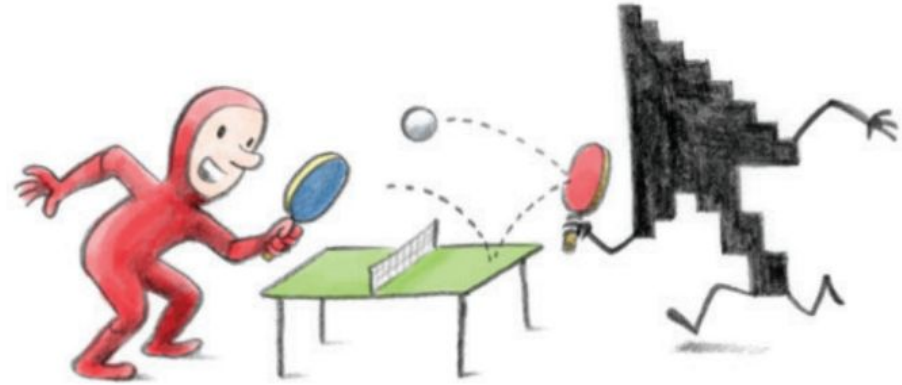
HTML is awesome!!!



JS

(JavaScript)

Empowers user
interaction with web



JavaScript

JavaScript is a programming language.

Browser-native language;
no other options



JS - Change Header Text

Write this code in the JS tab:

```
document.querySelector("h1").innerHTML = "Click to turn it On";
```




HTML



```
1 <!-- Write HTML Here -->
2 <h1>Web Programming</h1>
3 <p>
4   HTML is <em>awesome!!!</em>
5 </p>
6 
```



CSS



```
1 /* Write CSS Here */
2 h1 {
3   color:red;
4 }
5 body {
6   text-align:center;
7 }
8
```



JS



```
1 // Write JS here
2 document.querySelector("h1").innerHTML = "Click
  to turn it On";
```

Click to turn it On

HTML is awesome!!!



JS - Change image

Write this code in the JS tab:

```
function turnOn() {  
document.querySelector('img').src='https://tinyurl.com/4d26vbz5';  
}  
  
document.querySelector('img').addEventListener('click', turnOn);
```

Refers to: Worksheet Step 7



HTML

```
1 <!-- Write HTML Here -->
2 <h1>Web Programming</h1>
3 <p>
4   HTML is <b>awesome!!!</b>
5 </p>
6 
```

CSS

```
1 /* Write CSS Here */
2 h1 {
3   color:red;
4 }
5 body {
6   text-align:center;
7 }
```

JS

```
1 function turnOn() {
2   document.querySelector('img').src='https://tinyur
   l.com/4d26vbz5';
3 }
4
5 document.querySelector('img').addEventListener('c
   lick', turnOn);
6
```

Web Programming

HTML is awesome!!!



The magic behind this?

We're just toggling between two different images!

When you click, the JavaScript code changes the image's src (source) to the other picture's URL.

It's a simple trick: lightbulb-off.jpg ↔ lightbulb-on.jpg

Turn it off?

Web browsers execute the code developed by web developers!

You must write the turn off function.

JS - Condition (if - else)

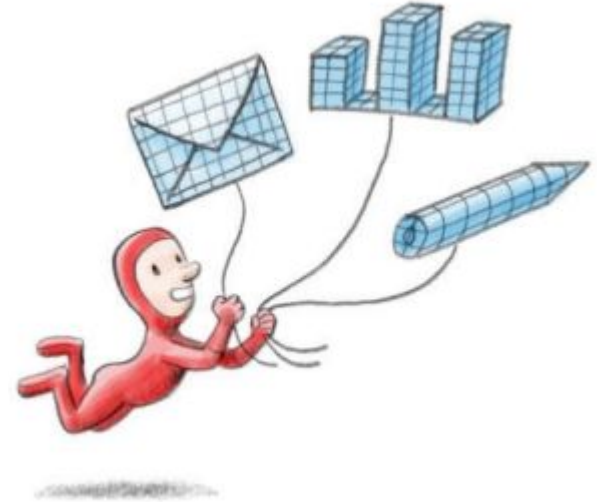
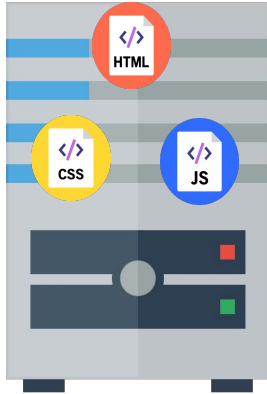
```
function turnOn() {  
    if (document.querySelector('img').src == 'https://tinyurl.com/4d26vbz5')  
    {  
        document.querySelector('img').src = 'https://tinyurl.com/4225uhzk';  
    } else {  
        document.querySelector('img').src = 'https://tinyurl.com/4d26vbz5';  
    }  
}  
document.querySelector('img').addEventListener('click', turnOn);
```

Refers to: Worksheet Step 8

Publish on the Web?!

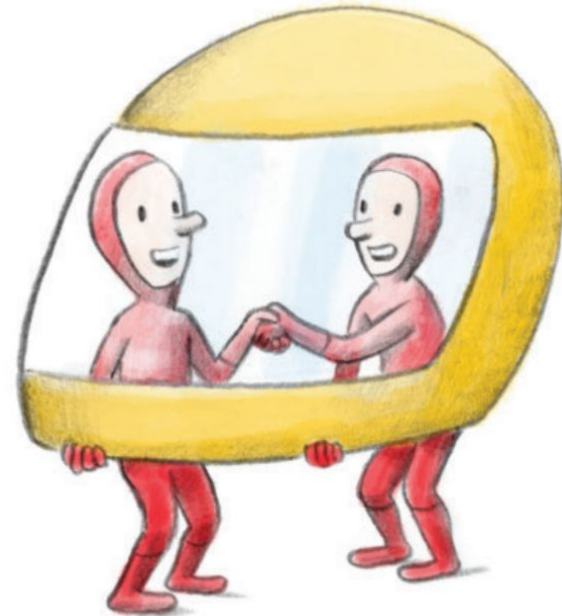
You need to upload your files to a Web server

Home Activity: Deploy Your First WebApp!



Web Developer Career

- The most entrepreneur form
- The Web is here to stay!
- There are three different Web developers
 - Front-end
 - Back-end
 - Full Stack



Web Development @ TRU

We teach both
Full Stack Web Development and
Mobile App Development



Quiz Time!

Join at menti.com | use code 1233 3500



Online Learning Resources

Mozilla

<https://developer.mozilla.org/en-US/docs/Web/Tutorials>

Code Academy:

<https://www.codecademy.com/learn/learn-html>

<https://www.codecademy.com/learn/learn-css>

<https://www.codecademy.com/learn/introduction-to-javascript>

Free Code Camp

<https://www.freecodecamp.org/learn>

Sample Web Pages

The Cube Game:

<https://codepen.io/bsehovac/pen/EMyWVv>

3D Room - Pure CSS

<https://codepen.io/ricardoolivaalonso/pen/mdPzrpe>

Space Spider:

<https://codepen.io/strangerintheq/pen/QWmPzja>

Q/A

Ask any question about Web development, mobile apps, AI, security, the Internet, TRU, Software Engineering, etc.

