

# Bird watch website 1.0

Learn to make a website



# Step 1 Introduction

Learn how to code your first website!

#### What you will make

Build a website like the one in the trinket below.



## What you will learn

- Using an online editor to create a website made up of HTML files and a CSS file
- Building a HTML website that has headings, paragraph text, lists, and images
- Using CSS code to control the look of your website, including designing a simple menu bar and changing colours, backgrounds, and borders
- Linking pages to each other, and linking to other websites
- · Creating a table that includes headings and multiple rows



## What you will need

## Hardware

• A computer capable of accessing trinket.io (https://trinket.io)

#### Software

• This project can be completed in a web browser using trinket.io (https://trinket.io).

# Step 2 Getting set up

Go to the starter trinket (<a href="http://dojo.soy/se-html1-start">http://dojo.soy/se-html1-start</a>). You will see a box containing an example website project. On the right-hand side is the website, and on the left-hand side is the code that makes the website.

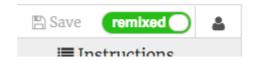


# I have a Trinket account

• Click the **Remix** button at the top right of the project. If you are not signed in, you will be prompted to do so. Once you've signed in, you'll need to click **Remix** again. Clicking this button creates a copy of the project for you to work with.



It should say **remixed** after you click it:



# I don't have a Trinket account

You can save your work by using one of the options in the **Share** menu. You will get a link that you can either save somewhere, for example in a document, or send to someone via email.

Note: each time you make a change, you will get a new link.

If you want to create an account on Trinket, follow the steps below. This will allow you to access your work easily from any computer, and to **remix** projects somebody else has shared with you. Remixing means you will save a copy of a project so you can make your own changes to it.

- Go to the Trinket website (<a href="http://dojo.soy/trinket">http://dojo.soy/trinket</a>) and click Sign Up For Your Free Account. You will need an email address to sign up.
- Enter your email address and choose a password, or ask somebody to do this for you.
- You can now access all your saved or remixed projects by clicking on your username and going to My
  Trinkets.



Let's start coding!

# Step 3 Your first webpage!

- In the left-hand panel, the code panel, click on the tab that says index.html.
- Find the line that says Hello! and change it to your own message be careful **not** to delete the tags at the start of the line and at the end of the line. You should see your webpage update in the right-hand panel.



• Now on the same line, change the and to <h1> and <h1>. Do you notice any change in the result on the right?

<h1>Hello!</h1>



## HTML and tags explained

HTML is the code that makes a webpage.

The . html in the file name tells the browser that the file is a webpage, so the browser knows to look for **tags** telling it what to display. (A browser is the program you use to look at websites, for example Chrome or Firefox.)

HTML tags such as and define different pieces of a page, for example paragraphs, headings, or the body. The pieces are all called **elements**. Think of them as building blocks.

#### Why do I need two tags?

You need an **opening** and a **closing** tag to tell the browser where elements **start** and **end**. So for a paragraph, the opening tag says "Here comes some text that I want you to display as a paragraph." The closing tag tells the browser where the paragraph ends.

Everything in between the <body> and <body> tags is your webpage.

- Notice how the closing tag always has a forward slash /.
- Try changing the numbers in your **heading** tags to see the different sizes they give you. They can go from <h1> all the way up to <h6>. Remember to change both the opening and closing tag so that they match.
- Find the code for the paragraph that says 'This website is about bird conservation.' and change it so that it looks like this:

```
<em>This website</em> is about <strong>bird conservation</strong>.
```

Can you work out what the <em> <em> and <strong> <strong> tags do?



## Challenge: add some more text of your own

• Try adding a new paragraph or heading to your page using some of the tags you've learned about.

#### I need a hint

The code for headings looks like this:

```
<h1>This is a heading.</h1>
```

Headings will normally be displayed bigger or bolder than the paragraphs.

Congratulations, you've built your first webpage! On the next card, you'll find out how to control how it looks.

# Step 4 Controlling how it looks

The code that describes what a website looks like is called **CSS**.

• Look at the tabs at the top of the code panel, and go to the file styles.css by clicking on the tab with that name.

The file contains the following text:

```
body {
   background-color: white;
}
```

 Change the white colour to LightSkyBlue and see what happens. Your website should now have a blue background!





#### How does it work?

If you look at the top of the index.html file, you will see the following line:

```
<link type="text/css" rel="stylesheet" href="styles.css"/>
```

The above line tells the browser to look for a special file named styles.css. This special file is called a **style sheet**. You can recognise a style sheet file by the .css in its name.

A style sheet contains rules for what each element on your webpage should look like.

The curly braces { } and the code in between them are a set of **CSS rules**. The word body means that the rules are for all the <body> elements on your website. We call the bit in front of the curly braces a **selector**. So in this case, it is the selector for the body elements.

Each rule inside the curly braces is made up of:

- A **property** on the left, followed by a colon symbol:
- A value for the property on the right-hand side after the colon
- A semi-colon symbol; at the end
- Lets add rules to change how the text looks. Add two new lines inside the curly braces:

```
body {
  background-color: LightSkyBlue;
  font-family: "Helvetica", sans-serif;
  color: purple;
}
```

• Look at how this has changed the webpage.

The color property is always for text. Here, you are setting the colour of all text in the body of your webpage.

• You can also write separate rules for the headings and the paragraphs. For <h1> headings, you use the h1 selector. Below the closing curly brace containing the CSS rule for the body, add the following code.

```
h1 {
  color: orange;
  font-family: "Times New Roman", serif;
}
```

Your heading text should be orange now, with the paragraph in purple as before.

# **Bird Conservation**

This website is about bird conservation.

Notice how the letters also look different as well as being a different colour? This is because you changed their **font family**. You can find some more fonts **here** (<a href="http://dojo.soy/se-font-families">http://dojo.soy/se-font-families</a>).

- Try adding a set of rules for the <h2> headings, using the h2 selector.
- Why not experiment with different colour combinations for the text and background? There are lots of colours available to use. Find a full list of them **here** (http://dojo.soy/se-color-names).

# Step 5 Adding pictures

Let's add a picture!

• Go to the tab named index.html. Find the <main> tag and type the following above it:

```
<img src="barn-owl.jpg" alt="A barn owl" width="200px" />
```

Here's what the result should look like:

Notice that this tag has extra bits of information inside it. They are called attributes.

• Find the bit of code that says width="200px" and try experimenting with different numbers to see if you can figure out what this attribute does. Don't delete the letters px!



## How the img tag works

Notice that the <img> tag is different from the other tags you've used so far — there is no closing <img> tag. Instead, this tag is **self-closing**: it has > at the end. This is because there is no 'start' and 'end' to an image element like there is for text on the page.

The tag contains **attributes** with extra information:

- The src attribute tells the browser what file to use for the picture.
- The alt attribute is a short description that the browser will show if it cannot display the picture. 'alt' is short for 'alternative'. This text also helps people using a screen reader to know what the picture is.
- The width attribute tells the browser how wide to make the picture. 100px means one hundred pixels, which are the tiny dots that make up what you're seeing on your screen. If you don't include this attribute, the picture will be displayed in its original size.

Now that you know the code to put a picture on your website, you probably want to change the picture, right?

• The first thing you will need is, of course, a picture! You can either use one you've already got on your computer, such as a photograph you took, or you can get one from the internet.



## Getting pictures from the internet

- Search for images of the thing you want a picture of.
- When you find a picture that you like, click on it to open it up full size.
- Then right-click the picture, and select Save Image As.... Be sure you haven't selected Save Link As....

Open Link in New Tab
Open Link in New Window
Open Link in Incognito Window
Save Link As...
Copy Link Address
Open Image in New Tab
Save Image As...
Copy Image
Copy Image Address

- Type a short name in the box provided.
- Before you click **Save**, make a note of which folder your image file will be saved to. You will need to remember this to find the picture later! You can select a specific folder if you wish. When you're sure you'll find the image again, click **Save**.

**Note:** not all images you will find on the internet are free for anyone to use. If you download a picture, you should make sure it is one that you are allowed to use. Find out more about this here:



#### Finding images with permissions to use

Because of copyright law, you cannot use everything you find on the web. Here you will learn how to find images that you can use in your digital making without breaking copyright laws.

#### Understanding copyright law

Copyright law is designed to protect creators of artistic, literary, musical, and dramatic works from having their work exploited or misused. This means that copyright law applies to all manner of materials offline and online, including images and art work.

Anyone who uses a copyrighted work without the owners' permission is guilty of copyright infringement. This is sometimes true even if a lot of things have been changed about the work.

Many images on the internet are protected by copyright. The copyright symbol © does not have to be present in the image for copyright to exist.

If you want to use an image for which you require permission, you will need to obtain permission from all the copyright owners. Otherwise, you can search for images that are free for you to use through Creative Commons licensing.

#### **Creative Commons**

Creative Commons licensing allows the creator of an image to select which permissions they want to give to people to their work for free. With Creative Commons licensing you can give away all rights to your work, or just some of them. There is an online form on the **Creative Commons website** (<a href="https://creativecommons.org/">https://creativecommons.org/</a>) that helps you to figure out exactly which of your rights you want to give away.

Creative Commons licensing makes it easier for people to find images that they have permission to use. On the Creative Commons site, there is a **search tool** (<a href="https://search.creativecommons.org/">https://search.creativecommons.org/</a>) you can use to find images that have a Creative Commons license. Another good place to look for images available under a Creative Commons license is **Wikimedia Commons** (<a href="https://commons.wikimedia.org/wiki/Main\_Page">https://commons.wikimedia.org/wiki/Main\_Page</a>).

Many search engines also feature a way to search for images with a Creative Commons license, so that people can avoid breaking copyright law.

### Searching for images with Google

If you are using Google, follow the instructions below to find an image you can use in your digital making:

- Go to Google Images and type in what you are searching for. Here, we searched for cat fail:
- Click on Search Tools, then Usage Rights, and select Labeled for reuse.
- · Choose an image.
- Double-check whether it is free to use. You can use a reverse image search tool like TinEye (<a href="https://www.tinageraider.com/">https://www.tinageraider.com/</a>) to check for any further usage rights. Here, I copied the image link from the Google search, pasted it into TinEye, and pressed Search. As you can see, the image has been used many times (781!) all over the internet, so it is likely that it is free to use. If in doubt, you should write to the owner and ask for permission.

## Online safety

If you accidentally discover an image you find upsetting (<a href="https://www.thinkuknow.co.uk/11\_13/Need-advice/Things-you-see-online/">https://www.thinkuknow.co.uk/11\_13/Need-advice/Things-you-see-online/</a>), close your browser immediately and tell an adult.

Once you have a picture, you can **upload** the file to Trinket:

• In your trinket, click on the **image** icon next to the + sign.

This is where you can see the pictures that you are able to use on your website. You should see the picture of the barn owl.

- Click the button Add Image and then click Upload.
- Click on the button Click To Select Files. Find and double-click your image file in the window that opens.
- Click Done.

Your picture will be uploaded and should be ready to use.

• Go to the file index.html and find the <img> tag. Change the text barn-owl.jpg so that it exactly matches the name of the image file you've chosen. Note that its name might end in .png instead of .jpg!

The text you just changed is the attribute called src, which tells the browser which file to display.

Note: the value you type for an attribute must have quotation marks "" around it!

#### Challenge: change the alt text of the picture

Find the alt attribute of your image element and change the text in it to a short description of your picture.

# Step 6 Adding a map or video

YouTube provides an easy way to add its videos to your website. Adding elements from other online sources to your website is also called **embedding**.

- Find a video on YouTube that you want to show on your website.
- Click on the **Share** button below the video. Select the option **Embed**.

You will see a text box with all the text selected. If you accidentally unselect the text, you can select it all again by clicking on it and pressing the Ctrl (or cmd on a Mac) and A keys at the same time.

- Press the Ctrl (or cmd on a Mac) and C keys together to copy the text.
- Then go back to your website's HTML code, and click in the place where you want to put the video, for example below a heading or paragraph. **Paste** the code by pressing Ctrl (or cmd on a Mac) and V on your keyboard at the same time. Don't worry about understanding all the code you just pasted!

You should see the video appear on your webpage.

The same technique works for Google maps as well. Give it a go!

- Go here (<a href="http://dojo.soy/se-maps">http://dojo.soy/se-maps</a>) and search for a place you want to show on your website. Note: do not share personal information such as your home address on a website!
- Click on the result, then click the **Share** button, and copy the code and add it to your website as above.
- If you look carefully, you should find width and height attributes in the pasted code. You can change their values to make the map appear bigger or smaller.

# Step 7 Making a list

Now you will learn how to turn a list of items, such as "unicorns, robots, cats", into a nicer-looking list that you can do cool things with later.

• In the index.html file, add the following code just above the line with <main> on it:

```
    Barn owl
    Hen harrier
    Yellowhammer
    Curlew
```

The result should be a nice list like this:

Notice that there is a separate pair of tags around each item in the list.

This is a list of some protected birds in Ireland. You can change the items on the list to things that make sense for your website, and add a paragraph above the list to describe what it's a list of, if you like!

How about if you wanted a numbered list? It's almost the same, but instead of ul>, you use A numbered list is also called an **ordered** list.

• Add the following code below the code you just wrote — make sure it's **below** the

```
 Threats to birds:

    Habitat destruction
    Pollution
    Climate change
```

Here's what it should look like now:

## Challenge: add style to your lists

• See if you can add **CSS rules** to your stylesheet to change how your lists look.

# Step 8 Creating links

On this card you'll learn how to make a link that takes you to another page when it's clicked.

Add the following code to the body section of index.html:

```
<a href="">Click here</a>
```

The  $\langle \alpha \rangle \vee \alpha \rangle$  tags turn whatever is in between them into a link.

• Try clicking your link to see what happens. It does nothing, right?

That's because the href attribute is empty at the moment. It needs to contain the **URL** (web address) of the page that you want to link to.

- Go to Wikipedia and find a page about something on your website. I'm going to use the page about bird conservation.
- Click in the address bar and select all of the text in i5. That's the complete URL of the page you're on. Press the Ctrl (or cmd) and C keys at the same time to copy it.
- In your trinket, click in between the quotation marks after href= and press the Ctrl (or cmd) and V keys at the same time to paste in the URL you just copied. Your code should look something like this now:

```
<a href="https://en.wikipedia.org/wiki/Bird_conservation">Click here</a>
```

You just created your first link! Click on it to see if it works now.



## Links to other websites

Trinket has trouble with some web addresses. You can try URLs of websites other than Wikipedia if you like, but they may not work in your trinket. However, if you were to download your project and view the files in a web browser, you would see the links working.

• Try putting a picture in between the  $<\alpha>$   $<\alpha>$  tags instead of the words Click here, like this:

• Click on your picture. Do you see that it was turned into a link?

You can put a link into other elements of your webpage too, such as in a paragraph or even in a list. Here is an example of a sentence with a link in it:

```
<a href="https://en.wikipedia.org/wiki/Bird_conservation">Click here</a> to read about bird conservation on Wikipedia.
```

## Challenge: put a link into a list

• See if you can make a list that contains a link inside one of the list items.

#### I need a hint

In the following list, the 'Hen harrier' list item has been turned into a link.

```
    Barn owl
    a href="https://en.wikipedia.org/wiki/Hen_harrier">Hen harrier
    Yellowhammer
    Curlew
```

# Step 9 Adding more pages

This card will show you how to add more pages to your website.

• At the top of the code panel, click on the + symbol next to the tabs, and type in a name for your new file. It must end in .html (including the dot!) so that the browser knows it's a webpage.



#### Renaming or deleting a file

If you want to change the name of a file, click on the **cog** icon to the right of the file name, and then click the **pencil** icon. Type in the new name and press **Enter**. You can also delete a file by clicking the **bin** icon instead of the **pencil** icon.

You might be wondering why you can't change the name of the index.html file. index.html is a special name used for the **homepage** of a website. That's the first page you land on when you visit a website. Whenever you go to a website's homepage, the browser looks for the file called index.html and displays it on your screen.

- Find the file template.html and copy and paste all of the code from it into your new file. Since you want to copy the whole thing, you can click anywhere on the code and use the keyboard shortcut Ctrl (or cmd) and A to select all of it at once.
- Change the text in between the <title> <title> tags so your new page has a suitable title. Trinket won't display the title, but you can see it at the top of your browser window if you download your project.
- In between the <main> <main> tags in the new file, use the tags you have learned about to add stuff to the page, such as paragraphs, headings, images, and lists!
- Repeat the steps above for each new page that you want to add.

When there are too many tabs for Trinket to show at once, you can use the < and > icons in the top left-hand corner of the tabs to scroll between them.

Now you need to make links so that you can get to each of your new pages! Let's put all the links in a list.

• In the index.html file, add the following code to the body of your webpage:

```
    <a href="index.html">Home</a>
    <a href="birds.html">Protected Birds</a>
    <a href="conservation.html">Conservation</a>
    <a href="sanctuaries.html">Bird Sanctuaries</a>
```

- Change the value of the href attribute for each link (remember, that's the text inside the quotation marks) so that it exactly matches the name of each HTML file that you have created.
- Change the text in between the  $\langle \alpha \rangle$   $\forall \alpha \rangle$  tags to suitable descriptions of your pages.

Now you can navigate to your new pages!

# Step 10 Navigating your website

Many websites have a **navigation** menu to help visitors move between pages. Now that you've got a bunch of pages, a homepage, and links to each page, let's move the list of links to a navigation section at the top of every page.

- Find the code for your list of links that you created in the previous step.
- Just before the opening 
   tag, press Enter to create a new blank line, then on the new line type the following tag: <nαν>. Trinket automatically adds the closing tag right after, but you can delete that it's not in the right place.
- Just **after** the closing 
   tag, press **Enter** to create a new blank line, and type in the closing tag <nαν>
   there.
- Now select your entire <nαv> section and list by clicking just before the opening <nαv> tag and dragging the mouse all the way down to just after the closing <nαv> tag, so that all of the text including the opening and closing tags becomes highlighted. Make sure all of the angle brackets < and > at the start and end are highlighted as well!
- You are going to **cut** this time instead of copying. Hold down the **Ctrl** (or **cmd**) key, and while holding it, press the **X** key. The highlighted code will disappear, but don't panic!
- At the top of the file, click in the space between the <header> <header> tags. Make sure you see the cursor flashing there. Now paste in the code by pressing Ctrl (or cmd) and V as usual. The code should look something like this:



## Undo!

If you make a mistake, you can **undo** it by pressing Ctrl (or cmd) and Z together. You can usually press this key combination a few times to undo the last few changes. This is another handy keyboard shortcut that you can use in many programs!

• Try out your links to make sure they are still working.

### Challenge: navigation menus for all pages

• Put this code section into the header section of each HTML file that you've created. This will make the navigation menu appear at the top of every page on your website.

## I need a hint

Select the entire <nav> section like you did before, and press the Ctrl (or cmd) and C keys together to copy it.

Then, in each of your .html files, click inside the <header> <header> <header> section and paste the code exactly like you did earlier.

Now you will be able to click the links no matter which page you are on.

# Step 11 Making a menu bar

On this card you will see how you can transform your navigation menu into a cool-looking menu bar, just by adding more CSS rules in the style sheet.

• Go to the style sheet file in the styles.css tab. Click **below** a closing curly brace }, and press **Enter** to create a new blank line. Add the following CSS rule:

```
nav ul {
   background-color: tomato;
}
```

Notice how you used two selectors instead of one? If you used the ul selector on its own, the rule would affect all unordered lists on your website. Adding the nav selector as well makes it only apply to lists that are in between nav tags.

Let's get rid of the bullet points. Those are the dots in front of each list item.

• Add the following to the styles.css file. Again, type it on a new line after a } so it's not inside any other block of rules.

```
nav ul li {
    list-style-type: none;
}
```

Notice this set of rules has three selectors: it selects all li elements that are in a ul list which is inside a nav section. Phew!

Now let's make the list horizontal (across) instead of vertical (down).

- Inside the new CSS rule you just created, add the following line: display: inline;.
- The menu items are now all squashed together, so let's also add the properties margin-right and margin-left to space them out a bit. The block of CSS code should look like this now:

```
nav ul li {
    list-style-type: none;
    display: inline;
    margin-right: 10px;
    margin-left: 10px;
}
```

Remember: 10px means ten pixels.

How about making the menu change to tell you which page you are on? This part won't be in the style sheet.

• Start with the homepage. Go to the index.html file. In the list of menu links, remove the link tags before and after the word Home, so that the list item for the homepage is just text in between tags, like this: Home

• Now go to each of your other files, and do the same thing, each time removing the link tags for the page you are editing. So, for example, on the birds.html file, I've removed the link tags in the Protected Birds list item:

• Explore your pages by clicking the links. See how the menu bar shows the page you're on as plain text instead of a link?

On the next card you'll learn even more CSS tricks to make the menu bar look awesome.

# Step 12 Styling the menu bar

With CSS, the possibilities for making your menu bar look great are endless.

- Move to the styles.css file again the place where the cool stuff happens!
- Find your nav ul selector, and add more rules so that it looks like this:

```
nav ul {
  background-color: tomato;
  border-style: solid;
  border-color: MediumVioletRed;
  border-width: 2px;
  padding: 10px;
}
```

The padding property adds space. Can you work out what each of the other properties do? Try experimenting with different colours and numbers of pixels.

• To get rid of the underlining of the links, add the following code on a new line after the closing curly brace } for the nav ul li rules. You could put it after any }, but it's a good idea to keep related stuff together so it's easier to find!

```
nav ul li a {
   text-decoration: none;
}
```

The above rule applies to links  $<\alpha>$  inside list items <1i> in an unordered list <u1> inside a navigation section  $<n\alpha v>$ . Wow, that's four selectors!

Remember how you removed the link tags from some list items in the  $< n\alpha v >$  so you can easily see what page you're on? Why not also change the text colour of those navigation list items which are not links!

• Find your nav ul li selector, and **inside** the curly braces add the line:

```
color: PapayaWhip;
```

You can choose any colour you like!

You can add the color property to the  $n\alpha v$  ulliar rule as well if you want the menu links to be a different colour from other links on your website.

• How about some rounded corners for your menu? Try adding the following code to the nav ul rule to see what happens: border-radius: 10px;.

The border-radius property is a really easy way to make anything look cooler!

## Challenge: make your pictures have rounded corners

• In your style sheet, create a new set of rules for pictures using the img selector, and add in a border-radius rule there.

## Step 13 Adding a table

Sometimes it can be useful to show information in a table. For example, you might want to list member information on a website for a local sports club or school, or information about your top ten favourite songs.

A table is a grid made up of **rows** and **columns**. Most tables also include titles at the top of each column, called the **header**. Here's an example:

- Go to the file page\_with\_table.html. There you will see a bunch of code in between tags.
- Select all of the code from the start of the tag to the end of the closing tag and copy it.

  Then go to one of your files where you would like to put a table, and paste in the code.

At the moment your table is empty.

• Have a go at filling your table with anything you like! Simply put text in between the tags and in between the tags. You can add more tags if you need them.



#### Example code

The HTML code for the table shown above looks like this:

```
Name
  Location
  Birds found there
 Skellia Michael
  Island off coast of Kerry
  Puffins
 Bird Island
  Strangford Lough
  Cormorants
 Burren Birds of Prey Centre
  County Clare
  Various birds of prey including eagles, hawks, owls and falcons
```

To add another **row**, add another set of <tr> <tr> tags. In between them, you put the same number of **data** items with <td> <td> tags as you have in the other rows.



### How does it work?

Let's have a look at all those tags. It's a bit like the code for a list (remember 
 and 
 but with more

Each pair of tags is a row, so everything in between them will be displayed on one line.

The first row contains tags. These are used for the headers, so the column titles go in between them. There is one pair for each column you have in your table.

The tags define what's called table data, and that's what goes in all the other rows. These are similar to the list item tags <1i> <1i>: everything in between them is one item in your table row.

• If you look at the end of the styles.css file, you will see the CSS code that describes how the table should look. You don't have to understand all of it! But you can experiment with changing the text, border, and background colours to design your own style.

```
table, th, td {
  border: 1px solid HoneyDew;
  border-collapse: collapse;
}
tr {
  background-color: PaleTurquoise;
}
th, td {
  vertical-align: top;
  padding: 5px;
  text-align: left;
}
th {
  color: purple;
}
td {
  color: purple;
}
```

Notice how some of the selectors use commas, for example table, th, td? That's a **list of selectors**: it means it applies to all elements and all elements. It saves typing out the same set of rules for each selector!

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View project & license on GitHub (https://github.com/RaspberryPiLearning/cd-sebento-htmlcss-1)