

Sprint 01
Web Frontend Basic

June 17, 2021

uicode

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Engage



DESCRIPTION

Welcome to the world of web development!

In this **Sprint** you will gain some fundamental knowledge of HTML and CSS. You'll find out how these two languages build web pages together, and how exactly they interact.

You'll write your own web pages using HTML and CSS. They are the basic building blocks of web development.

Let's get to work!

BIG IDEA

The World Wide Web.

ESSENTIAL QUESTION

How to make web pages?

CHALLENGE

Start learning web technologies.



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Investigate



GUIDING QUESTIONS

We invite you to find answers to the following questions. By researching and answering them, you will gain the knowledge necessary to complete the challenge. To find answers, ask the students around you and search the internet. We encourage you to ask as many questions as possible. Note down your findings and discuss them with your peers.

- What was the first website in the world?
- What elements does a web page consist of?
- How are the main elements of a web page positioned?
- What is HTML?
- What does a HTML tag consist of?
- What is the basic structure of an HTML document?
- Are all web pages written in HTML?
- Is there a difference between HTML and HTML5?
- What are the new features of HTML5?
- What is the role of CSS?
- How is CSS processed by the browser?
- What is a URL and what does it contain?
- Why is HTTP an important part of the WWW?
- How do browsers render web pages?
- What happens during a web page request?
- What types of website layouts do you know?
- What is a hover effect?
- What is a drop-down menu?
- What is the difference between a combo box and a drop-down list?
- How does breadcrumb navigation work?
- What is the benefit of using Grid Layout?
- What are microformats? Why are they worth using?
- What is the difference between a pseudo-element and a pseudo-class in CSS?

GUIDING ACTIVITIES

Complete the following activities. Don't forget that you have a limited time to overcome the challenge. Use it wisely. Distribute tasks correctly.

- Open several random websites.
- Analyze the markup elements that you see.



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- Find out how to link CSS to HTML.
- Find informative resources with HTML and CSS documentation.
- Create a file and type "Hello World" using the tag for `h1`.
- Save it as `helloworld.html`.
- Open the saved HTML file in a browser.
- Research top technical and non-technical skills of a frontend developer.
- Learn how to achieve cross-browser compatibility.

ANALYSIS

Analyze your findings. What conclusions have you made after completing guiding questions and activities? In addition to your thoughts and conclusions, here are some more analysis results.

- Be attentive to all statements of the story. Examine the given examples carefully. They may contain details that are not mentioned in the task.
- All tasks are divided into `Act Basic` and `Act Advanced`. You need to complete all basic tasks to validate the `Sprint`. But to achieve maximum points and more knowledge, consider accomplishing advanced tasks also.
- Analyze all information you have collected during the preparation stages.
- Complete the `Document` section while developing a challenge. It is described after the `Act` section.
- Perform only those tasks that are given in this document.
- Submit only the specified files in the required directory and nothing else. Garbage shall not pass.
- Pay attention to what is allowed. Use of forbidden stuff is considered a cheat and your challenge will be failed.
- Complete tasks according to the rules specified in the [Google HTML/CSS Style Guide](#). But, as per section [3.1.7 Optional Tags](#), it doesn't apply. Do not omit optional tags, such as `<head>` or `<body>`.
- For your convenience, we advise you to check solutions in a [HTML validator](#).
- The solution will be checked and graded by students like you. [Peer-to-Peer learning](#).
- Also, the challenge will pass automatic evaluation which is called `Oracle`.
- If you have any questions or don't understand something, ask other students or just Google it.



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Act Basic: Task 00

NAME

Welcome, heroes!

DIRECTORY

t00_welcome_heroes/

SUBMIT

index.html, assets/images/t00.png

ALLOWED

HTML

BEFORE YOU BEGIN

You need to understand basic structure of an HTML document. Example can be found [here](#). And minimal description can be found [here](#).

DESCRIPTION

Create an HTML page. Take a look at the **EXAMPLE** image as a reference of what your web page must look like.

The web page must contain:

- a document type declaration: `<!doctype html>`
- `<html>` in the beginning of the document
- `</html>` in the end of the document
- a **level-1 heading** "Superhero trivia" (aligned to the center)
- three level-2 headings with the titles "What makes a superhero?", "Top superheroes", "My favorite superhero"
- some text about superheroes that (you can find the text in this **article** - the first paragraph)
 - uses the `<p>` tags
 - follows the first `h2`
 - contains a **link**
 - contains a segment in bold, and a segment in italics
 - is separated by line break



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- an ordered list with four items (superhero names) following the second h2
- an unordered list with three items (sidekicks/allies of one of the superheroes) inside the 2nd item of the ordered list
- an image of a superhero of your choice following the third h2
- the name of that superhero and a short description following the image
- an anchor link to the first h2

All visible parts of the document are wrapped inside `<body>` tags.

Check your web page using an [HTML validator](#).



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EXAMPLE

Superhero trivia

What makes a superhero?

A superhero is a person who does heroic deeds and has the ability to do them in a way that a normal person couldn't. So in order to be a superhero, you need a power that is more exceptional than any power a normal human being could possess, and you need to use that power to accomplish good deeds. Otherwise, a policeman or a fireman could be considered a superhero. For instance, a good guy fighting a bad guy could be just a regular police story or detective story or human-interest story. But if it's a good guy with a superpower who is fighting a bad guy, it becomes a superhero story. If the good guy is doing something that a normal human being couldn't do, couldn't accomplish, then I assume he becomes a superhero.

Article on superheroes at [OUP blog](#)

Top superheroes

1. Superman
2. Batman
 - o Robin
 - o Alfred
 - o Batgirl
3. Captain America
4. Hulk

My favorite superhero



Batman

After witnessing the brutal murder of his parents, billionaire Bruce Wayne dedicated himself to purging Gotham City of evil. Spending years training his mind and body to perfection, he declared war on all crime in Gotham and became The Dark Knight, Batman.

[Anchor to "What makes a superhero?"](#)

SEE ALSO

[HTML: Hypertext Markup Language](#)
[HTML for beginners](#)

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Act Basic: Task 01

NAME

Infinity table

DIRECTORY

t01_infinity_table/

SUBMIT

index.html, assets/images/*

ALLOWED

HTML

DESCRIPTION

Create an HTML web page with a `table` filled with information about the Infinity Stones. There are four columns in the table:

- Name
- Color
- Powers and capabilities
- Image

There are eight rows:

- header row with column titles
- six regular rows, one per each stone
- footer row with a link to a Wikipedia page about the Infinity Stones

Use the [EXAMPLE](#) image for a reference of how your web page must look like.

Don't worry about having identical text in the 'Powers and capabilities' column. As long as your text is similar in length, it's fine. Use the images available in resources.



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EXAMPLE

The Infinity Stones

Name	Color	Powers and capabilities	Image
Soul	Orange	Allows the user to steal, control, manipulate, and alter living and dead souls. The Soul Gem also acts as a gateway to an idyllic pocket universe. At full potential, when backed by the Power Gem, the Soul Gem grants the user control over all life in the universe.	
Time	Green	Allows the user to see into the past and the future; stop, slow down, speed up or reverse the flow of time; travel through time; change the past and the future; age and de-age beings, and trap people or entire universes in unending loops of time. At full potential, when backed by the Power Gem, the Time Gem grants the user omniscience and total control over the past, present, and future.	
Space	Blue	Allows the user to exist in any location; move any object anywhere throughout reality; warp or rearrange space; teleport themselves and others; increase their speed, and alter the distance between objects contrary to the laws of physics. At full potential, when backed by the Power Gem, the Space Gem grants the user omnipresence.	
Mind	Yellow	Allows the user to enhance their mental and psionic abilities and access the thoughts and dreams of other beings. At full potential, when backed by the Power Gem, the Mind Gem can access all minds in existence simultaneously. The Mind Gem is also the manifestation of the universal subconscious.	
Reality	Red	Allows the user to fulfill their wishes, even if the wish is in direct contradiction with scientific laws, and do things that would normally be impossible. At full potential, when backed by the other five Gems, the Reality Gem allows the user to alter reality on a universal scale and also create any type of alternate reality the user wishes.	
Power	Purple	Allows the user to access and manipulate all forms of energy; enhance their physical strength and durability; enhance any superhuman ability; and boost the effects of the other five Gems. At full potential, the Power Gem grants the user omnipotence.	

marvelcinematicuniverse.fandom.com/wiki/Infinity_Stones

SEE ALSO

[HTML Tables](#)
[Marvel:Infinity Stones](#)



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Act Basic: Task 02

NAME

Infinity style

DIRECTORY

t02_infinity_style/

SUBMIT

index.html, style.css, assets/images/*

ALLOWED

HTML, CSS

DESCRIPTION

Create a CSS file that adds style to the table that you have created about the Infinity Stones. Use the HTML file you have from the previous task.

Now that you have a table ready, add some style to it! Image height must be 120px. The resulting web page must look identical to the EXAMPLE image. Pay attention to colors, borders, alignment, font weight, etc.

Feel free to change your HTML file if you need to.

While working on your CSS file, play around and change colors and shapes using browser developer tools.



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EXAMPLE

The Infinity Stones

Name	Color	Powers and capabilities	Image
Soul	Orange	Allows the user to steal, control, manipulate, and alter living and dead souls. The Soul Gem also acts as a gateway to an idyllic pocket universe. At full potential, when backed by the Power Gem, the Soul Gem grants the user control over all life in the universe.	
Time	Green	Allows the user to see into the past and the future; stop, slow down, speed up or reverse the flow of time; travel through time; change the past and the future; age and de-age beings, and trap people or entire universes in unending loops of time. At full potential, when backed by the Power Gem, the Time Gem grants the user omniscience and total control over the past, present, and future.	
Space	Blue	Allows the user to exist in any location; move any object anywhere throughout reality; warp or rearrange space; teleport themselves and others; increase their speed, and alter the distance between objects contrary to the laws of physics. At full potential, when backed by the Power Gem, the Space Gem grants the user omnipresence.	
Mind	Yellow	Allows the user to enhance their mental and psionic abilities and access the thoughts and dreams of other beings. At full potential, when backed by the Power Gem, the Mind Gem can access all minds in existence simultaneously. The Mind Gem is also the manifestation of the universal subconscious.	
Reality	Red	Allows the user to fulfill their wishes, even if the wish is in direct contradiction with scientific laws, and do things that would normally be impossible. At full potential, when backed by the other five Gems, the Reality Gem allows the user to alter reality on a universal scale and also create any type of alternate reality the user wishes.	
Power	Purple	Allows the user to access and manipulate all forms of energy; enhance their physical strength and durability; enhance any superhuman ability; and boost the effects of the other five Gems. At full potential, the Power Gem grants the user omnipotence.	

marvelcinematicuniverse.fandom.com/wiki/Infinity_Stones

SEE ALSO

<table>: The Table element



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Act Basic: Task 03

NAME

Super search

DIRECTORY

t03_super_search/

SUBMIT

index.html, style.css

ALLOWED

HTML, CSS

DESCRIPTION

Use HTML and CSS to create a search form.

There must be a heading, a space for the search query, and a clickable button "Find".
The search field must have some placeholder text.

Style requirements for the search text and the "Find" button:

- text color (don't worry about the color of the placeholder text)
- normally green
- red on hover
- 10px horizontal padding
- 2em height

The input field and the button must be in the same row, with the button to the right of the input.

The width of the button depends on the length of its text ("Find"). The width of the input takes up all the space left available.

See the [EXAMPLE](#) image for more reference of what your web page will look like.



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**EXAMPLE**

Default appearance

Super-Search engine

Search for any character, power, secret identity

FIND

Writing text into the input

Super-Search engine

FIND

Hover over input

Super-Search engine

FIND

Hover over the button

Super-Search engine

FIND

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Act Basic: Task 04

NAME

Superhero cards

DIRECTORY

```
t04_superhero_cards/
```

SUBMIT

```
index.html, style.css, assets/images/*
```

ALLOWED

HTML, CSS

DESCRIPTION

Create a web page with a list of superheroes using HTML and CSS. The list will look like a set of cards with different superheroes. Each card is a gradient-filled rectangle with the superhero's image, alias, and real name. A card has

- 270px width
- 140px height
- 5px border radius
- Verdana font for text

Write the superhero alias in white and size 12px, and the real name in `rgba(255, 255, 255, 0.5)` and size 9px.

Images of the superheroes must have a height of 182px. The position of the images must be relative to their blocks, and have the bottom edge position adjusted higher by 47px (or 25px for Spider-Man).

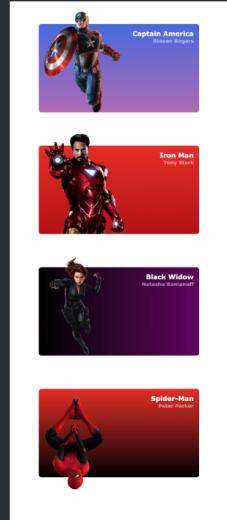
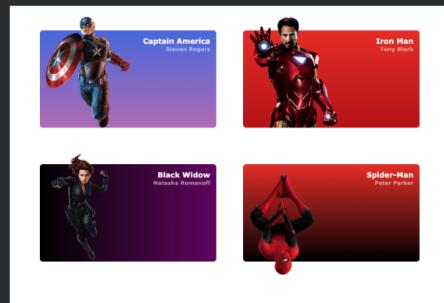
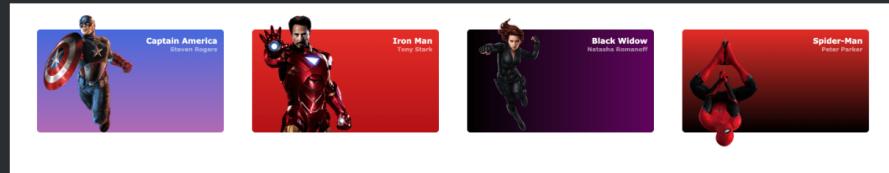
Each superhero has different colors for the gradient background:

- Captain America: from `#4568DC` to `#B06AB3`
- Iron Man: from `#e52d27` to `#b31217`
- Black Widow: from `#000` to `#61045F`
- Spider-Man: from `#e52d27` to `#000`

Make sure that when resizing the window, the blocks rearrange and move to the next row (nothing breaks). See the EXAMPLE images.
Use the images available in resources.



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**EXAMPLE****Sprint 01 | Web Frontend Basic > 15****ucode**



Act Basic: Task 05

NAME

Get into position!

DIRECTORY

t05_get_into_position/

SUBMIT

index.html, style.css

ALLOWED

CSS

DESCRIPTION

Create a CSS file for the HTML page written in the **SYNOPSIS**. Put the provided content in the `index.html` and don't change it.

The contents of the web page must look identical to the **EXAMPLE** image. Use bold "Arial" font in size 4em.

Don't use any images or photos.

SYNOPSIS

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <title>Get into position!</title>
  <meta name="description" content="t05. Get into position!">
  <link rel="stylesheet" href="style.css">
</head>

<body>
  <h1><span>DEADPOOL</span></h1>
</body>

</html>
```



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**EXAMPLE**

DEADPOOL

SEE ALSO

[Codepen online code editor](#)
[JSFiddle code editor](#)

The ucode logo, featuring the word "ucode" in a white, lowercase, sans-serif font. The letter "u" is preceded by a teal square.

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Act Basic: Task 06

NAME

Turn around...

DIRECTORY

t06_turn_around/

SUBMIT

index.html, style.css, assets/images/*

ALLOWED

CSS

DESCRIPTION

Create a CSS file for the web page available in the **SYNOPSIS**. Put the provided content in the `index.html` and don't change it.

The web page contains an image. Create a hover effect for the image so that it rotates by 30 degrees.

There is an illustration for the effect in the **EXAMPLE** section.

SYNOPSIS

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <title>Turn around...</title>
  <meta name="description" content="t06. Turn around...">
  <link rel="stylesheet" href="style.css">
</head>

<body>
  
</body>

</html>
```



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**EXAMPLE****uicode****Sprint 01 | Web Frontend Basic > 19**

**SEE ALSO**

[Turn around
rotate\(\)](#)

The ucode logo, featuring the word "ucode" in a white, sans-serif font. The letter "u" is preceded by a teal square.

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Act Basic: Task 07

NAME

Infinity Gauntlet

DIRECTORY

```
t07_infinity_gauntlet/
```

SUBMIT

```
index.html, style.css, assets/images/*
```

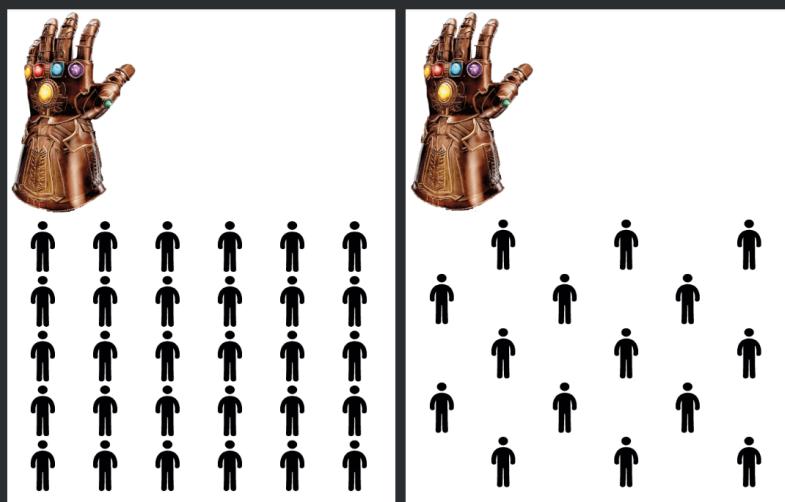
ALLOWED

HTML, CSS

DESCRIPTION

Create a web page with five rows of person-shaped icons (six people in each row). Add The Infinity Gauntlet at the top. When hovering over The Infinity Gauntlet, every other person disappears.

EXAMPLE



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**SEE ALSO**

Pseudo class nth-child



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Act Basic: Task 08

NAME

X-Menu

DIRECTORY

t08_x_menu/

SUBMIT

index.html, style.css

ALLOWED

HTML, CSS

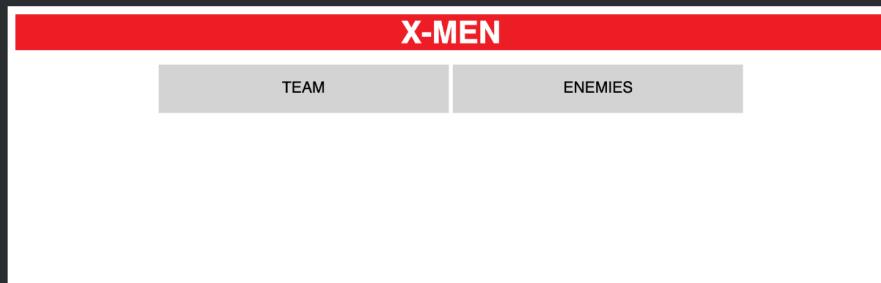
DESCRIPTION

Create a web page with a drop-down menu using HTML and CSS. The menu has 2 first level items that each have at least 2 second level ones, that, in turn, each have at least 2 third level items.

Make your menu fun and exciting. There is an [EXAMPLE](#) available. However, don't copy the text and style of the menu, make it your own.

EXAMPLE

Normal menu appearance



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The screenshot shows a dark-themed web application interface. At the top right is a large teal chevron icon pointing right. Below it is a navigation bar with the title "X-MEN" in white. The bar has two tabs: "TEAM" (highlighted in red) and "ENEMIES". Under "TEAM", there are two items: "LEADERS" and "MEMBERS". A tooltip above the "TEAM" tab says "Hover over a first-level menu item". Below the navigation bar, there is a main content area with a heading "X-MEN". Under "TEAM", there are two items: "TEAM" (grayed out) and "ENEMIES" (highlighted in red). Under "ENEMIES", there are three items: "BROTHERHOOD OF MUTANTS", "MAGNETO", and "OTHER". Under "OTHER", there are three items: "MYSTIQUE", "QUICKSILVER", and "QUIKSILVER". A tooltip above the "ENEMIES" tab says "Hover over a second-level menu item".

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Act Basic: Task 09

NAME

Handbook

DIRECTORY

t09_handbook/

SUBMIT

index.html, style.css

ALLOWED

HTML, CSS

BEFORE YOU BEGIN

You need to understand how to work with a [Media Query](#).

DESCRIPTION

Create a Handbook on a single web page. This handbook will contain useful information about HTML, CSS, and Web Protocols.

Implement adaptive layout for different devices, with screen width points at 320, 768 and 1024.

Use `display: grid` in your implementation. Each section must be a grid. Pay close attention to the screenshots in the [resources](#) to understand how to organize the layout of your grids (the layout will be same in the first two sections, and different in the last).

Sections:

- contents of the web page (1 topic - 1 horizontal block) with links to topics and subtopics
- topic HTML - with minimum 4 subtopics of your choice
- topic CSS - with minimum 4 subtopics of your choice
- topic Protocols - with subtopics mentioned below

Each subtopic of HTML and CSS contains:

- a short description
- code example
- view example



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The topic of Protocols contains:

- a description
- HTTP/HTTPS – describe each method and all classes of response status codes
- DNS – describe all kind of records
- IP – how to determine an IP address (e.g. google.com, google.com.ua, ucode.world)

SEE ALSO

[Grid](#)



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Act Basic: Task 10

NAME

Flex search

DIRECTORY

t10_flex_search/

SUBMIT

index.html, style.css

ALLOWED

HTML, CSS

DESCRIPTION

Create a web page with the search form from the [Task 03](#). But, in this case, use a `flexbox` layout.

EXAMPLE

The screenshot shows a search interface with a title 'Flex search' at the top. Below it is a horizontal input field containing the placeholder 'Enter search phrase'. To the right of the input field is a small button labeled 'FIND'.

SEE ALSO

[Guide to CSS Flexbox](#)
[CSS Flexbox](#)



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Act Basic: Task 11

NAME

Settings

DIRECTORY

t11_settings/

SUBMIT

index.html, style.css, assets/images/*

ALLOWED

HTML, CSS

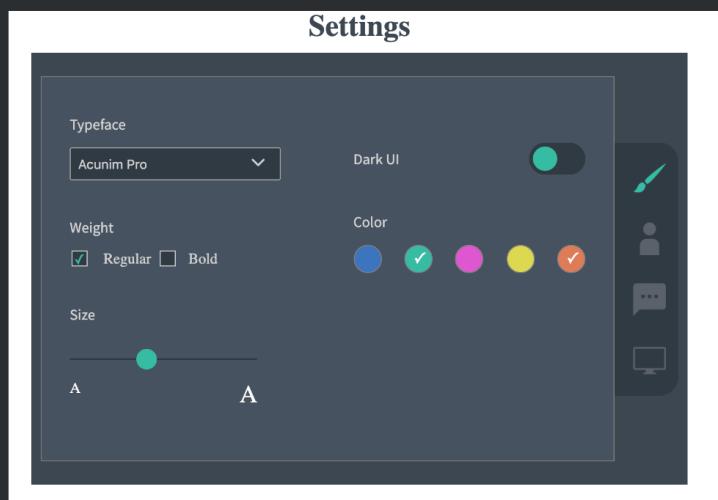
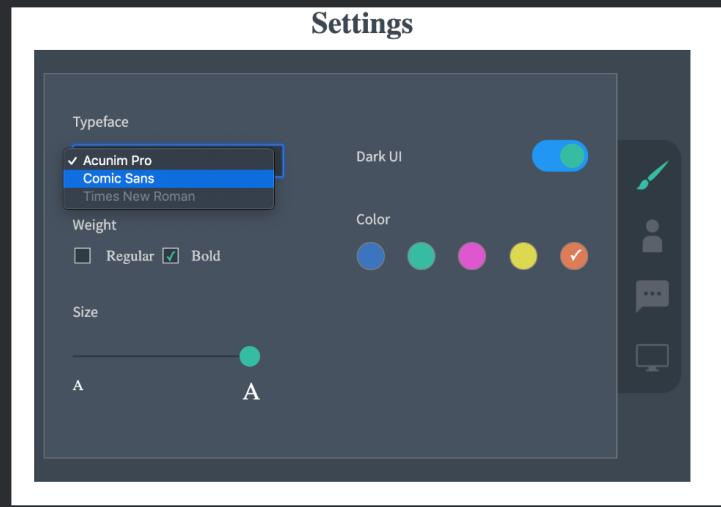
DESCRIPTION

Create a web page with a form for application settings.
Elements on the page:

- select a typeface - select box with fonts (combobox)
- toggle dark UI - animation switch with different visuals for on/off
- pick a color - checkboxes
- right side menu - not active
- select font weight - checkbox to choose font weight
- adjust font size - slim range slider for choosing font size

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**EXAMPLE****ucode****Sprint 01 | Web Frontend Basic > 29**



Act Advanced: Task 12

NAME

Japan

DIRECTORY

t12_japan/

SUBMIT

index.html, style.css

ALLOWED

CSS

DESCRIPTION

Create a CSS file for the web page available in the **SYNOPSIS**. Put the provided content in the `index.html` and don't change it.

Create the flag of Japan using only CSS. The **EXAMPLE** image illustrates how your web page must look like.

Don't use any images, you have to draw the shape using CSS.

SYNOPSIS

```
<!DOCTYPE html>
<html lang="en">

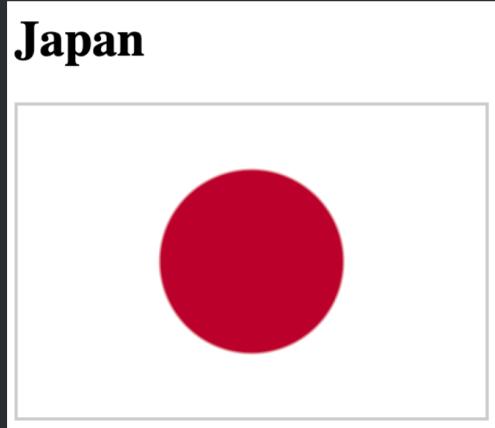
<head>
  <meta charset="UTF-8">
  <title>Japan</title>
  <meta name="description" content="t12. Japan">
  <link rel="stylesheet" href="style.css">
</head>

<body>
  <h1>Japan</h1>
  <div class="japan"></div>
</body>

</html>
```

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**EXAMPLE****uicode****Sprint 01 | Web Frontend Basic > 31**



Act Advanced: Task 13

NAME

Heroic table

DIRECTORY

t13_heroic_table/

SUBMIT

index.html, style.css

ALLOWED

HTML, CSS

DESCRIPTION

Create a web page, using HTML and CSS, with a table of the stats of several popular superheroes. The table has six columns: `name` (of the superhero), `is human` (true/false), `intelligence` (0-100), `strength` (0-100), `speed` (0-100).

Describe the style entirely in the CSS file.

The table has a background color as a gradient from `#6e0000` to `antiquewhite`, and a 4px border.

Header row:

- `text: #ffe369, bold`
- `background color: rgba(110, 0, 0, 0.4)`
- `border: 2px, color - rgba(189, 195, 199, 0.05)`
- `padding: 10px`

Cells of the `first` column have text in `white` color and bold typeface. Cells of alternate rows in the first column have the background color of `rgba(143,148,251, 0.1)`.

Cells in the `other columns` (2-6):

- `text color: midnightblue`
- `border: 2px, rgba(189, 195, 199, 0.05)`
- `padding: 5px for top and bottom, 50px for right and left`
- additional formatting:
 - if equal to "FALSE" or 100: `white` text and `darkred` background
 - else: `midnightblue` text and `antiquewhite` background

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Link:

- text: white, bold
- padding: 10px

See the [EXAMPLE](#) image.

EXAMPLE

Table

NAME	IS HUMAN	SUPERPOWER	INTELLIGENCE	STRENGTH	SPEED
Batman	TRUE	Peak Human Condition	100	30	25
Captain America		Artificially Enhanced Physiology	90	35	45
Daredevil		Superhuman Senses	90	15	35
Green Lantern		Bright Green Energy Conduit	80	100	100
Hulk		Superhuman Strength	60	100	85
Iron Man		Direct Cybernetic Interface	100	85	70
Spider-Man		Animal Oriented Powers	95	55	65
Superman	FALSE	Kryptonian Physiology	95	100	100
The Flash	TRUE	Speed Force Conduit	95	50	100
Thor	Asgardian/Elder God Hybrid Physiology	80	100	100	
Wolverine	Unbreakable Skeleton	80	40	40	
Wonder Woman	Divine Empowerment	90	100	100	

<superherodb.com>



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Act Advanced: Task 14

NAME

Superhero application

DIRECTORY

t14_superhero_app/

SUBMIT

index.html, style.css

ALLOWED

HTML, CSS

DESCRIPTION

Create a web page with a form for entering data about a superhero. The form has a 2px gray border and a 20px padding. Make sure to use the `<form>` tag. The form has the following sections:

About the Superhero - input fields with text/hints

- real name - to insert text with autofocus (required)
- superhero name - to insert text with the alias of the superhero
- age - to insert numbers (1 - 999 with step 1)
- about - multiline text (starting size - 5 lines, 70 symbols in a line, max 500 symbols)
- photo - a button for loading a superhero's image

Powers - superhero's abilities

- 6 checkboxes with superpowers
- a range slider to indicate the level of control over the powers (from 0 to 10 with step 1, start number is 1)

Origin of Powers - how the superhero got his powers

- 5 radio-buttons with options of origins of superpowers

Buttons - untitled section

- clear all of the form's fields
- send the form

See the **EXAMPLE** image as a reference of what your web page must look like. Add some design if you like.



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EXAMPLE

Superhero Form

About the Superhero

Real Name Superhero real name | Superhero Name Superhero alias | Age
Information about the superhero, max 500 symbols

About

Photo: No file chosen

Powers

Telekinesis Super strength or speed Shapeshifting Flight Elemental control Other

Level of control:

Origin of Powers

Unknown Freak lab accident Chosen by an ancient wise being The superhero is not human Other

SEE ALSO

Your first form
HTML Forms



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Act Advanced: Task 15

NAME

bLink182

DIRECTORY

t15_bLink182/

SUBMIT

index.html, style.css

ALLOWED

CSS

DESCRIPTION

Create a CSS file for the HTML page written in the **SYNOPSIS**. Put the provided content in the `index.html` and don't change it.

The HTML code contains a list of links. Use CSS to highlight the links in different ways.

Use the following link conditions for highlighting:

- contains `www` after the protocol - **green**
- would be opened in a new tab - add "\21D2" in **coral** after the link
- contains an HTTPS protocol - add "\00BB" (10px right padding) before the link
- contains an HTTP protocol - add "\00D7" (10px right padding) in **red** before the link
- ends with `a` - hover effect: add "\2026 last symbol is `a`" in **coral** and **italics** after the link

See the **EXAMPLE** image.



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SYNOPSIS

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <title>bLink182</title>
  <meta name="description" content="t15. bLink182">
  <link rel="stylesheet" href="style.css">
</head>

<body>
  <h1>Links</h1>
  <ul>
    <li><a href="https://developer.mozilla.org/">developer.mozilla.org</a></li>
    <li><a href="https://validator.w3.org/">validator.w3.org</a></li>
    <li><a href="https://www.freecodecamp.org/" target="_blank">freecodecamp.org</a></li>
    <li><a href="https://uicode.world/">uicode.world</a></li>
    <li><a href="https://schema.org/a" target="_blank">schema.org</a></li>
    <li><a href="https://www.sitemaps.org/">sitemaps.org</a></li>
    <li><a href="http://nginx.org/">nginx.org</a></li>
    <li><a href="https://prometheus.org.ua">prometheus.org.ua</a></li>
    <li><a href="http://test.www.link/">test.www.link</a></li>
  </ul>
</body>
</html>
```



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EXAMPLE

Links

- » [developer.mozilla.org](#)
- » [validator.w3.org](#)
- » [freecodecamp.org](#) ➔
- » [ucode.world](#)
- » [schema.org](#) ➔
- » [sitemaps.org](#)
- ✗ [nginx.org](#)
- » [prometheus.org.ua](#)
- ✗ [test.www.link](#)

with hover:

Links

- » [developer.mozilla.org](#)
- » [validator.w3.org](#)
- » [freecodecamp.org](#) ➔
- » [ucode.world](#)
- » [schema.org ... last symbol is 'a'](#)
- » [sitemaps.org](#)
- ✗ [nginx.org](#)
- » [prometheus.org.ua](#)
- ✗ [test.www.link](#)



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Act Advanced: Task 16



NAME

Weather

DIRECTORY

t16_weather/

SUBMIT

index.html, style.css, assets/images/*

ALLOWED

HTML, CSS

DESCRIPTION

Create a web page with a weather forecast for a week. The width and height of day blocks are fixed and independent of browser size. Apply a hover effect for day blocks using a shadow effect.

Text:

- font - Lato Regular (400) for temperature, Lato Bold (700) for date
- size - 1.5em for date, 2em for temperature

Put all necessary graphics (only .png or .jpg) to `assets/images/`. See the **EXAMPLE** image.

EXAMPLE



with hover



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ucode

Sprint 01 | Web Frontend Basic > 40



Act Advanced: Task 17

NAME

Groot

DIRECTORY

t17_groot/

SUBMIT

index.html, style.css

ALLOWED

CSS

DESCRIPTION

Create a CSS file for the HTML page written in the **SYNOPSIS**. Put the provided content in the `index.html` and don't change it.

The resulting web page will contain a text block. The width of this block has to be responsive to the size of the browser window, and always be 200px less than the window width. Size of the edges of the text block is 25px.

See the **EXAMPLE** image.

SYNOPSIS

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <title>Groot!</title>
  <meta name="description" content="t17. Groot">
  <link rel="stylesheet" href="style.css">
</head>

<body>
  <h1>Groot!</h1>
  <div class="box">I am Groot!</div>
</body>
```



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```
</html>
```

EXAMPLE

Groot!

I am Groot!

ucode

Sprint 01 | Web Frontend Basic > 42



Act Advanced: Task 18

NAME

Print-ready

DIRECTORY

```
t18_print_ready/
```

SUBMIT

```
index.html, style.css, assets/images/*
```

ALLOWED

HTML, CSS

DESCRIPTION

Create a page with a headline, some text, and an image. The layout must differ slightly depending on whether you're seeing the page from a screen or in print.

See the following example images. This is how your web page must look like. However, pick any image and text you like, as long as the text is long enough to see it wrap around the image.

Hint: you don't have to actually print the page to check for the difference in layout. In your browser menu, find and click the button "Print", and you will see a preview of what your web page will look like in print version. Alternatively, you can do it using browser developer tools.



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EXAMPLE

Screen

Franklin Richards



Franklin Richards is the son of Reed and Susan Richards, who are better known as the Invisible Woman and the Human Torch respectively. Reed and Susan, the first modern team of superheroic adventurers, Reed and Susan Richards developed their superheroic powers as a result of exposure to cosmic radiation during a flight in outer space. Their exposure to the radiation also had important consequences for their son, who was born years later.

First, the radiation somehow affected Susan Richards' body in such a way as to give her serious difficulties in giving birth. For unknown reasons, soon before she was to give birth to Franklin, Susan Richards' blood cells were observed to be carrying a strange form of energy that threatened the lives of both herself and the baby. Presumably, this energy effect is linked with Susan Richards' superheroic powers over energy that enable her to become invisible and to create force fields.

With Franklin's birth imminent, Reed Richards and his teammates, the Human Torch and the Thing, journeyed into the anti-matter dimension called the Negative Zone to find the only means known to Mister Fantastic of saving his wife and unborn son. The Council of the Negative Zone, headed by Amillibus, one of its most powerful beings, agreed to help. Mister Fantastic succeeded in obtaining the Rod and drained energy from it into a special container, which he and his two colleagues then brought to their own dimension. Franklin Richards succeeded in using the energy from the Rod to drain the energy in his wife's blood and, presumably, the baby's life force as well. The infant was born, Franklin Storm, and the Richards' best friend, Benjamin J. Grimm, was there to witness the birth. Auntie Agatha Harkness acted as Franklin's nanny and protector.

The cosmic radiation that had given Reed and Susan Richards their superheroic powers also resulted in affecting the genetic structure of their son. Franklin was born a mutant. Unlike most superheroic mutants, whose unusual powers do not emerge until the mutant reaches puberty, Franklin began manifesting his superheroic powers at a very early age. In the normal course of events, his powers would presumably increasingly emerge as he grew older until they reach their full, eventual potential when he achieves maturity.

However, this normal process was ruined by Amillibus, who, during a later conflict with the Fantastic Four, placed Franklin within a machine that triggered the release of his full psionic potential. Franklin was too young and inexperienced to control the vast energies building up within him, and Reed Richards feared that his son would be unable to prevent himself from releasing the energy in his body and thus destroy all life in Earth. Unable to find another means to deal with the problem in the short space of time left before disaster would strike, Reed was forced to use a device that rendered Franklin comatose and thus unable to project psionic energy.

Print

Franklin Richards



Franklin Richards is the son of Reed and Susan Richards, who are better known as Mister Fantastic and the Invisible Woman. The Fantastic Four, the first modern team of superheroic adventurers, Reed and Susan Richards developed their superheroic powers as a result of exposure to cosmic radiation during a flight in outer space. Their exposure to the radiation also had important consequences for their son, who was born years later.

First, the radiation somehow affected Susan Richards' body in such a way as to give her serious difficulties in giving birth. For unknown reasons, soon before she was to give birth to Franklin, Susan Richards' blood cells were observed to be carrying a strange form of energy that threatened the lives of both herself and the baby. Presumably, this energy effect is linked with Susan Richards' superheroic powers over energy that enable her to become invisible and to create force fields.

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SEE ALSO

[Force Chrome DevTools Into Print Preview Mode](#)

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ucode



Act Advanced: Task 19

NAME

It's a match!?

DIRECTORY

t19_match/

SUBMIT

index.html, style.css

ALLOWED

CSS

DESCRIPTION

Create a CSS file for the HTML page written in the **SYNOPSIS**. Put the provided content in the `index.html` and don't change it.

Draw a match using CSS only! Don't use any images or photos. The contents of the web page must look as close as possible to the **EXAMPLE** image.

For this task, you will need to research gradients, shadows, transformations (scaling, rotation), z-index, etc.

SYNOPSIS

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <title>It's a match!</title>
  <meta name="description" content="t19. It's a match!">
  <link rel="stylesheet" href="style.css">
</head>

<body>
  <h1 id="heading">It's a match!</h1>

  <div class="match">
    <div class="fire"></div>
```



Sprint 01 | Web Frontend Basic > 45



```
<div class="top"></div>
<div class="stick"></div>
</div>

</body>

</html>
```

EXAMPLE**ucode****Sprint 01 | Web Frontend Basic > 46**



Act Advanced: Task 20

NAME

Super back-up

DIRECTORY

```
t20_super_backup/
```

SUBMIT

```
index.html, style.css
```

ALLOWED

HTML, CSS

DESCRIPTION

Create a page with a form with checkboxes. See the [EXAMPLE](#) section for a reference of what your web page must look like. Add a hover effect for the "SEND" button - slowly (over 1 second), change the background color. Font: Source Sans Pro.



Sprint 01 | Web Frontend Basic > 47

EXAMPLE

Superhero request form

What do you need help with?

DEFEAT A VILLAIN ✓ SAVE A CIVILIAN STOP A ROBBERY

PREVENT AN APOCALYPSE TRAIN A SIDEKICK ✓

OTHER STUFF

Job details

Name _____ Email _____

SEND

ucode

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Act Advanced: Task 21

NAME

Circle of life

DIRECTORY

```
t21_circle_of_life/
```

SUBMIT

```
index.html, style.css
```

ALLOWED

HTML, CSS

DESCRIPTION

Create a page with a green circle that cyclically moves horizontally from one border to another.

Add a hover effect on the circle - its color must change to red over 2 seconds duration.

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Act Advanced: Task 22

NAME

Off the grid

DIRECTORY

t22_off_the_grid/

SUBMIT

index.html, style.css, assets/images/*

ALLOWED

HTML, CSS

BEFORE YOU BEGIN

You need to understand what a breadcrumb navigation is and how it works.

DESCRIPTION

Create a web page with a grid for three screen sizes:

- less than 640
- 640 to 1366
- more than 1366

The grid is made out of nine comic book panels. You can find the panels in the resources. Using a grid layout, recreate the web page shown in the EXAMPLE images. These images illustrate how the panels are positioned in three different screen widths (from largest to smallest).

Your web page must look identical to the images. Pay close attention to how the panels are arranged, how the columns and rows are aligned, whitespace in between, image height, etc.

Keep in mind that there are many different ways to achieve the same result. Play around with various ways of adjusting a CSS grid.

SEE ALSO

[A Complete Guide to Grid](#)
[Basic Concepts of grid layout](#)
[CSS Grid Layout](#)
[Comic Action Comics \(1938\), Issue #882](#)

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**EXAMPLE****Off the grid****uicode****Sprint 01 | Web Frontend Basic > 51**

**Off the grid****Off the grid****ucode****Sprint 01 | Web Frontend Basic > 52**

Document



DOCUMENTATION

One of the attributes of Challenge Based Learning is documentation of the learning experience from challenge to solution. Throughout the challenge, you document your work using text and images, and reflect on the process. These artifacts are useful for ongoing reflection, informative assessment, evidence of learning, portfolios, and telling the story of challenge. The end of each phase (Engage, Investigate, Act) of the challenge offers an opportunity to document the process.

Much of the deepest learning takes place by considering the process, thinking about one's own learning, analyzing ongoing relationships with the content and between concepts, interacting with other people, and developing a solution. During learning, documentation of all processes will help you analyze your work, approaches, thoughts, implementation options, code, etc. In the future, this will help you understand your mistakes, improve your work, and read the code.

At the learning stage, it is important to understand and do this, as this is one of the skills that you will need in your future job. Naturally, the documentation should not be voluminous, it should be drawn up in an accessible, logical, and connected form.

So, what must be done?

- a nice-looking and helpful **README** file. In order for people to want to use your product, their first introduction must be through the **README** on the project's git page. Your **README** file must contain:
 - **Short description.** This means, that there must be some info about what your project actually is. For example, what your program does.
 - **Screenshots of your solution.** This point is about screenshots of your project "in use".
 - **Requirements and dependencies.** List of any stuff that must be installed on any machine to build your project.
 - **How to run your solution.** Describe the steps from cloning your repository to the first launch of your program.
- a full-fledged documentation in any forms convenient for you. By writing this, you will get some benefits:
 - you have an opportunity to think through implementation without the overhead of changing code every time you change your mind about how something should be organized. You will have very good documentation available for you to know what you need to implement
 - if you work with a development team and they have access to this information before you complete the project, they can confidently start working on another part of projects that will interact with your code
 - everyone can find how your project works
- your documentation must contain:
 - Description of progress after every completed CBL stage.



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- Description of the algorithm of your whole program.

Keep in mind that the implementation of this stage will be checked by peers at the assessment!

Also, there are several links that can help you:

- Make a README
- How to write a readme.md file?
- A Beginners Guide to writing a README
- Google Tools - a good way to journal your phases and processes:
 - Google Docs
 - Google Sheets
- Dropbox Paper - a tool for internally developing and creating documentation
- Git Wiki - a section for hosting documentation on Git-repository
- Haroopad - a markdown enabled document processor for creating web-friendly documents
- Canva - a good way to visualize your data
- QuickTime - an easy way to capture your screen, record video or audio
- code commenting - source code clarification method. The syntax of comments is determined by the programming language
- and others to your taste



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