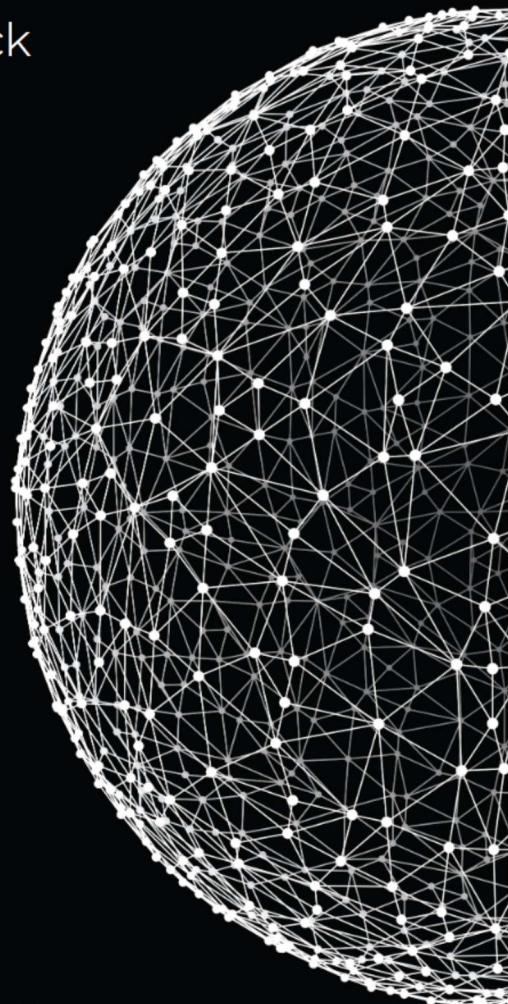


Sprint 01

Half Marathon Full Stack

November 15, 2021



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Engage

DESCRIPTION

Congratulations on completing the first **Sprint** of the **Half Marathon!** You have learned the basics of HTML and CSS. It's time to build upon and improve that knowledge.

Today you will practice frontend development, also known as client-side development. This concerns the way that users interact with a web resource. It's the job of a frontend web developer to create a responsive, intuitive, and user-friendly interface that works on any platform, browser, or device.

There is no one correct way of designing frontend. Finding tools and layouts that fit a particular project best is a complex and creative process.

In this **Sprint**, you will learn some advanced features of HTML and CSS, and put them into practice.

Good luck!

BIG IDEA

Frontend web development.

ESSENTIAL QUESTION

What skills does a frontend developer need?

CHALLENGE

Acquire skills necessary to produce awesome layouts.



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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 solutions, 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.

- How was your experience completing Sprint00?
- What non-technical skills should a frontend developer have?
- What is a website layout?
- What is a drop-down menu?
- What is the difference between a combo box and a drop-down list?
- What are the advantages and disadvantages of using breadcrumbs?
- What is the benefit of using Grid Layout?
- What are microformats?
- Why are microformats worth using?
- What are CSS pseudo-classes?
- What is the difference between a pseudo-element and a pseudo-classes in CSS?
- How can you ensure that your web page works equally well on different browsers?
- How can you check your web page for cross-browser compatibility across different operating systems?

GUIDING ACTIVITIES

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

- Research top technical and non-technical skills of a frontend developer.
- Save these resources: [mozilla resources for developers](#), [w3schools](#). There you can find HTML, CSS and JS docs with examples.
- Refresh your memory about [assets optimization](#).
- Organize your workspace and clear your mind for web development.
- Get inspired by some modern and cool-looking websites.
- Investigate what factors should be considered while designing a website.
- Learn how to achieve cross-browser compatibility:
 - Get to know about [common HTML and CSS problems](#).
 - Consider consulting these references for [CSS](#) and [HTML](#) to ensure browser support.
 - Find out how to ensure that your web pages don't have issues with [accessibility](#).
 - Read about ways to [test](#) your web pages.
 - Follow these [tips](#) while creating new web pages.
- Think about gained information and identify the key factors of frontend development.



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- Clone your git repository issued on the challenge page in the LMS.
- Employ the full power of P2P by brainstorming with other students.
- Try to implement your thoughts in code.

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**. This means that the complexity of the tasks increases gradually. Try to complete all tasks to get maximum points and more knowledge.
- Analyze all information you have collected during the preparation stages.
- 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>`.
- The solution will be checked and graded by students like you. Peer-to-Peer learning.
- Your work may also be graded by your mentor. So, be ready for that.
- 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.

Act Basic: Task 00

NAME

Turn around...

DIRECTORY

```
t00_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="t00. Turn around...">
  <link rel="stylesheet" href="style.css">
</head>

<body>
  
</body>

</html>
```



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EXAMPLE**SEE ALSO**

Turn around
`rotate()`

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Act Basic: Task 01

NAME

The Infinity Gauntlet

DIRECTORY

t01_the_infinity_gauntlet/

SUBMIT

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

ALLOWED

HTML, CSS

LEGEND

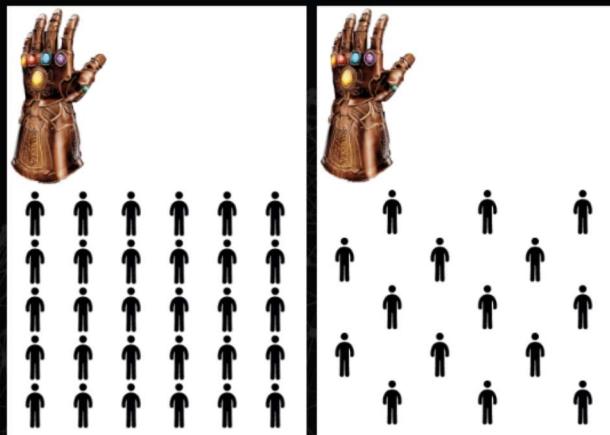
The Infinity Gauntlet is one of the most powerful objects in the Universe. It was designed to hold six of the soul gems, better known as the Infinity Gems. When used in combination, their already impressive powers make the wearer able to do anything they want..

DESCRIPTION

Create a web page with 5 rows of person-shaped icons (6 people in each row). Add The Infinity Gauntlet at the top. When hovering over The Infinity Gauntlet, every other person disappears.

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EXAMPLE**SEE ALSO**

Pseudo class nth-child

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Act Basic: Task 02

NAME

X-Menu

DIRECTORY

t02_xmenu/

SUBMIT

index.html, style.css

ALLOWED

HTML, CSS

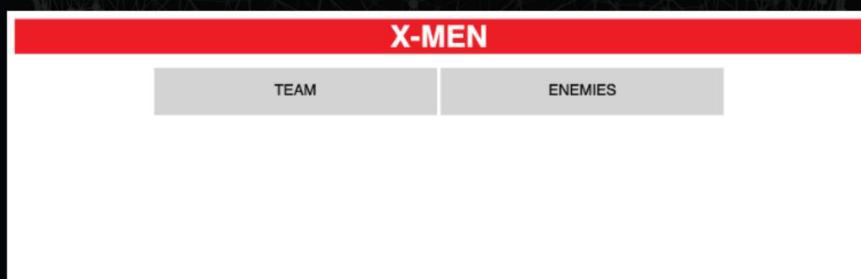
DESCRIPTION

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 navigation menu for the 'X-MEN' section. The top-level menu items are 'TEAM' and 'ENEMIES'. 'TEAM' is highlighted with a red background. The 'ENEMIES' item has a tooltip 'Hover over a first-level menu item' above it. The 'ENEMIES' menu is expanded, showing 'BROTHERHOOD OF MUTANTS' (highlighted with a red background), 'OTHER', and three additional items: 'MAGNETO', 'MYSTIQUE', and 'QUICKSILVER'.

TEAM

ENEMIES

LEADERS

MEMBERS

BROTHERHOOD OF MUTANTS

OTHER

MAGNETO

MYSTIQUE

QUICKSILVER

Hover over a first-level menu item

Hover over a second-level menu item

X-MEN

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Act Basic: Task 03

NAME

Handbook

DIRECTORY

t03_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

The topic of Protocols contains:

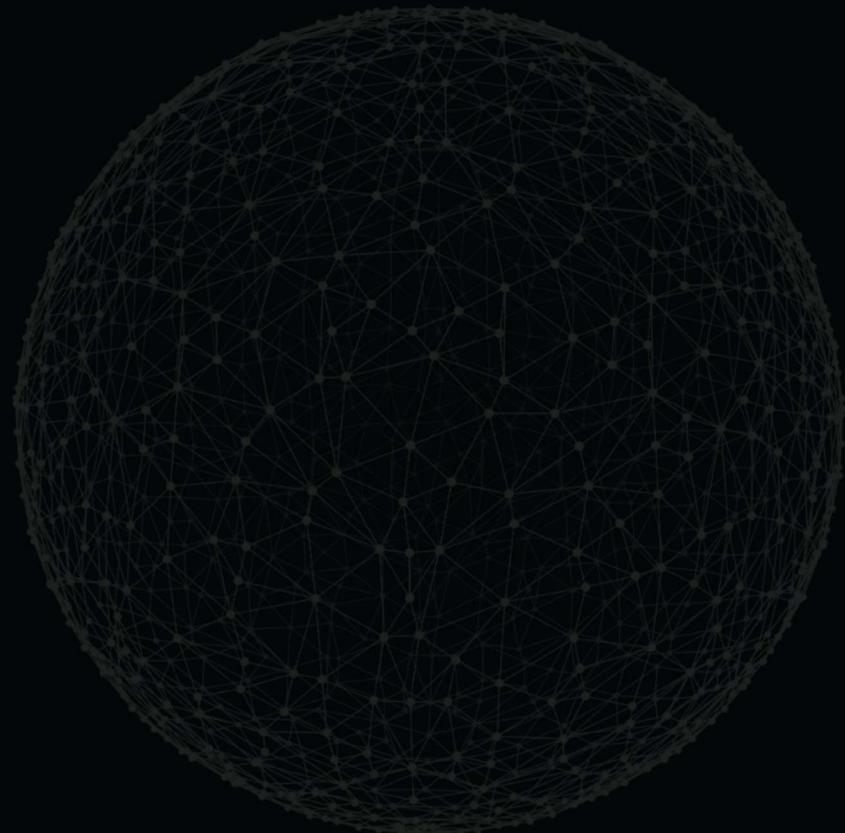
- a description
- HTTP/HTTPS - describe each method and all classes of response status codes
- DNS - describe all kind of records
- IP - how to determine an IP address (e.g. google.com, google.com.ua, ucode.world)

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SEE ALSO

[Grid](#)



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Act Basic: Task 04

NAME

Flex search

DIRECTORY

t04_flex_search/

SUBMIT

index.html, style.css

ALLOWED

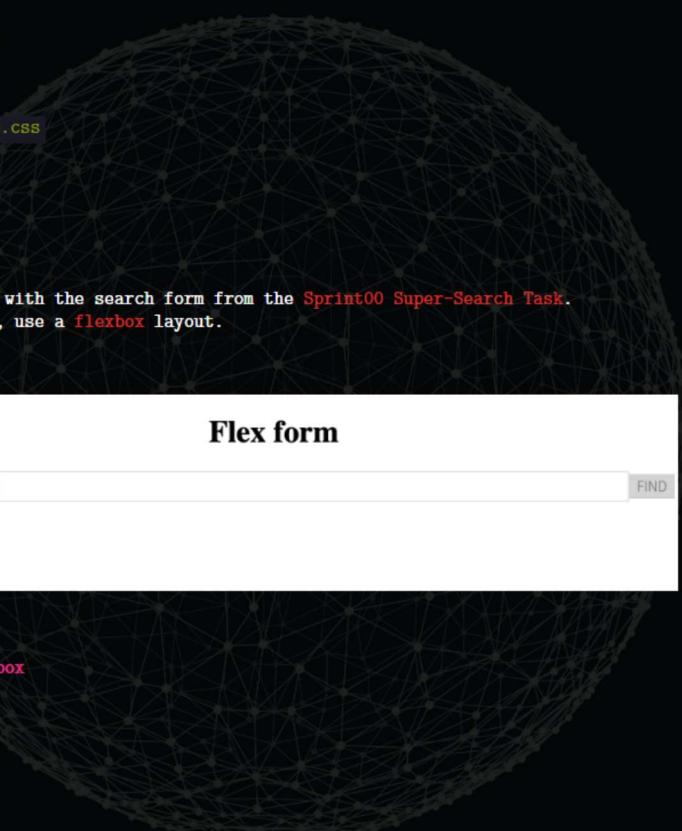
HTML, CSS

DESCRIPTION

Create a web page with the search form from the Sprint00 Super-Search Task.
But, in this case, use a **flexbox** layout.

EXAMPLE

Flex form



Enter search phrase FIND

SEE ALSO

[Guide to CSS Flexbox](#)

[CSS Flexbox](#)



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Act Basic: Task 05

NAME

Settings

DIRECTORY

t05_settings/

SUBMIT

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

ALLOWED

HTML, CSS

DESCRIPTION

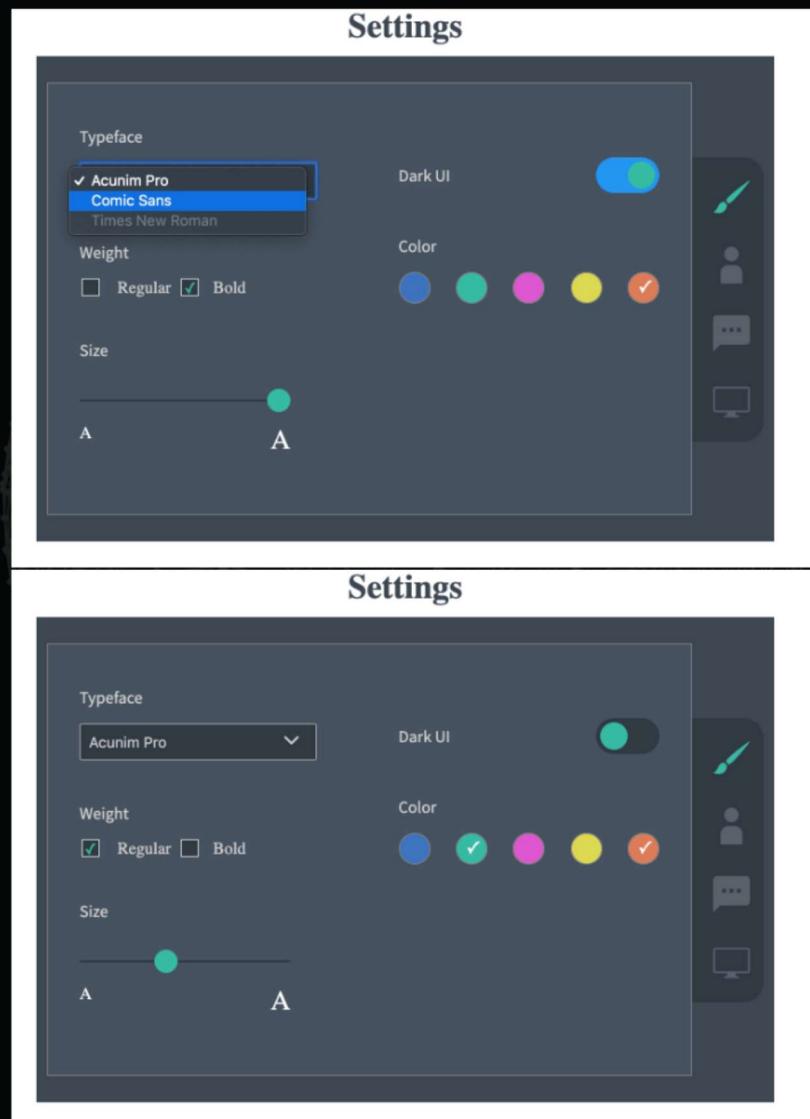
Create a web page with a form for application settings.

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 connect**

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Act Advanced: Task 06

NAME

Oscorp

DIRECTORY

t06_oscorp/

SUBMIT

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

ALLOWED

HTML, CSS

DESCRIPTION

Oscorp has made a big name for itself by creating the Green Goblin, Electro, some nice radioactive spiders, and other monstrosities. It's time for Oscorp to expand its horizons and get an online store running.

Create two web pages for an online store - one of the catalog of the store (index.html), and one page for a particular product (card.html).

It's entirely up to you, what your store is selling.

Catalog:

- Blocks:
 - header (logo, title, search, telephone, menu)
 - breadcrumbs
 - filtering and selected filters, filtering with a checklist and a slider
 - a list of products
 - pagination
 - footer
- Product:
 - image of the product
 - title
 - price
 - availability
 - buy button
 - on click of any product - open the product page

Product page:

- Blocks:

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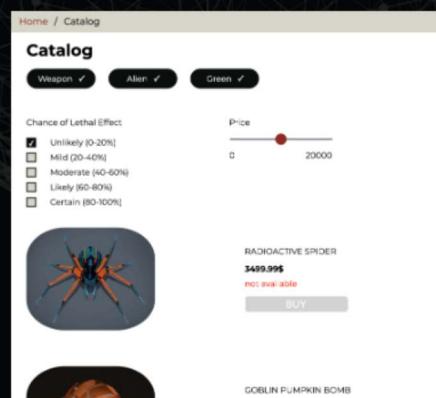
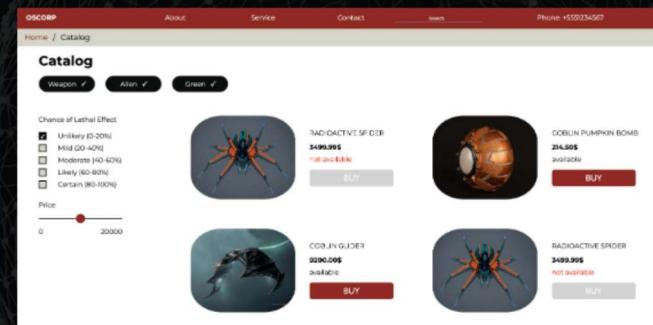
- header (logo, title, search, telephone, menu)
- breadcrumbs
- product (photo, title, price, availability, buy button, properties, comments)
- footer

Requirements:

- adaptive layout for mobile and desktop, points: 768, 1024
- MicroFormats
- base SEO requirements

Describe all styles in a CSS file.

EXAMPLE



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The image shows two identical product pages for a "Radioactive Spider" displayed side-by-side. The top page has a dark red header and footer, while the bottom page has a white header and footer. Both pages feature a large circular image of a radioactive spider, product details (name: Radioactive Spider, price: 3499.99\$, quantity: available), a "BUY" button, and a feedback card from a user named Peter.

Top Product Page Details:

- Product Name:** RADIOACTIVE SPIDER
- Price:** 3499.99\$
- Quantity:** available
- Buy Button:** BUY
- Description Fields:** Description, Quantity, Weight, Eyes, Effect
- Feedback Card:** Peter - Really changed my life! Would recommend.

Bottom Product Page Details:

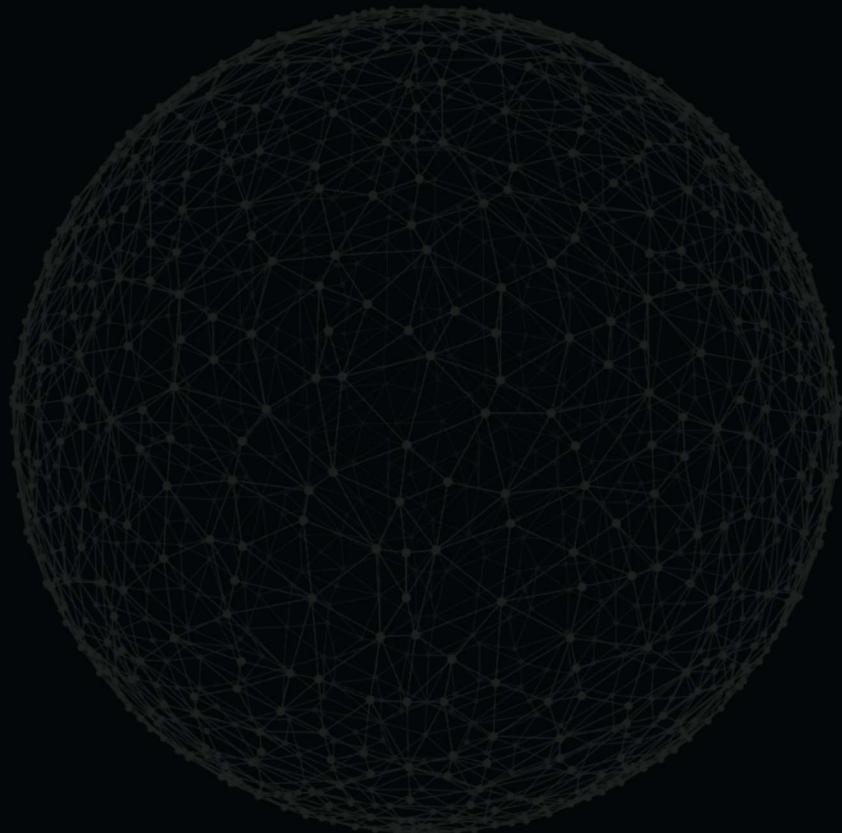
- Product Name:** RADIOACTIVE SPIDER
- Price:** 3499.99\$
- Quantity:** available
- Buy Button:** BUY
- Description Fields:** Description, Quantity, Weight, Eyes, Effect
- Feedback Card:** Peter - Really changed my life! Would recommend.

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SEE ALSO

[MicroFormats](#)
[SEO](#)



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Act Advanced: Task 07

NAME

Circle of life

DIRECTORY

t07_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 08

NAME

Off the grid

DIRECTORY

t08_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 3 screen sizes:

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

The grid is made out of 9 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 3 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



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Share

PUBLISHING

Last but not least, the final stage of your work is to publish it. It allows you to share your challenges, solutions, and reflections with local and global audiences. During this stage, you will discover ways of getting external evaluation and feedback on your work. As a result, you will get the most out of the task and better understand your achievements and missteps.

To share your work, you can create:

- a text post, as a summary of your reflection
- charts, infographics or other ways to visualize your information
- a video, either of your work, or a reflection video
- an audio podcast. Record a story about your experience
- a photo report with a small post

Helpful tools:

- [Canva](#) – a good way to visualize your data
- [QuickTime](#) – an easy way to capture your screen, record video or audio (macOS)
- [ScreenToGif](#) – screen, webcam, and sketchboard recorder with an integrated editor (Windows)

Examples of ways to share your experience:

- [Facebook](#) – create and share a post that will inspire your friends
- [YouTube](#) – upload an exciting video
- [GitHub](#) – share and describe your solution
- [Instagram](#) – share photos and stories from ucode. Don't forget to tag us :)

Share what you've learned and accomplished with your local community and the world. Use [#ucode](#) and [#CBLWorld](#) on social media.



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