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Web Development

Day 4: Advanced CSS

Transitions & Animations

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Icebreaker!

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Today's Schedule

Morning:

- Moving projects to text editor
- Source control
- GitHub

Afternoon:

- Recap of CSS
- Pseudo classes
- Transitions
- Animations

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Project: Move to Text Editor

- Convert all CodePen projects to Text Editor
  - Fan Page, Mondrian, Poster, Portfolio Page
- Create folders for each project
- Add the “missing” HTML code for each project
  - DOCTYPE declaration
  - Head element
  - CSS links
  - Body element

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Version Control

- What is version control?
  - Version control (aka source control) tracks changes in files.
- Why use it?
  - Go back to previous versions of code in case of bugs.
  - See differences between versions of files.
  - Try out new features without introducing bugs to stable code.
- Git is the most popular version control system.

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Git + GitHub

By itself, Git creates **local repositories** (repos) but you can also add **remote repos** that are stored on the internet. This means your code is safe should something happen to your laptop.

GitHub is one of the most popular sites for web-based Git version control.

Sign up for a GitHub account at: https://github.com

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Using Git

Git Tutorial for Windows:

https://www.pluralsight.com/guides/using-git-and-github-on-windows

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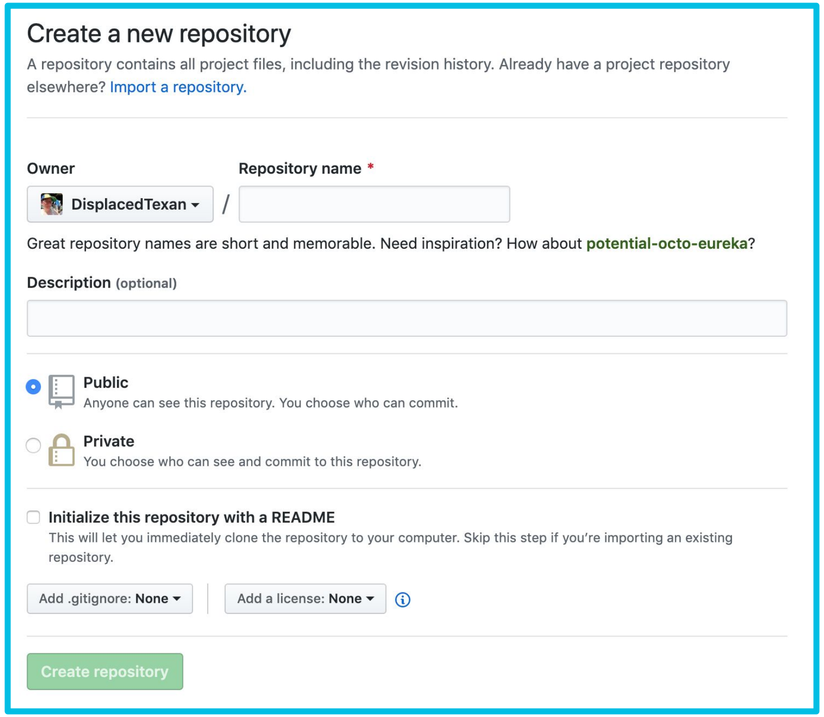
Your First GitHub Repo

- Click on the green "New" button to create a repo
- Give your repo a name
  - Use the same name as your local folder
- Click on "Private" if you want to keep your code hidden



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

Owner: DisplacedTexan / Repository name *

Great repository names are short and memorable. Need inspiration? How about potential-octo-eureka?

Description (optional)

[✓ Public] Anyone can see this repository. You choose who can commit.

Private: You choose who can see and commit to this repository.

Initialize this repository with a README: This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.

Add .gitignore: None

Add a license: None

Create repository

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Worktime

- Create GitHub repos for all of your text editor projects.
- For each project, add the remote URL to the local Git repo.
- Finish transferring your CodePen projects to the text editor.

Recap of CSS

- How do you add CSS to elements?
- What is a CSS selector?
- What is CSS specificity?

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Pseudo-classes

A pseudo-class is used to define a special state of an element.

It can be used to:

- Style an element when a user mouses over it
- Style visited and unvisited links differently
- Style an element when it gets focus

They are defined by a CSS selector followed by a **colon plus a keyword**.

Pseudo-classes

```
a {
    color: black;
    text-decoration: none;
}

a:hover {
    color: red;
    text-decoration: underline;
}
```

In this example, "**a**" is the selector, and "**:hover**" is the pseudo-class.

What does this CSS rule do?

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Pseudo-classes

```
div {
     color: white;
     background-color: blue;
}

div:first {
     color: black;
     background-color: yellow;
}
```

In this example, “div” is the selector, and “:first” is the pseudo-class.

What does this CSS rule do?

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Transitions

When using changing CSS properties on a web page, **transitions** are useful for controlling the speed of those changes and making them appear animated.

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Transitions

Transitions have four properties:

- Transition-property: the CSS property that will be “animated”
- Transition-duration: how long the transition will last
- Transition-timing-function: changes the speed of the transition
- Transition-delay: how long to wait before the transition starts

They are usually written in shorthand:

```
transition: <property> <duration> <timing-function> <delay>;
```

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Transitions

```
div {
    transition-property: height;
    transition-duration: 1s;
    transition-timing-function: ease-in;
    transition-delay: 0s;
}

div {
    transition: height 1s ease-in 0s;
}
```

These CSS rules do the same thing.

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Transitions

The **transition-timing-function** property is an *acceleration curve so that the speed of the transition can vary over its duration.*

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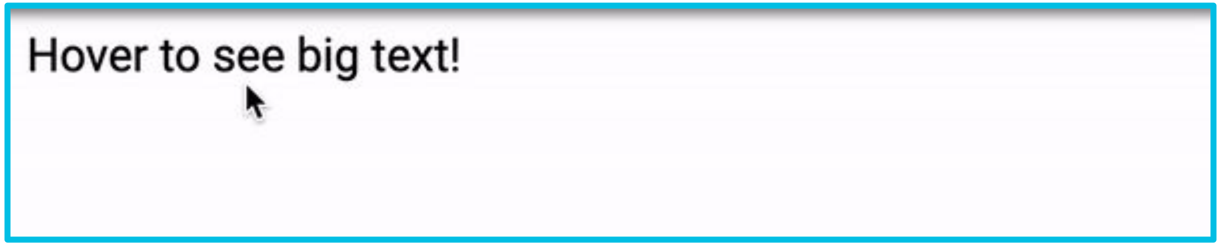
Transitions

Using pseudo-class hover, no transition.


Hover to see big text!

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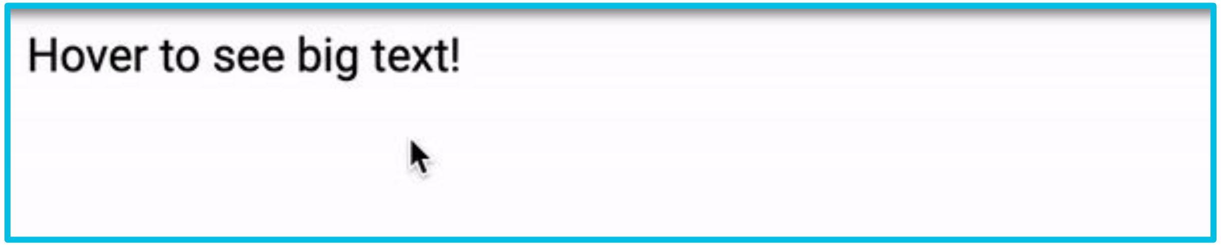
Transitions

Using pseudo-class hover with transition (ease-in timing function).



Hover to see big text!

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Transitions

Try it yourself:

- Open Big Text CodePen
- Add a transition to the .big-text class to make text size change smoothly
- Use the shorthand transition property:
    - transition: <property> <duration> <timing function> <delay>;

Animations

Transitions are useful when you are going between two states -- for example, a link is hovered over, or it’s not.

Animations are good for more complex changes, where there are many states, or if the animation begins on page load.

Animations

There are two parts to using CSS Animations:

- Creating the animation using the **@keyframes** keyword
- Assigning the animation to an element, which uses the following properties:
    - **animation-name**: the name of the animation
    - **animation-duration**: how long the animation lasts
    - **animation-iteration-count**: how many times the animation repeats
    - **animation-direction**: which direction the animation runs
- Just like transitions, there is a shorthand animation:
  animation: <name> <duration> <iteration-count> <direction>;

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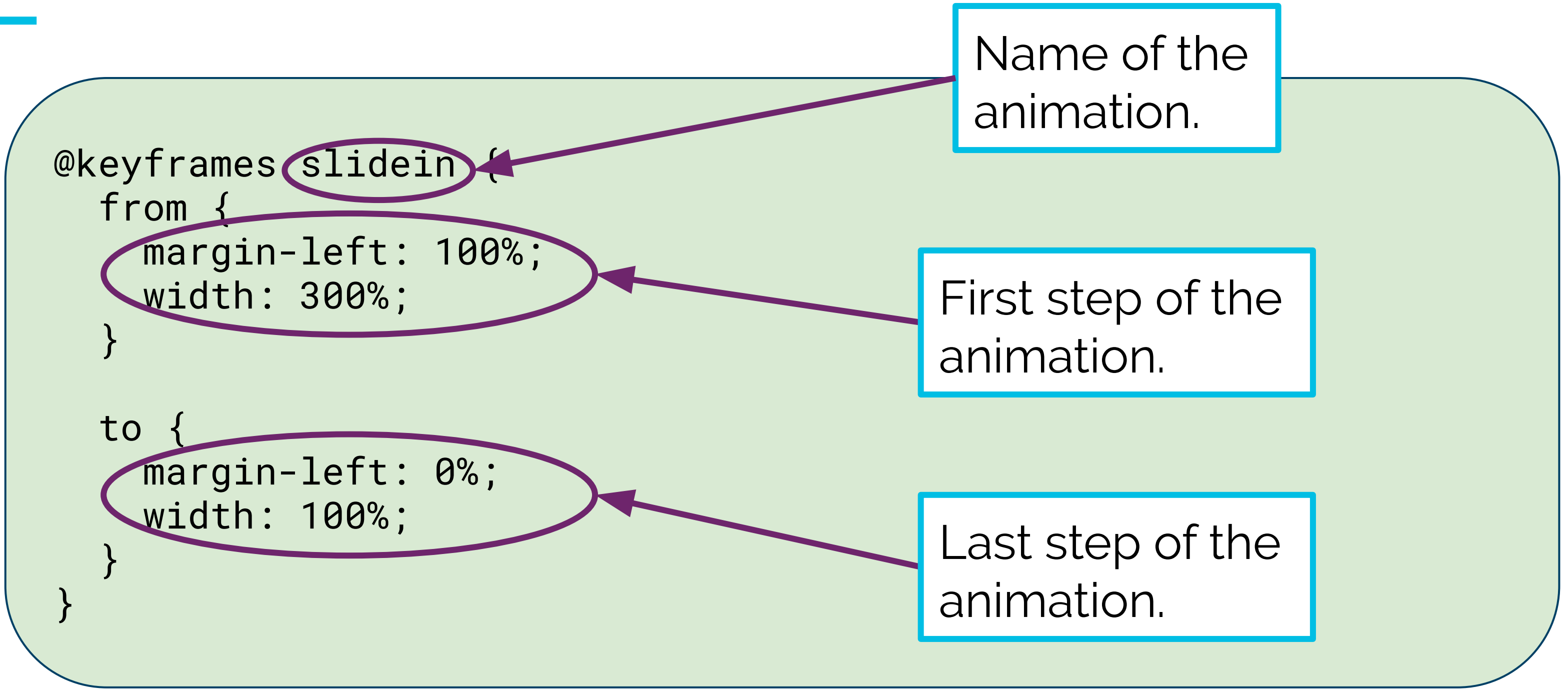
Animations



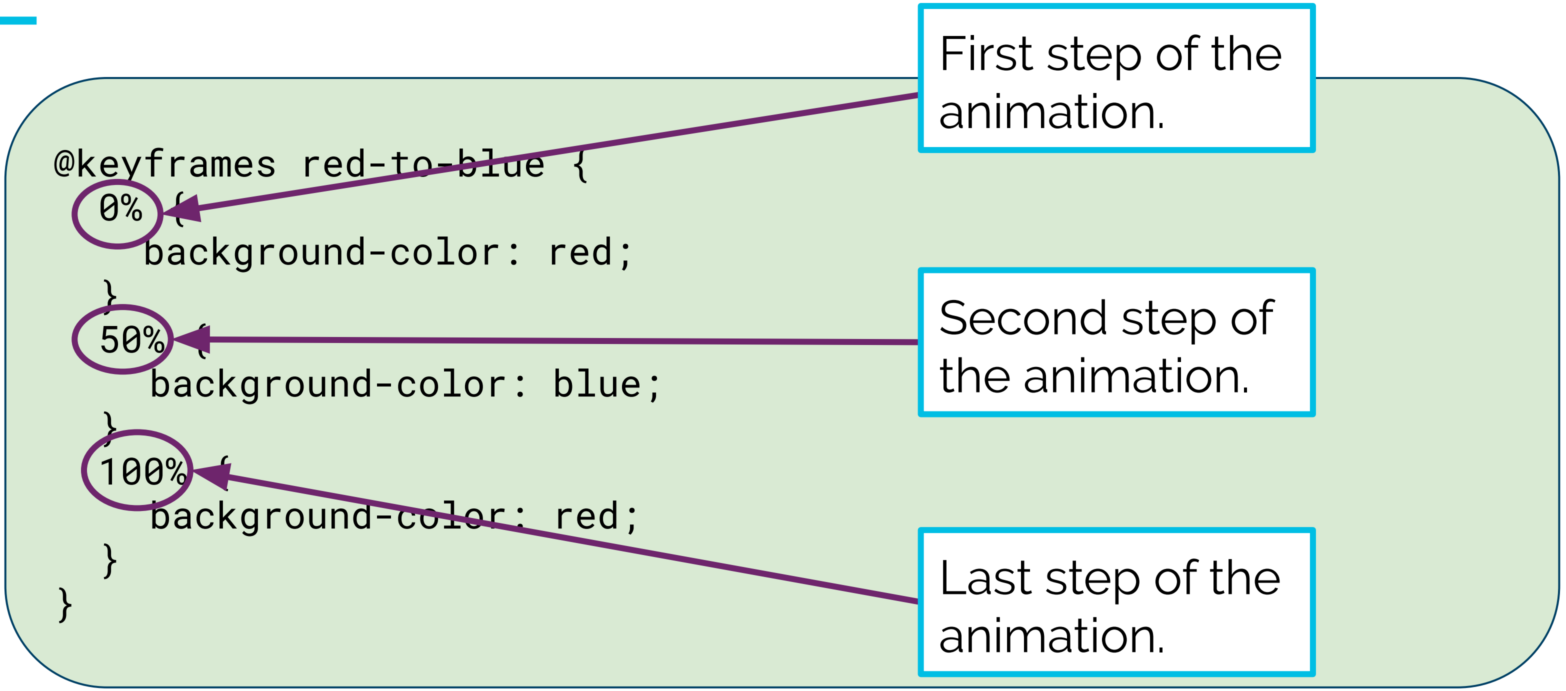
```
@keyframes slidein {
  from {
    margin-left: 100%;
    width: 300%;
  }

  to {
    margin-left: 0%;
    width: 100%;
  }
}
```

Animations

Animations require at least a beginning and an ending state, but can take as many steps as necessary using percentages.

Animations



```
@keyframes red-to-blue {
  0% {
     background-color: red;
  }
  50% {
     background-color: blue;
  }
  100% {
     background-color: red;
  }
}
```

First step of the animation.

Second step of the animation.

Last step of the animation.

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Animations

Assigning an animation to an element is similar to assigning a transition:

```
#circle {
    animation-name: red-to-blue;
    animation-duration: 4s;
    animation-iteration-count: infinite;
}

#circle {
    animation: red-to-blue 4s infinite;
}
```

These CSS rules do the same thing.

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Animations

Try it yourself:

- Open Rainbow Circle CodePen
- Add an animation to the .circle class to make it change colors using the given animation
- Use the shorthand animation property:
  - animation: <animation-name> <duration> <iteration-count> <delay>;

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Project: Animated Solar System

Add the missing CSS to animate the Solar System

- The animation is given to you (@keyframes rotate)
- You will need to add the animation to only one of the CSS selectors that have been given to you
    - Hint: it will apply to all of the planets and the moon
    - Another hint: the planets are all <li>s with different IDs but the moon is referenced by “li#earth span”
- All of the planets will have a different rotation speed so each of the <li>s will have a different animation-duration.

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Reflection

Write in your journal about how you feel or what you learned today.

Prompts:

- What did you find challenging about switching to the text editor from CodePen?
- Think about Git and version control. Why would you want to have multiple branches for a project?
- What's the difference between CSS Transitions & Animations?

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