

## today

**view:** studio 3 / show topic

**introduce studio 4:** time is on my side

**topic:** random, timers, intervals, animations, this, dates, audio, video

## thursday

**read:** ch 14

**book exercise:** 14-mouse trail

**studio 4:** sketches, assets

**project:** background research

**studio**

**view:** studio 3...describe why you think it's well-designed (as per your blog entry)

if you had any code discoveries, tell us

### considerations:

you must use DOMContentLoaded and link to the js in your header

if you post to the Discussion forum, add a link to your repository

make sure you read assignments carefully and check requirements

**introduce:** studio 4, time is on my side

[Trump Ticker](#), [blacknegative.com](#)

Patrice Ehlert, Samantha Manning, Tim Stapleton, Kat Fukui, Lien Do

random

## Math.random()

```
Math.random(); // returns a number between 0 (inclusive) and 1 (exclusive)
```

the result could be 0.5295967489150062

```
Math.floor((Math.random() * 10) + 1); // other methods include Math.round() and Math.ceil()
```

returns a number between 1 and 10

hover to see  
a random number

**codepen:**  
Math.random



**codepen:**  
image demo preload random

practice: add random



## timing events

### setTimeout

```
setTimeout(function, milliseconds) // executes a function, after waiting a specified number of milliseconds
```

```
<button id='start'>start timer</button> <button id='start'>Try it</button>
```

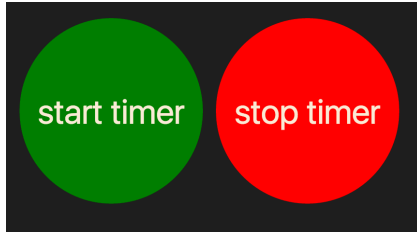
```
var start = document.getElementById('start');  
var alertTimer;  
  
start.addEventListener('click', function(){  
  console.log('clicked start');  
  alertTimer = setTimeout(showAlert, 3000);  
});  
  
function showAlert(){  
  alert('3 seconds have passed');  
}
```

### clearTimeout

```
clearTimeout(timeoutVariable)
```

```
<button id='stop'>stop timer</button>
```

```
var stop = document.getElementById('stop');  
var alertTimer;  
  
stop.addEventListener('click', function(){  
  console.log('clicked stop');  
  clearTimeout(alertTimer);  
});
```

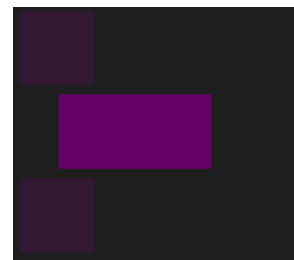


codepen:  
setTimeout



codepen:  
tooltips

this



codepen:  
this

EAT. SLEEP. DESIGN.

on paper first

codepen:  
tooltips revisited

## setInterval

```
setInterval(function, milliseconds) // same as setTimeout(), but repeats the execution of the function continuously
```

```
<button id='start'></button>
```

```
var start = document.getElementById('start');  
var pixellInterval;
```

```
start.addEventListener('click', function(){  
  pixellInterval = setInterval(moveDiv, 100);  
});
```

```
function moveDiv(){  
  // statements here  
}
```

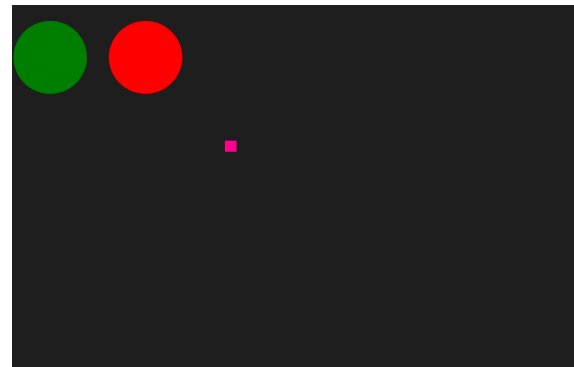
## clearInterval

```
clearInterval(intervalVariable)
```

```
<button id='stop'></button>
```

```
var stop = document.getElementById('stop');  
var pixellInterval;
```

```
stop.addEventListener('click', function(){  
  clearInterval(pixellInterval);  
});
```



codepen:  
setInterval

## requestAnimationFrame

better than setInterval sometimes because:

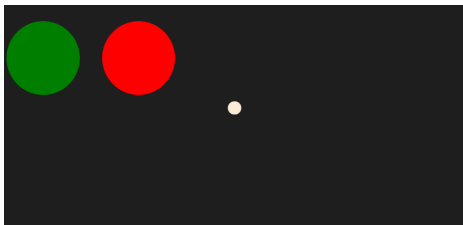
the browser can optimize it, so animations will be smoother  
animations in inactive tabs will stop, allowing the CPU to chill  
more battery-friendly

```
requestAnimationFrame(function, milliseconds)
```

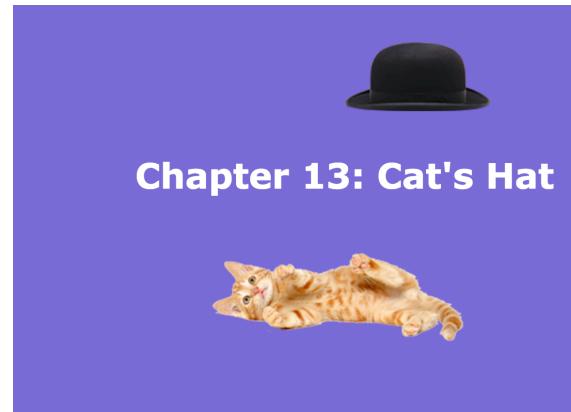
```
var globalID;  
  
function repeatOften() {  
  // statements here  
  globalID = requestAnimationFrame(repeatOften);  
}  
  
start.addEventListener('click', function() {  
  globalID = requestAnimationFrame(repeatOften); // recursive  
});
```

## cancelAnimationFrame

```
var globalID;  
  
function repeatOften() {  
  // statements here  
  globalID = requestAnimationFrame(repeatOften);  
}  
  
start.addEventListener('click', function() {  
  globalID = requestAnimationFrame(repeatOften); // recursive  
});  
  
stop.addEventListener('click', function() {  
  cancelAnimationFrame(globalID);  
});
```



codepen:  
requestAnimationFrame



ch 13 homework used:  
requestAnimationFrame

## getDate()

## Date()

```
// four ways to get a Date object  
  
new Date()  
new Date(milliseconds)  
new Date(dateString)  
new Date(year, month, day, hours, minutes, seconds, milliseconds)
```

## date get methods

Method	Description
getDate()	Get the day as a number (1-31)
getDay()	Get the weekday as a number (0-6)
getFullYear()	Get the four digit year (yyyy)
getHours()	Get the hour (0-23)
getMilliseconds()	Get the milliseconds (0-999)
getMinutes()	Get the minutes (0-59)
getMonth()	Get the month (0-11)
getSeconds()	Get the seconds (0-59)
getTime()	Get the time (milliseconds since January 1, 1970)

## date set methods

Method	Description
setDate()	Set the day as a number (1-31)
setFullYear()	Set the year (optionally month and day)
setHours()	Set the hour (0-23)
setMilliseconds()	Set the milliseconds (0-999)
setMinutes()	Set the minutes (0-59)
setMonth()	Set the month (0-11)
setSeconds()	Set the seconds (0-59)
setTime()	Set the time (milliseconds since January 1, 1970)

## date compare methods

```
var today = new Date();
var someday = new Date(2100, 0, 14);
var text;

if (someday > today) {
  text = "Today is before January 14, 2100.";
} else {
  text = "Today is after January 14, 2100.";
}
console.log(text);
```

how can you use this?

**39 days until St. Patty's!**

**codepen:**  
Date()

## audio, video

## audio/video types and html

audio: mp3, ogg

```
<audio controls>
  <source src="horse.ogg" type="audio/ogg">
  <source src="horse.mp3" type="audio/mpeg">
  Your browser does not support the audio element.
</audio>
```

video: mp4, webm, ogg

```
<video width="320" height="240" autoplay>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
  Your browser does not support the video tag.
</video>
```



## audio/video methods

```
addTextTrack() // adds a new text track to the audio/video  
canPlayType() // checks if the browser can play the specified audio/video type  
load() // re-loads the audio/video element  
play() // starts playing the audio/video  
pause() // pauses the currently playing audio/video  
stop() // stops the currently playing audio/video
```

```
var vid = document.getElementById("myVideo");
```

```
function playVid() {  
  vid.play();  
}
```

```
function pauseVid() {  
  vid.pause();  
}
```

## audio/video onended

```
var vid = document.getElementById('vid');  
vid.addEventListener('ended', myScript);
```



playlist

interrupt

play in order

**example:**  
jukebox