

Introduction to Programming

Class 34, 3 May 2017



SYNC

Sit where you like.

Goals

Goal 1: You will know how to create a simple 2D computer animation.

Vocabulary

draw (animation) loop

Code

...

WARM UP

**Complete the 3 Cheesey modifications available in
> unit5/cheese.**

- **Run cheesey.html with cheese1.js**
- **Modify and create cheese2.js**
- **Modify and create cheese3.js**

```
function area(r) {  
    var a;  
    // your code here  
    return a;  
}
```

WARM UP

cheese2.js

```
function drawCheese() {  
  // Code to draw green cheese  
  noStroke(); //no border  
  fill(myGreen); // green fill  
  arc(myX, myY, 175, 175, PI * 1.30, PI * 1.70);  
  fill(0); // black fill  
  ellipse(50, 45, 15, 15); // a hole  
  ellipse(80, 70, 20, 20); // a hole  
  ellipse(75, 30, 10, 10); // a hole  
}
```

WARM UP

cheese3.js

```
function drawCheeseWithPosition(x, y) {  
  // Code to draw green cheese  
  noStroke(); //no border  
  fill(myGreen); // green fill  
  arc(x, y, 175, 175, PI * 1.30, PI * 1.70);  
  fill(0); // black fill  
  ellipse(x-25, y-55, 15, 15); // a hole  
  ellipse(x+5, y-30, 20, 20); // a hole  
  ellipse(x, y-70, 10, 10); // a hole  
}
```

WARM UP

cheese4.js

WHAT??!!

```
function drawCheeseWithColor(c) {  
  // Generate random x and y values  
  var x = random(0, width);  
  var y = random(0, height);  
  // Code to draw cheese  
  noStroke(); //no border  
  fill(c); // green fill  
  arc(x, y, 175, 175, PI * 1.30, PI * 1.70);  
  fill(0); // black fill  
  ellipse(x-25, y-55, 15, 15); // a hole  
  ellipse(x+5, y-30, 20, 20); // a hole  
  ellipse(x, y-70, 10, 10); // a hole  
}
```

EXAMPLE

Animation (Draw) Loop

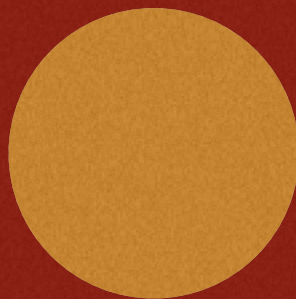
```
// P5 sketch template

function setup() {
  // Code that will be run once
}

function draw() {
  // Code that will loop indefinitely
}
```

EXAMPLE

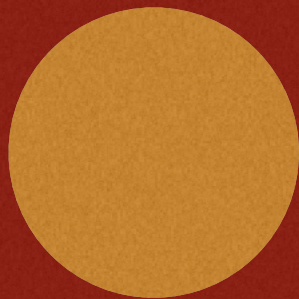
Animation (Draw) Loop



Circle is completely defined by x and y of its center and its diameter.

EXAMPLE

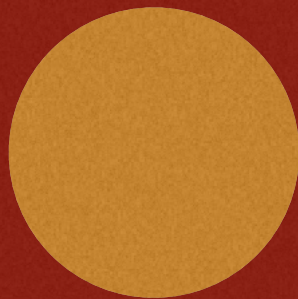
Animation (Draw) Loop



X = 50
Y = 100
D = 40

EXAMPLE

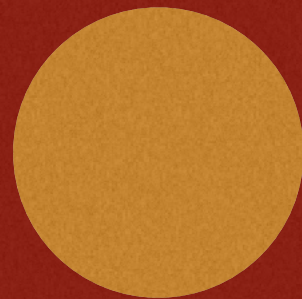
Animation (Draw) Loop



X = 70
Y = 100
D = 40

EXAMPLE

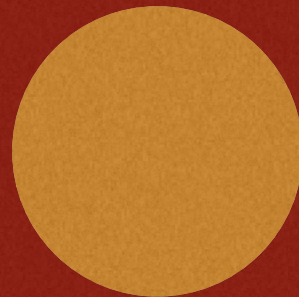
Animation (Draw) Loop



X = 90
Y = 100
D = 40

EXAMPLE

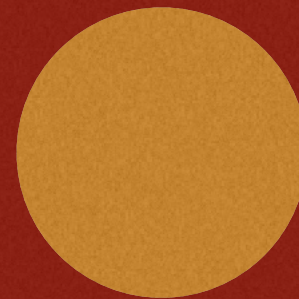
Animation (Draw) Loop



X = 110
Y = 100
D = 40

EXAMPLE

Animation (Draw) Loop

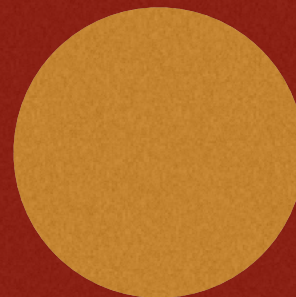


X = 130
Y = 100
D = 40

EXAMPLE

Animation (Draw) Loop

y and diameter are held
constant, but x changes
every FRAME



DO

Draw a circle that moves across the screen from left to right.

DO

Draw a circle that moves across the screen from left to right.

THEN loops back to the right side of screen once it moves off.

DO

Draw a circle that moves across the screen from left to right.

THEN bounces off the right side and moves left.

THEN bounces off of left side and moves right.

DO

Draw a circle that starts moving in a random direction and then bounces off of the walls.

DO

Draw three circles moving in random directions that bounce off the walls.

HW

Complete Task01 - TooClose.html