

Code and Objects

Object-oriented Programming

Vi skaber en slags skabelon for et objekt

F.eks. Biler

Objekter kan have forskellige kendetegn

F.eks. Biler har en farve, har 4 hjul, har forlygter...

Objekter kan have forskellige egenskaber

F.eks. Biler kan køre, kan standse, kan blinke...

Skab et objekt

```
function Bil(color, speed, xpos, ypos, size) {  
    this.color=color;  
    this.speed=speed;  
    ... OSV.
```

```
    this.drive=function() {  
        this.xpos=this.xpos + this.speed;  
        ...  
    }  
}
```

→ Objekt defineres ligesom en funktion.

→ Argumenterne i objektet "matches" med variabler i funktioner udført på objekterne.

→ Således defineres funktionerne.

Definer dit objekt

Hvis du vil have flere af et objekt (flere biler, flere bolde, el. lign.) giver det mening at lave et array:

```
var bil= [ ];
```

```
function setup() {  
  bil [0]=new Bil(color(255,0,0),10,10,100,20);  
  bil [1]=new Bil(color(0,255,0), 5, 10,400,20);  
  bil [2]=new Bil(____...  
}
```

Kald på dit objekt

Hvis du har en lang array af objekter er det nemt at udføre funktioner på dem med et for-loop:

```
function draw () {  
    for (var i=0; i<bil.length ;i++) {  
        bil[i].drive();  
    }  
}
```

Winnie's Code

<https://cdn.rawgit.com/AUAP/AP2017/18dfb50f/class08/sketch08/index.html>

```
1  //sketch88
2
3  // step 1. Declare Objects
4  var car = [];
5  var button;
6  var bg;
7
8
9  function preload() {
10    bg = loadImage("data/road.jpg");
11  }
12  function setup() {
13    createCanvas(windowWidth, windowHeight);
14    button = createButton('add');
15    button.mousePressed(add);
16    //step 2. Initialize object
17    car[0] = new Car(color(255,0,0), 10, 10, 100, 20);
18    car[1] = new Car(color(0,0,255), 15, 20, 300, 10);
19
20  }
21
22  function draw() {
23    background(bg);
24    button.position(0,0);
25
26
27    //step 3. Use object
28    for (var i = 0; i < car.length; i++) {
29
30      car[i].drive();
31      car[i].display();
32    }
33  }
```

```
35 function add() {
36
37     car[car.length] = new Car(color(random(155,255)), random(2,10), random(10,20), random(10,500), random(30));
38
39     //append can be used as well, which has the same effect as line 37
40     //append(car, new Car(color(random(155,255)), random(2,10), random(10,20), random(10,500), random(30)));
41 }
42
43 function Car(getcolor, speed, xpos, ypos, size) {
44
45     this.getcolor = getcolor;
46     this.speed = speed;
47     this.pos = new createVector(xpos, ypos);
48     this.size = size;
49
50     this.drive = function() {
51
52         this.pos.x = this.pos.x + this.speed;
53
54         if (this.pos.x > width) {
55             this.pos.x = 0;
56         }
57
58     }
59
60     this.display = function() {
61         noStroke();
62         fill(this.getcolor);
63         rect(this.pos.x, this.pos.y, this.size, this.size);
64     }
65
66 }
```



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```

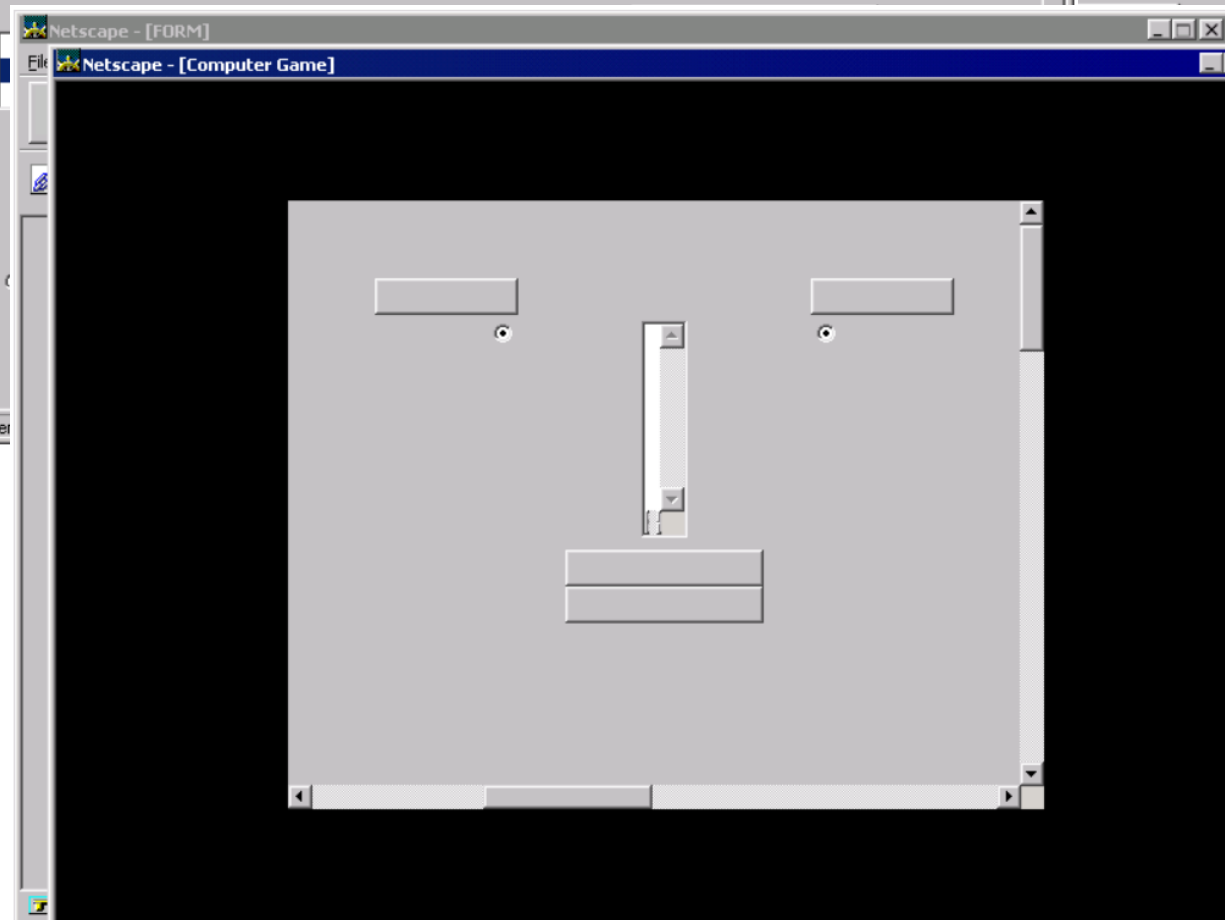
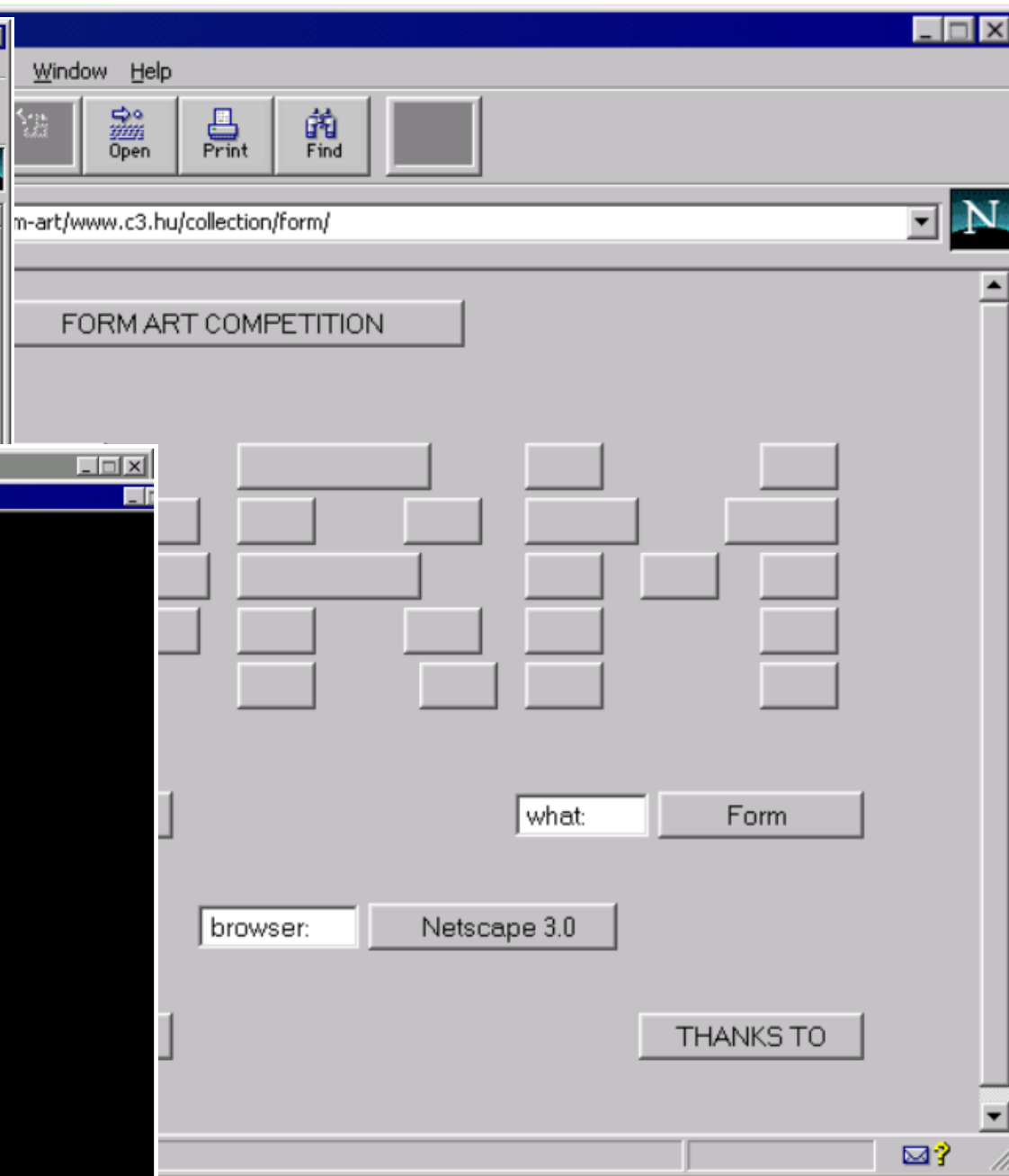
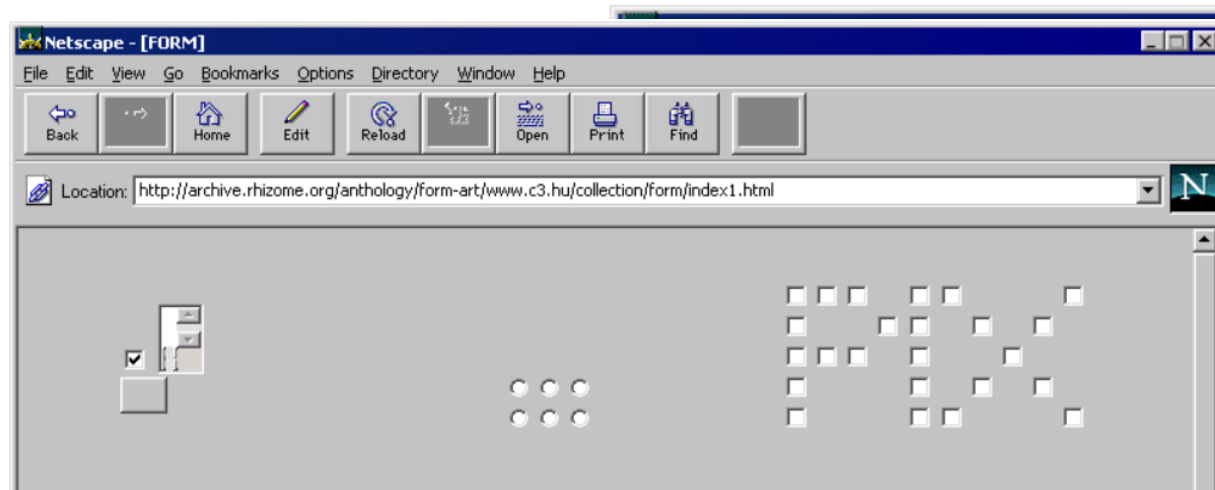
HTML5-objekter

Pre-definerede objekter, som I kan bruge I jeres kode.

F.eks. Knap, slider, checkbox, radio knap...

Kan gøres med P5.dom library's P5.dom-elementer

Reference: <https://p5js.org/reference/#/libraries/p5.dom>



Form Art

Alexei Shulgin "Form Art" (1997):

*"Form Art made a lasting impression because of its **simplicity in shape and color** (all grey), making it emblematic for **early web aesthetics**"* – Josephine Bosma (rhizome.org)

*"What makes Form Art so appealing is how its near-brutal modernist aesthetic relates to the **visual overload of the web**."* – Ifølge Josephine Bosma (rhizome.org)

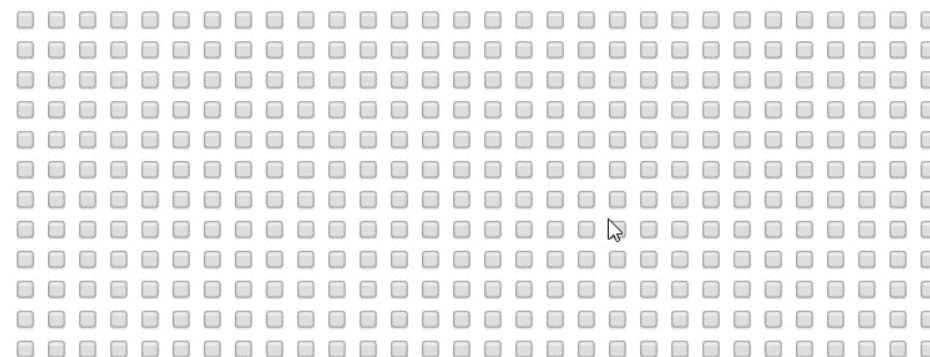
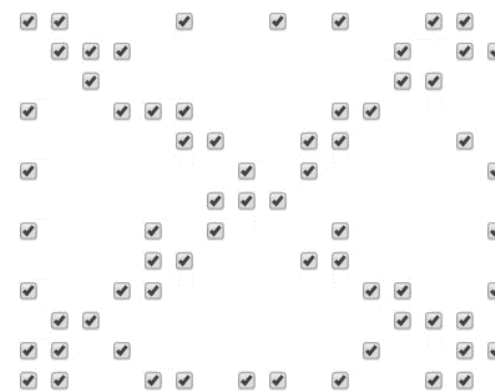
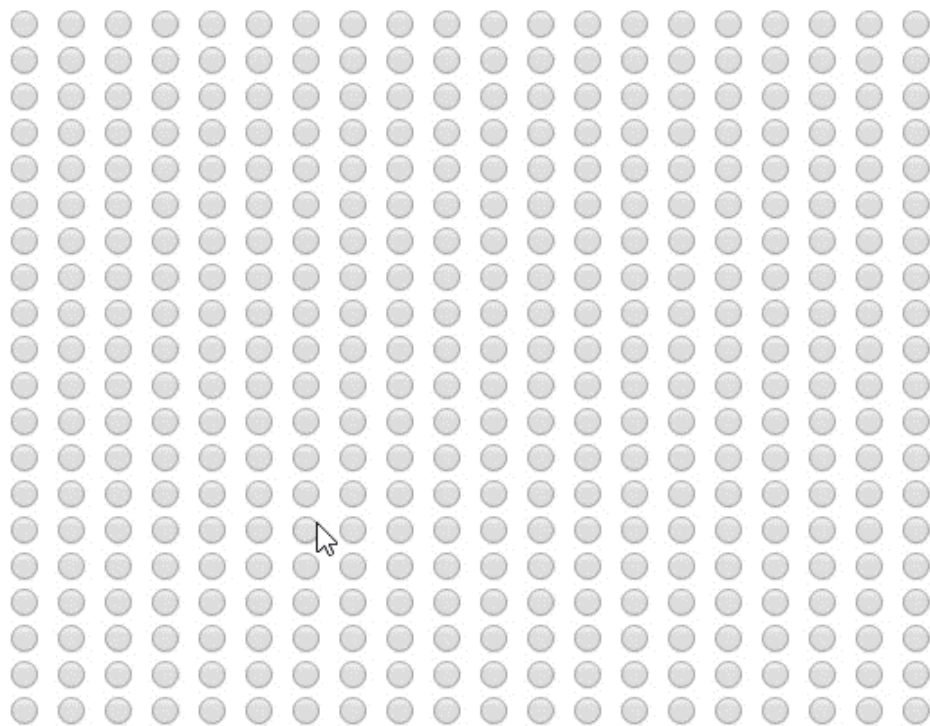
*"focus on their[HTML-objects'] **shapes**, their **position** on a page, and to try to **animate** them."*
– Shulgin

"I don't think it[Form Art] would be possible today, because those input interface elements of a browser I was playing with have now lost their distinctive shapes." – Shulgin

Shiffman Video: "The Slider Dance", er også en slags Form Art

- Hvad er Shiffmans pointe?

Form Art Competition Winners



Hvordan gik det sidst i studiegrupperne?

Fik I noget ud af den feedback I fik?

Var det svært at give feedback, når I ikke kunne fordybe jer så meget i den andens kode?

Er det noget vi skal fortsætte med?

Alt afhængig af jeres feedback:

Sæt jer i Studiegrupper!

Kig på hinandens sidste miniExes

Præsenter de 3 regler og hvordan jeres program er generativt

Stil spørgsmål og giv feedback til hinanden

Tag noter til den feedback I får

MiniEx7

Imagine you are going to apply the "*Form Art Competition*", and you are required to create an *interactive* form art

- with p5.*dom* library and use of *objects*.

Diskutér i README:

- The general notion of object in object-oriented programming language AND HTML5 objects in p5.dom.
- What are the advantages in using objects and what might be the limitations?
- What's your experience in using objects?