

## Particle

constructor

config: ParticleConfig,  
position: Vector  
startVelocity: Vector

color and size  
configuration

Definition  
position  
velocity  
alive  
canvasRenderingContext2D

color =

back  
[color]

update

add velocity  
to this position

lifetime  
 $= -1$

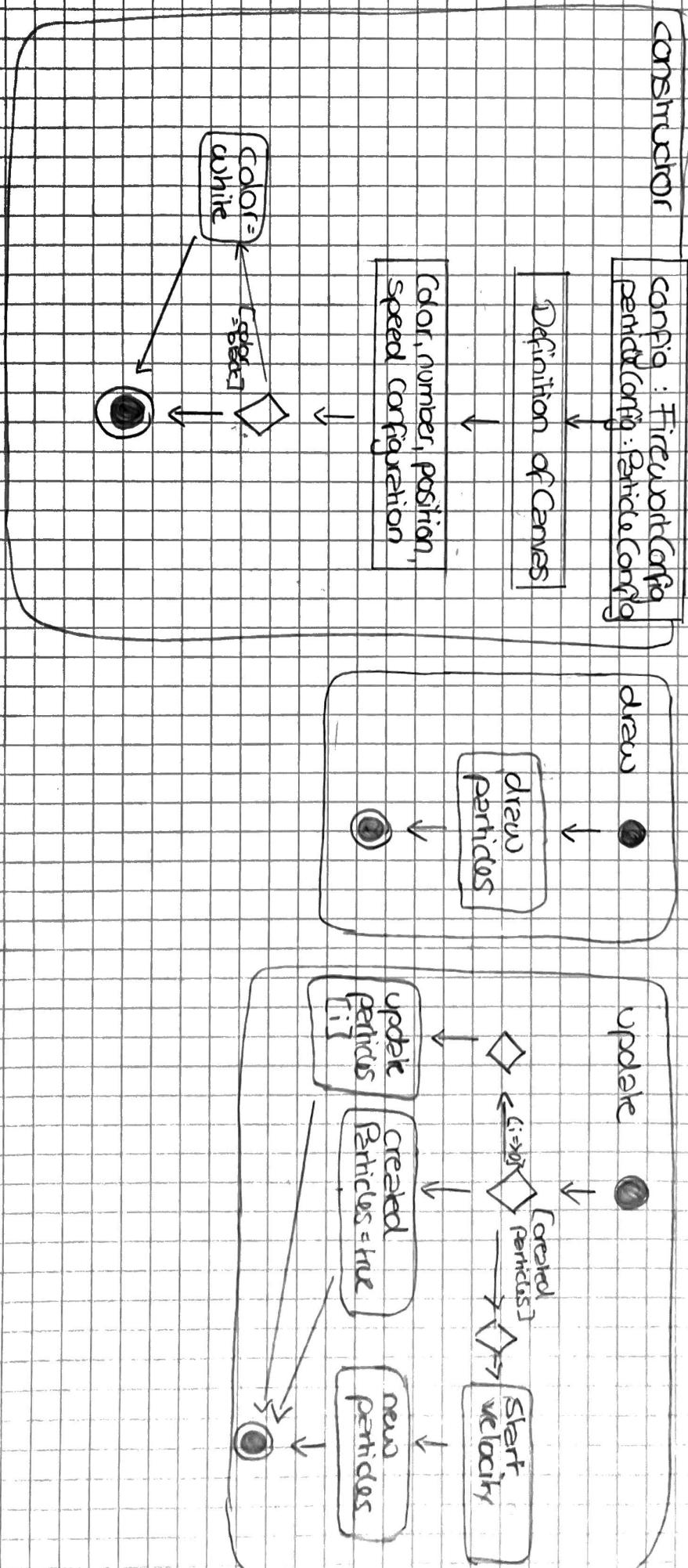
[Lifetime]  
 $<= 0$   
this.alive  
 $= \text{false}$

draw

$= \text{false}$   
[alive]

draw  
Particle

# Firework



1

2

3

main

load → click → click → load firework → ①

load  
handleLoad(m) → ②

click  
saveFirework(m) → ③

handleLoad(m)

let canes: HTMLCanvasElement;

let crs2: CanvasRenderingContext2D;

let fireworks: Firework[] = [];

let rect: DOMRect;

let red: number = 255;

let name: string = "New Firework";

let color: string = "#ffcc00";

let redNumber: number = 255;

let greenNumber: number = 0;

let blueNumber: number = 0;

let numberofParticles: number = 50;

let speed: number = 5;

let size: number = 1;

let width: number = 10;

let inkElements: ...;

↓

changeName

name change

input value

↓

changeBlue /

Green /

Red

↓

value

of blue /

green /

red

↓

update

color

↓

changespeed

assign value

to speed

↓

changesize

assign converted

value to size

↓

assign value to

number of particles

↓

convert input

↓

change Number of Particles

↓

change Name

↓

load

1

2

main

change width()

Assign value  
to width.

handleLoad

selectCanvasForStart  
getCanvas Position

handleClick [e: mouseEvent]

calculate position  
relative to canvas

create [noCanvas]

↓

add EventListenerForCanvasClick  
addEventListenerForSaveButton  
GetCanvas drawingContext

loadSavedFireworkNames

set interval [t]

create fireworkConfig  
(with color, number,  
position, speed  
create Particle Config  
(with color, size, width)

↓

create new firework  
and push object into  
Array

↓

○

drawBackground

create linear gradient

add color stops to gradient

set as fill style and fill canvas

update

call drawBackground

loop through fireworks array

remove firework from array

draw and update firework

Save Firework

create data object with firework properties

create query object, set parameters

send request to server

call loadFireworksNames to refresh list of fireworks

10

11

main

LoadFireworkNemesis

Create query object

Create query object  
(curl searchParams)

Create query object

Send query parameters

Set query parameters

Set query parameters

Send asynchronous request

Send request

Send request

Retrieve and parse response

Retrieve and parse response

Retrieve and parse response

↓

Get available element

Extract Firework configuration from data

Call LoadFirework Nemesis

↓

Clear old list

Assign values to global variables

Call UpdateColor()

↓

Loop through data

Update input fields

Call UpdateColor()

↓

()

10

11

LoadFireworkNemesis

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(curl searchParams)

Create query object

Send query parameters

Set query parameters

Set query parameters

Send asynchronous request

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Retrieve and parse response

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()