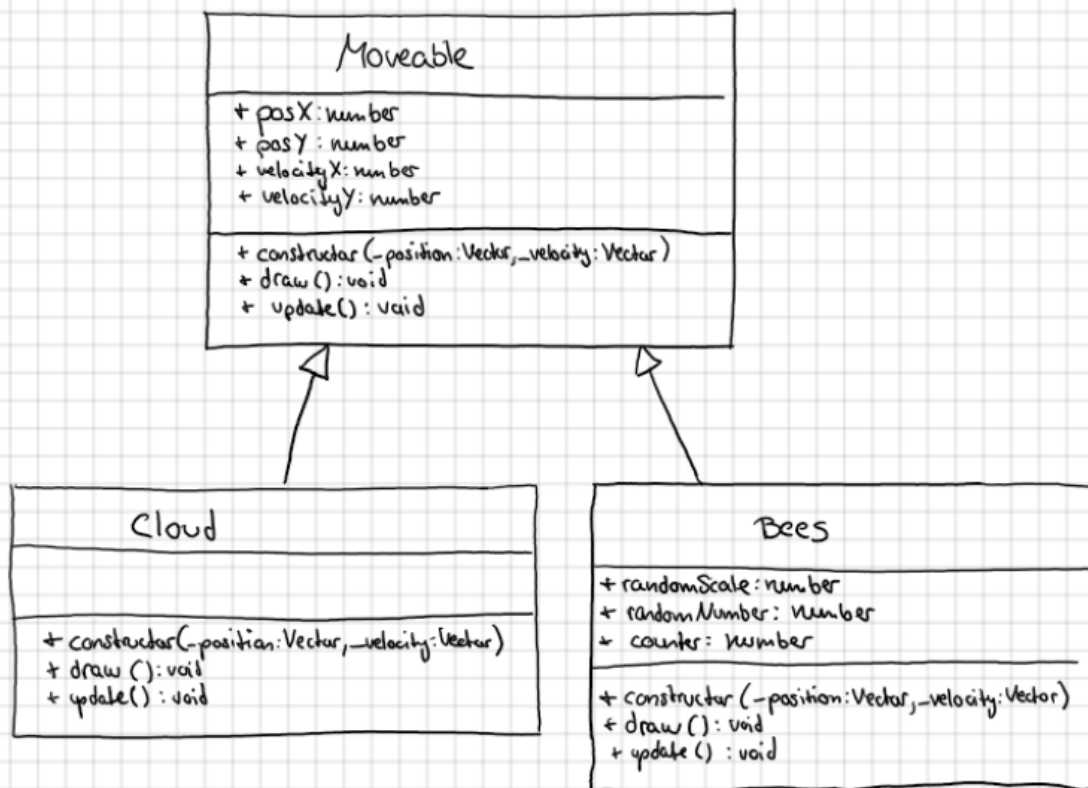L10.2 Bienen Blumenwiese Canvas Konzeption

L10.2 Class-Diagram Moveable

Moveable

+ posX: number
+ posY: number
+ velocityX: number
+ velocityY: number

+ constructor (_position: Vector, _velocity: Vector)
+ draw (): void
+ update (): void

Cloud

+ constructor(_position: Vector, _velocity: Vector)
+ draw (): void
+ update (): void

Bees

+ randomScale: number
+ randomNumber: number
+ counter: number

+ constructor (_position: Vector, _velocity: Vector)
+ draw (): void
+ update (): void

L10.2 Activity-Diagram

Vector

+ x : number
+ y : number

● (start)

```
let crc2 : Canvas Rendering Context 2D;
let golden : number = 0,62;
let moveables : Moveables [] = [];
let flowers : Flowers [] = [];
let imageData : Image Data;
```

↓

(Install load – listener)

◉

---

load ▷
↓
(handle Load rth)
↓
◉

---

handle Load ●

```
let canvas : HTML Canvas Element
= <HTML Canvas Element> document.
query Selector (" canvas"
```
↓
(Create Background ( ) rth)
↓
(draw Flowers ()
  multiple Flowers ( ) rth)
↓
(Create Cloud() rth)
↓
(Create Bees) rth)
↓
(animate ( ) rth)
↓
◉

Create Background ●

| let horizon : number = crc2.canvas.height * golden |

```
draw Background ( );
drawSun ({x : crc2.canvas.width /2 , y : crc2.canvas.height * 0.15});
draw Mountains ({x : 0, y : horizon}, 75, 200, "grey", "white");
draw Mountains ({x : 0, y : horizon}, 50, 150, "grey", "lightgrey");
drawBeeHive ( );
multiple Flowers ();
draw Flowers();
```
↓
◉

---

multiple Flowers ●

| let redFlower : Flowers = new Flowers ( ); |
↓
(flowers.push (red Flower);)
↓
| let orange Flower : Flowers = new Flowers ( ); |
↓
(flowers.push (orange Flower);)
↓
◉

---

draw Flowers ●

```
let red Flower of flowers
let random X : number = Math.floor(Math.random() * 900);
let random Y : number = Math.floor(Math.random() * 200);
redFlower.drawRedFlower(random X + 200, random Y + 470);
```

```
let orange Flower of flowers
orangeFlower.drawOrangeFlower(random X + 400, random Y + 470);
```
↓
◉

Create Bees

_nBee : number

```
let index : number = 0;
index < _nBee; index ++
```

```
let randomScale : number = 0,5 +
Math.random() * 2.5 - 1.3);
let randomVelocityX : number;
let randomVelocityY : number;
```

Moveables.push (<Moveable>new Bees)

Create Cloud

```
moveables.push (<Moveable>new Cloud)
moveables.push (<Moveable>new Cloud)
```

animate

```
requestAnimationFrame (animate);
crc2.clearRect
crc2.putImageData (imageData, 0, 0)
```

let index : number = 0

index ++

[index > moveables.length]

[index < moveables.length]

moveables [index].update ()

let index : number = 0

index ++

[index < moveable.length]

[moveable [index].update ()]