02

OPEN ORIENTED

凹 凸 实 验 室

初识PixiJS

替代 creates 的高效框架

CSS 开启硬件加速

「 translate3d/rotate3d/scale3d/skew3d/matrix3d/will-change 」

Canvas 开启硬件加速

「 var ctx = canvas.getContext(‘webGL’) 」

WebGL 兼容性

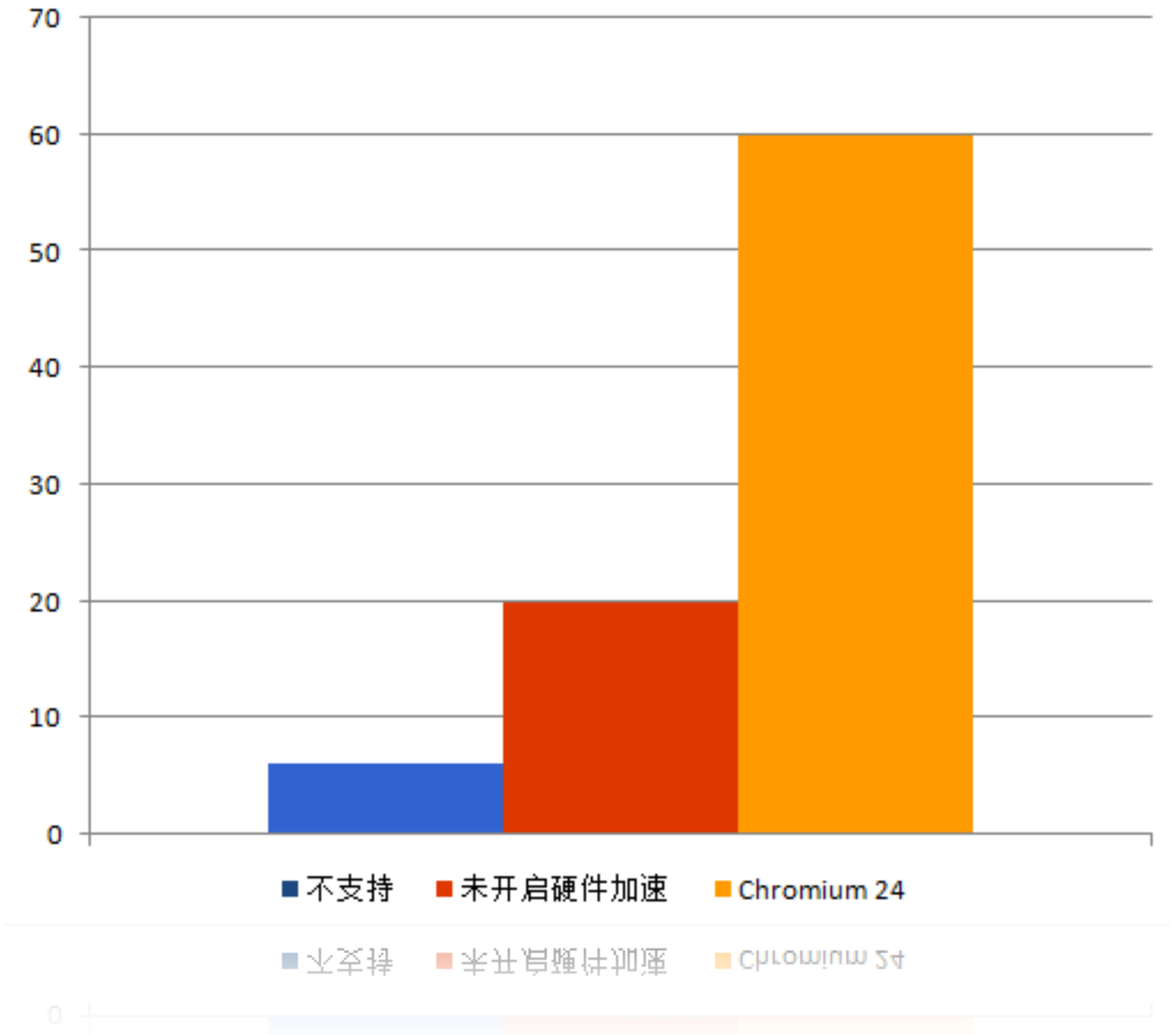
「 X5内核全面支持；iOS支持良好；Android 5–6.x 以上支持」

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Blackberry Browser	Opera Mobile *	Chrome for Android	Firefox for Android	IE Mobile	UC Browser for Android	Samsung Internet	QQ Browser	Baidu Browser
		42	47	3.2	34												
		43	48	4	35	3.2											
		44	49	5	36	4.1											
		45	50	[1] 5.1	37	4.3		2.1									
		46	51	[1] 6	38	5.1		2.2									
		47	52	[1] 6.1	39	6.1		2.3									
		48	53	[1] 7	40	7.1		3									
6		49	54	[1] 7.1	41	8		4									
7		50	55	8	42	8.4		4.1									
8	[1] 12	51	56	9	43	9.2		4.3									
9	[1] 13	52	57	9.1	44	9.3		4.4		12							
10	[1] 14	53	58	10	45	10.2		4.4.4	7	12.1			10		4		
[1] 11	[1] 15	54	59	10.1	46	10.3	all	56	10	37	59	54	[1] 11	[1] 11.4	5	1.2	7.12
	[1] 16	55	60	11	47	11											
		56	61	TP	48												
		57	62														

WebGL - 3D Canvas graphics

40
42
6.0
6.1
6.2
6.3
6.6
6.8
6.9
1.4
2.0
2.1
2.2
2.3

WebGL 性能提升


70
60
50
40
30
20
10
0
不支持
未开启硬件加速
Chromium 24

WebGL 从学习到放弃

「 高昂的学习成本 & 2D降级 」

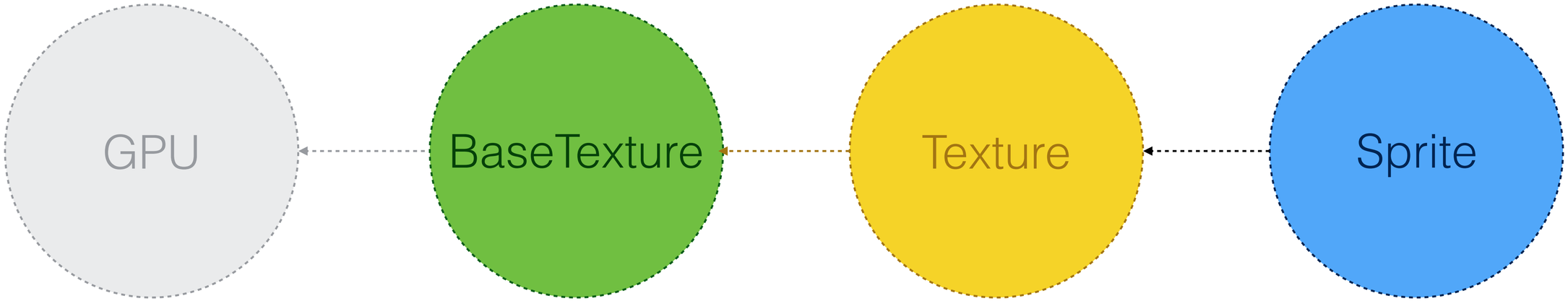
PixiJS

「 1. WebGL加速；2. 面向2D；3. 低学习门槛 」

PixiJS 入门

1. Texture & BaseText & Sprite
2. PIXI.loader
3. Tilesets & Texture atlas
4. Container & ParticleContainer
5. Graphics

Texture & BaseText & Sprite



Texture & BaseText & Sprite

PixiJS

CreateJS

Texture & BaseText & Sprite

创建 Sprite

```
var base = new PIXI.BaseTexture(image);
var texture = new PIXI.Texture(base);
var sprite = new PIXI.Sprite(texture);
base.on("loaded", function() {
    console.log("image 载入成功");
});
```

```
var texture = new PIXI.Texture.fromImage(image);
var sprite = new PIXI.Sprite(texture);
texture.basetexture.on("loaded", function() {
    console.log("image 载入成功");
});
```

```
var sprite = new PIXI.Sprite.fromImage(image);
texture.texture.basetexture.on("loaded", function() {
    console.log("image 载入成功");
});
```

PIXI.loader

国内教程的加载

```
var img = new Image();
img.src = 'bunny.png';
img.onload = function(){
    var baseTexture = new PIXI.BaseTexture(this);
    var texture = new PIXI.Texture(baseTexture);
    var sprite = new PIXI.Sprite(texture);
    stage.addChild(sprite);
    renderer.render(stage);
}
```

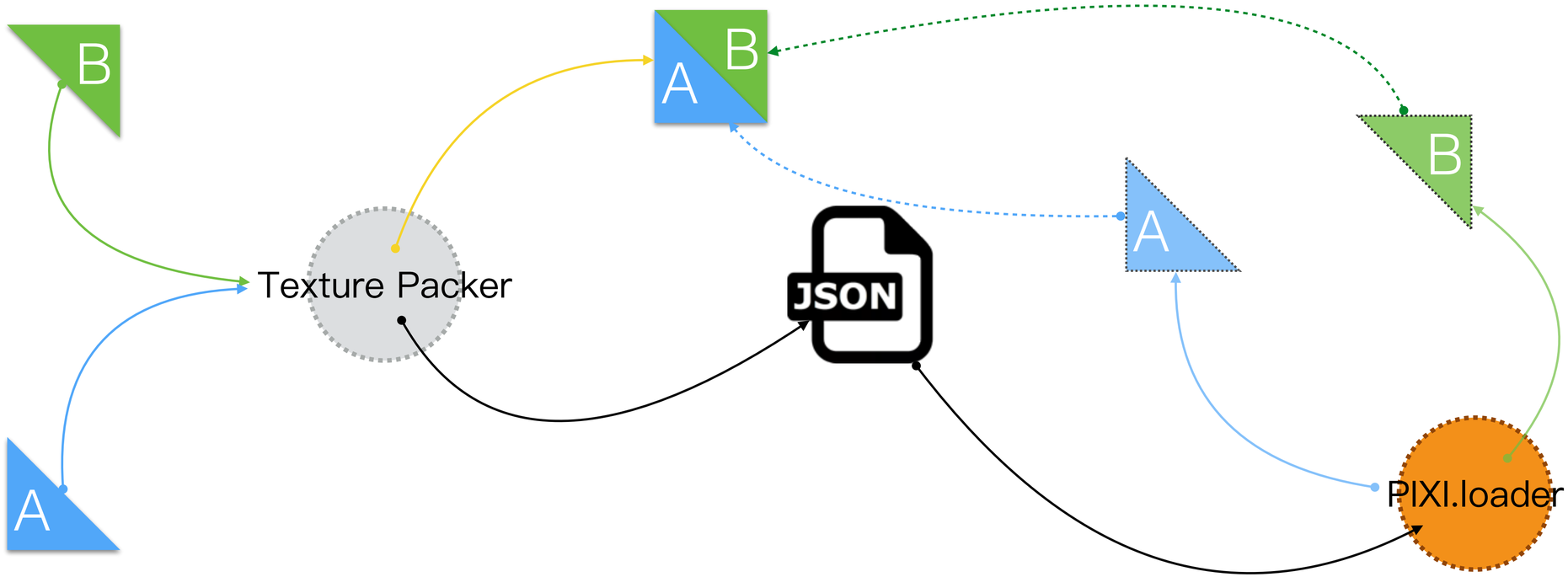
```
PIXI.loader
    .add('bunny')
    .load(function() {
        var sprite = new PIXI
            PIXI.loader.resources['bunny'].texture
        );
        stage.addChild(sprite);
        renderer.renderer(stage);
    })
```

PixiJS 推荐加载

Tilesets & Texture atlas

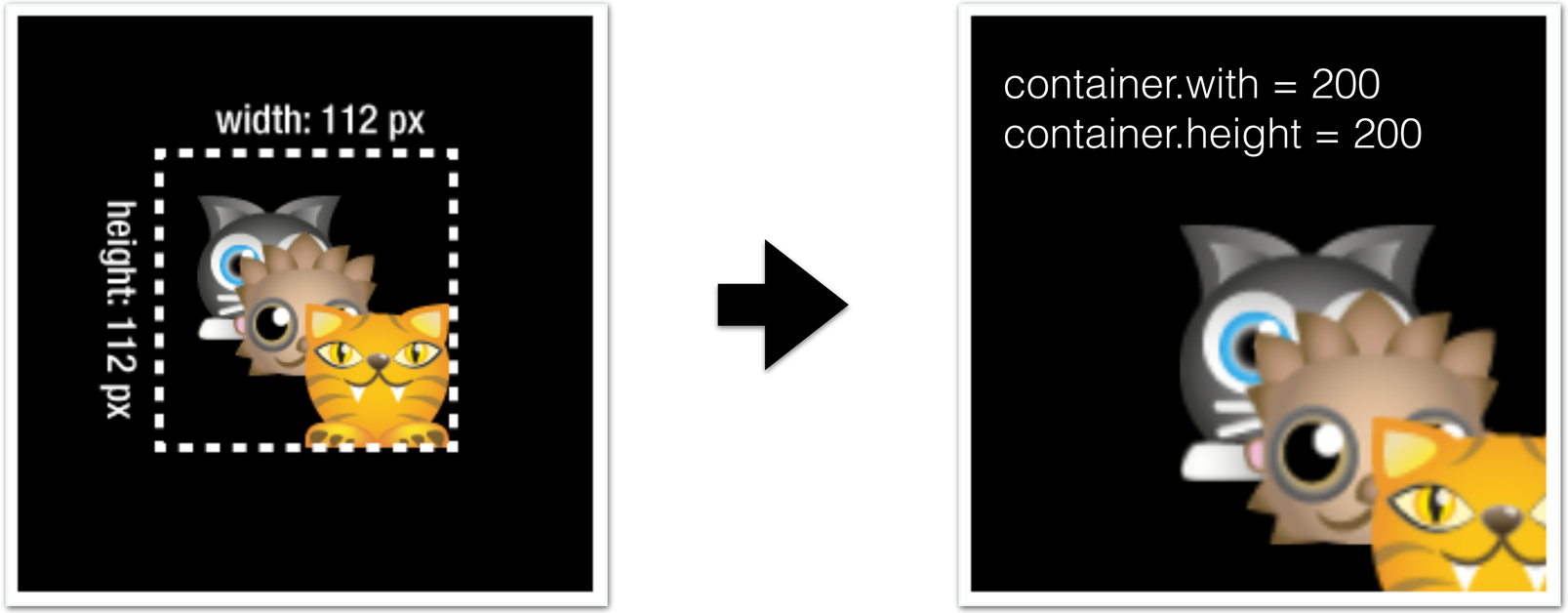
Tilesets: 雪碧图

Texture atlas: 罗列Tiles(图片)的位置、大小和初始化信息，它通常一个 Json 文件



Container & ParticleContainer

PixiJS的Container 有宽高尺寸，并且可以更改它的尺寸。



Container & ParticleContainer

Pixi has an alternative, high-performance way to group sprites called a ParticleContainer (PIXI.ParticleContainer). Any sprites inside a ParticleContainer will render 2 to 5 times faster than they would if they were in a regular Container. It's a great performance boost for games.

ParticleContainer 的渲染速度比 Container 高 2~5↑倍

Container & ParticleContainer

Only one Texture

使用雪碧图

Never Nesting

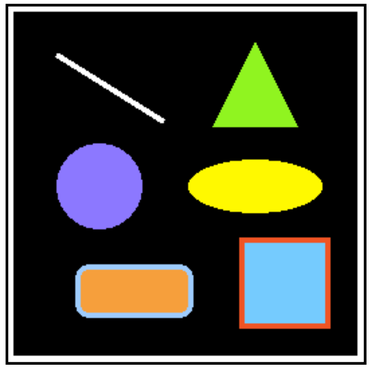
禁止嵌套

A few properties

x, y, width, height, scale, pivot, alpha, visible

Graphics

02



1. Lines - 线段
2. Polygons - 多边形
3. Circles - 圆形
4. ellipsis - 椭圆
5. rectangles - 矩形
6. rounded Rectangles - 圆角矩形

https://github.com/kittykatattack/learningPixi#pixis-graphic-primitives

GSAP

「 Gsap是一个js动画引擎，它就像js动画中的瑞士军刀。它能配合css属性，canvas 对象，各种通用对象进行动画操作。而且它速度很快，超过jquery20倍。google推荐它作为javascript的动画基础库。」

GSAP 的 API 与 creates.Tween 类似

参考资料

- http://www.pixijs.com/tutorials — 官方教程
- https://github.com/pixijs/pixi.js — Github地址
- http://pixijs.download/release/docs/index.html — API文档
- https://greensock.com/docs — GSAP 官方文档
- https://linshuizhaoying.gitbooks.io/gsap-/content/index.html — GSAP中文快速教程

THANKS

FOR YOUR WATCHING

02

OPEN ORIENTED

凹 凸 实 验 室