

H5 动画与游戏开发

---H5 Canvas动画

内容纲要

- 循环动画
- 帧动画
- 重力与碰撞



循环动画

- 循环动画方法

- window.setTimeout () //缺点：不准确，不适合用于动画
- window.setInterval () //同上
- window.requestAnimationFrame () //适合动画实现

- requestAnimationFrame兼容性问题

- window.webkitRequestAnimationFrame ()
- window.mozRequestAnimationFrame ()
- window.oRequestAnimationFrame ()
- window.msRequestAnimationFrame ()

循环动画

- requestAnimationFrame兼容性问题

► Show options = Supported = Not supported = Partially supported = Support unknown

requestAnimationFrame - Working Draft *Usage stats: Global Support 69.59%

API allowing a more efficient way of running script-based animation, compared to traditional methods using timeouts.

[Show all versions](#)

	IE	Firefox	Chrome	Safari	Opera	iOS Safari	Opera Mini	Android Browser	Blackberry Browser	IE Mobile
								2.1		
						3.2		2.2		
						4.0-4.1		2.3		
						4.2-4.3		3.0		
	8.0	22.0 moz				5.0-5.1		4.0		
	9.0	23.0	28.0	5.1		6.0-6.1 webkit		4.1	7.0	
Current	10.0	24.0	29.0	6.0 webkit	16.0	7.0	5.0-7.0	4.2	10.0 webkit	10.0
Near future	11.0	25.0	30.0	7.0	17.0					
Farther future			31.0							

Notes Known issues (1) Resources (4) Feedback [Edit on GitHub](#)

No notes



循环动画

- requestAnimationFrame兼容性解决方案

```
window.requestAnimationFrame = (function(){  
    return window.requestAnimationFrame ||  
        window.webkitRequestAnimationFrame ||  
        window.mozRequestAnimationFrame ||  
        window.oRequestAnimationFrame ||  
        window.msRequestAnimationFrame ||  
        function( callback ){  
            window.setTimeout(callback, 1000 / 60);  
        };  
})();  
(function animloop(){  
    requestAnimationFrame(animloop);  
    render();  
})();
```



循环动画

- 启动动画循环

```
var anim = function(){  
    requestAnimationFrame(anim);  
};  
var animHandle = requestAnimationFrame(anim);
```

- 停止动画循环

```
cancelAnimationFrame(animHandle);
```

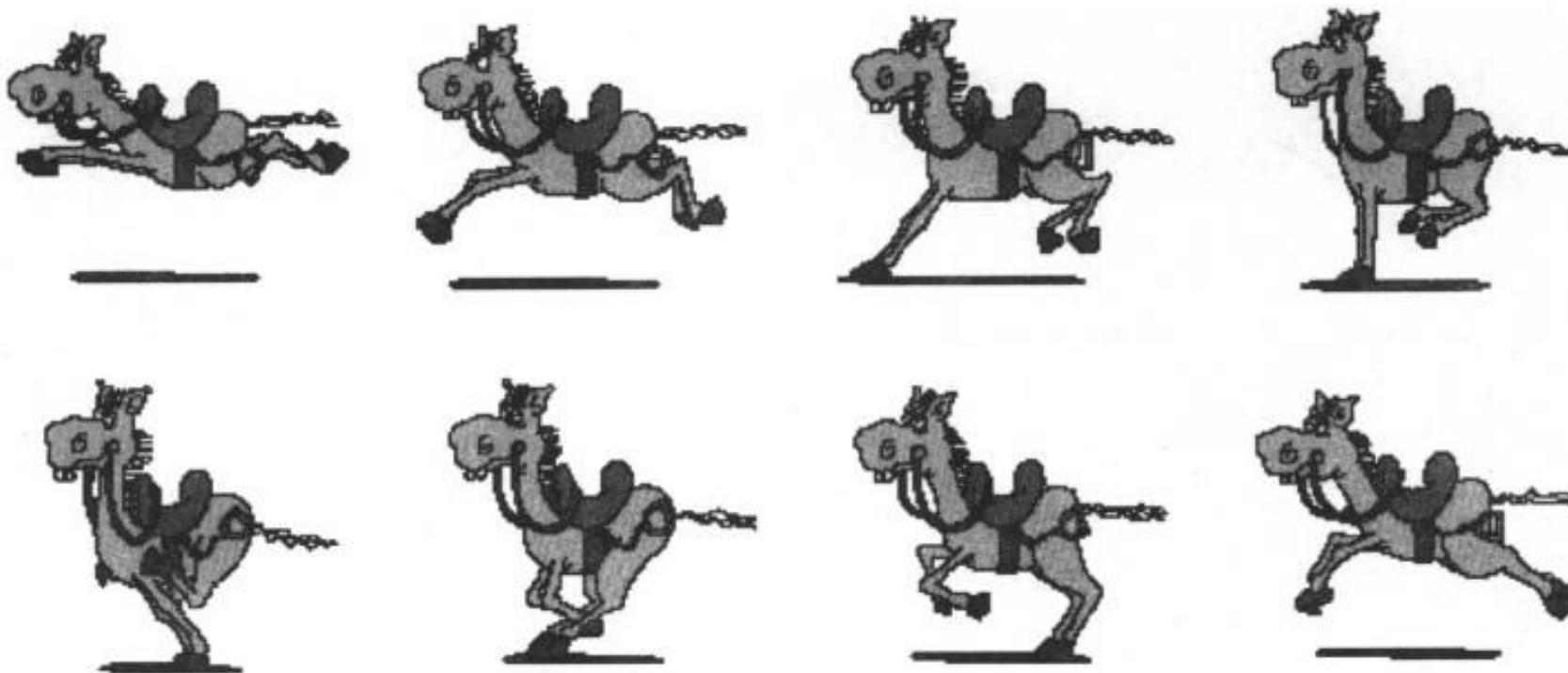
内容纲要

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帧动画

- 帧动画基本形式



内容纲要

- 循环动画
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- **重力与碰撞**



重力与碰撞

- 实现重力加速度

$$F=ma=mg$$

标准重力加速度: 9.80665 m/s^2 ;

参见实例: [LS04_04.html](#)、[LS04_05.html](#)

- 物体碰撞的实现

- 平面碰撞 (角度、速度)
- 物理引擎 (box2d)

参见实例: [LS04_06.html](#)、[LS04_07.html](#)

The background of the slide is decorated with numerous overlapping circles in various shades of green and yellow, scattered across the top and right sides.

Thank You!