

Desenvolvimento de jogos, Javascript e HTML5

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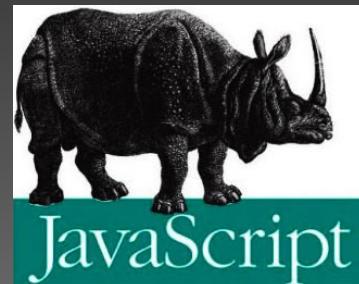
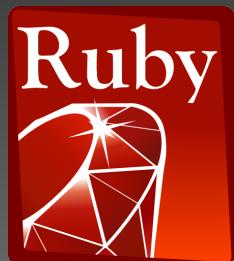
Grupo de usuários Ruby de São Paulo



Equipe de Cloud Computing

Linguagens

Várias! :)



Frameworks e Libs

Varios! \o/



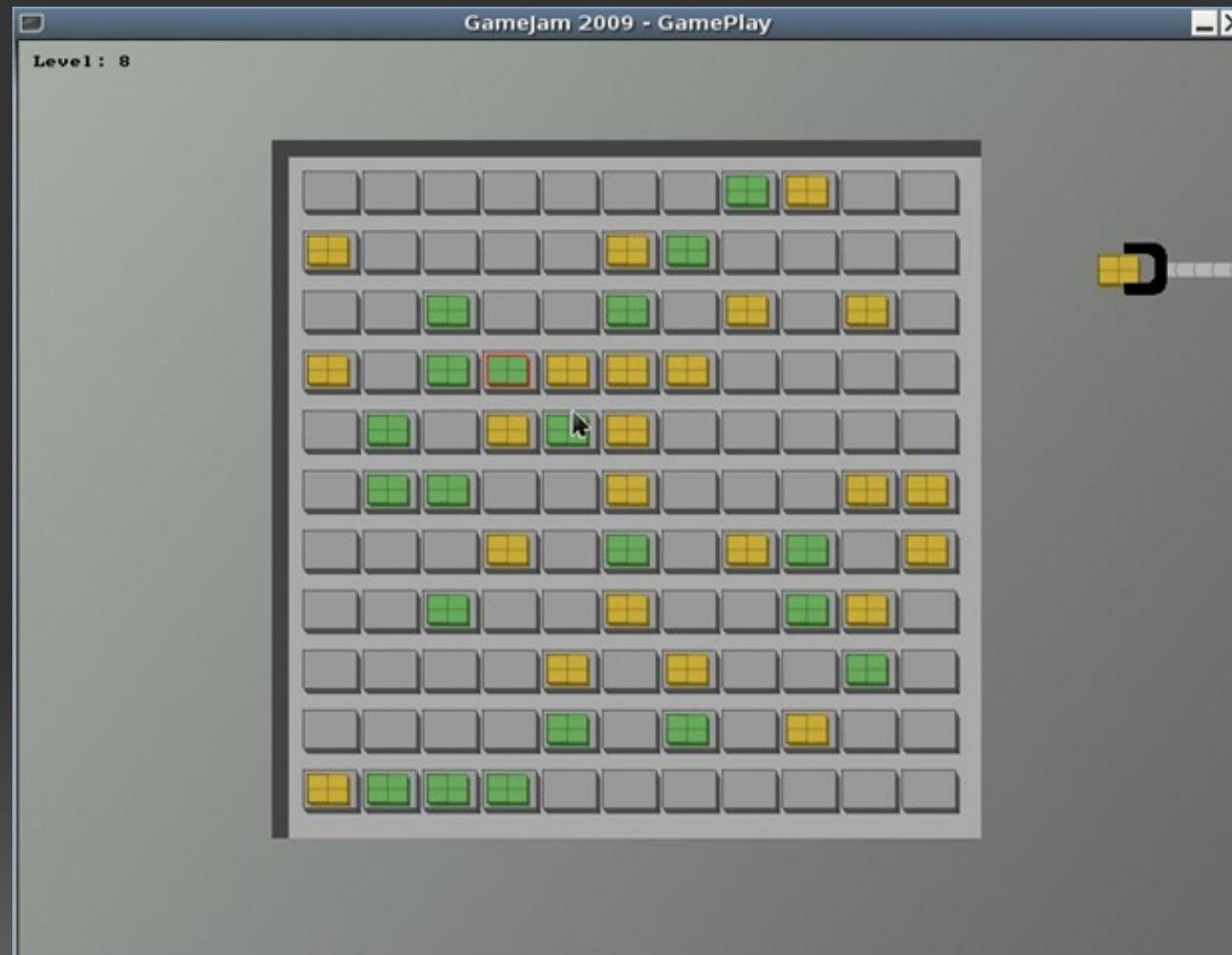
Akihabara A small, stylized illustration of a boy with red hair and glasses, wearing a white shirt. He has a determined or excited expression.



Sou só um cara normal

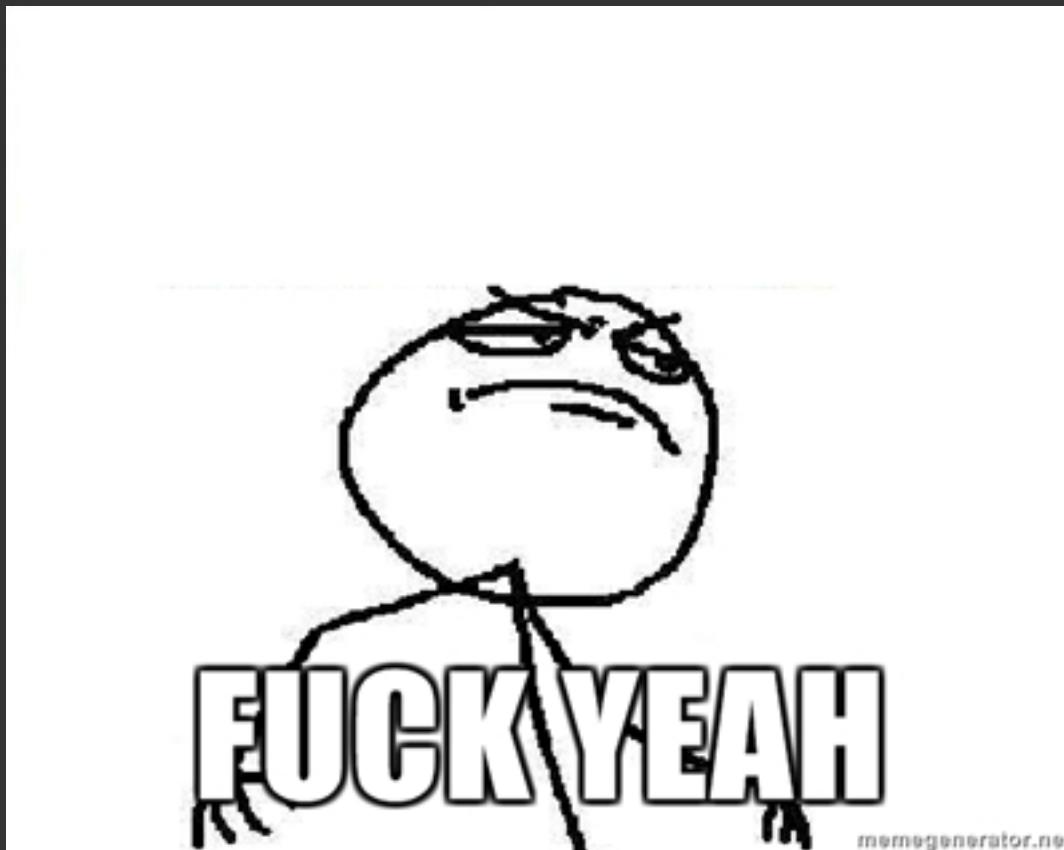
Meu primeiro game

Game contest Itaú cultural



Criado por: @PotHix / @CrociDB

C++
Allegro
Linux / Windows



Vencemos!

Mas depois...



Código difícil

Difícil distribuição

Difícil portabilidade

Malloc()

VC TA DIZENDO QUE



C++ NÃO PRESTA?



Claro que não!

A close-up photograph of a baby with light brown hair and dark eyes. The baby has a neutral to slightly grumpy expression, with thin lips and dark eyes. They are wearing a green and white striped shirt.

HTML5

RULEZ!!11!

HTML5*

Canvas

WebGL

fileSystem

Audio

SVG

WebSockets

Offline cache

Local Storage

Canvas

```
<canvas width="100" height="100" id="game"></canvas>
```

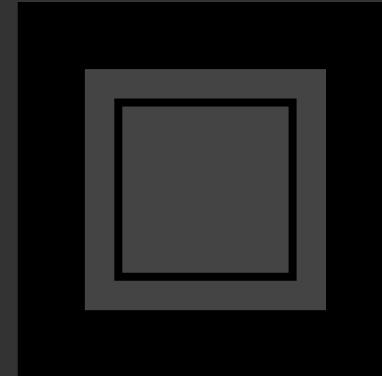
Rect

```
var ctx = document.getElementById("game").getContext('2d');
```

```
ctx.fillRect(25,25,100,100);
```

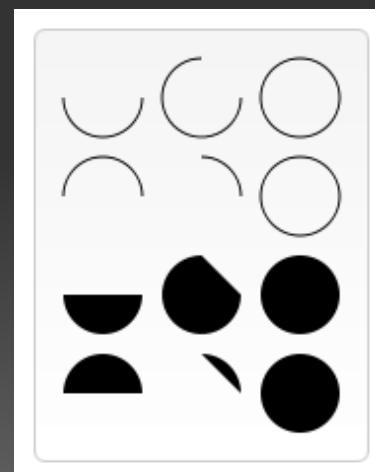
```
ctx.clearRect(45,45,60,60);
```

```
ctx.strokeRect(50,50,50,50);
```



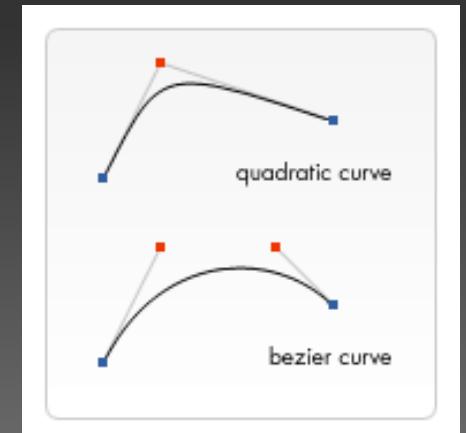
arc()

```
ctx.arc(x,y,radius,startAngle,endAngle, anticlockwise);
```



Linhas e curvas

`quadraticCurveTo()`, `bezierCurveTo()`, `lineTo()`, `moveTo()`



Desenho a mão livre

```
ctx.beginPath();
```

```
// Círculo maior
```

```
ctx.arc(75,75,50,0,Math.PI*2,true);  
ctx.moveTo(110,75);
```

```
// Boca
```

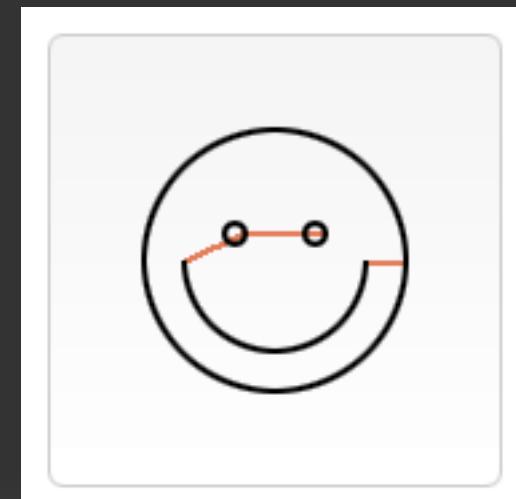
```
ctx.arc(75,75,35,0,Math.PI,false);  
ctx.moveTo(65,65);
```

```
// Olho direito
```

```
ctx.arc(60,65,5,0,Math.PI*2,true);  
ctx.moveTo(95,65);
```

```
// Olho esquerdo
```

```
ctx.arc(90,65,5,0,Math.PI*2,true);  
ctx.stroke();
```



Imagenes

`drawImage(img,cropx,cropy,cropx,cropy,scalex,scaley, cordx, cordy)`

Exemplo de drawImage

```
image = new Image();
image.src = "source/da/imagem.jpg";

// Sempre esperar a imagem carregar antes de colocar no canvas
image.onload = function(){ /* o código do canvas aqui */}

// Apenas a image e sua posição
canvas.drawImage(image, x, y);

// A imagem, suas posições e seu tamanho
canvas.drawImage(image, x, y, width, height);

/* A imagen, onde deve ser cortada, qual vai ser o tamanho do corte, o
tamanho da imagem e onde ela deve ser colocada */
canvas.drawImage(image, cropx, copy, crop_tam_x, crop_tam_y,
scalex, scaley, coordx, coordy);
```

SVG

Scalable Vector Graphics

SVG

SVG Animations

Eric Möller



Porque não é usado?

Falta de editores, suporte e outras coisas

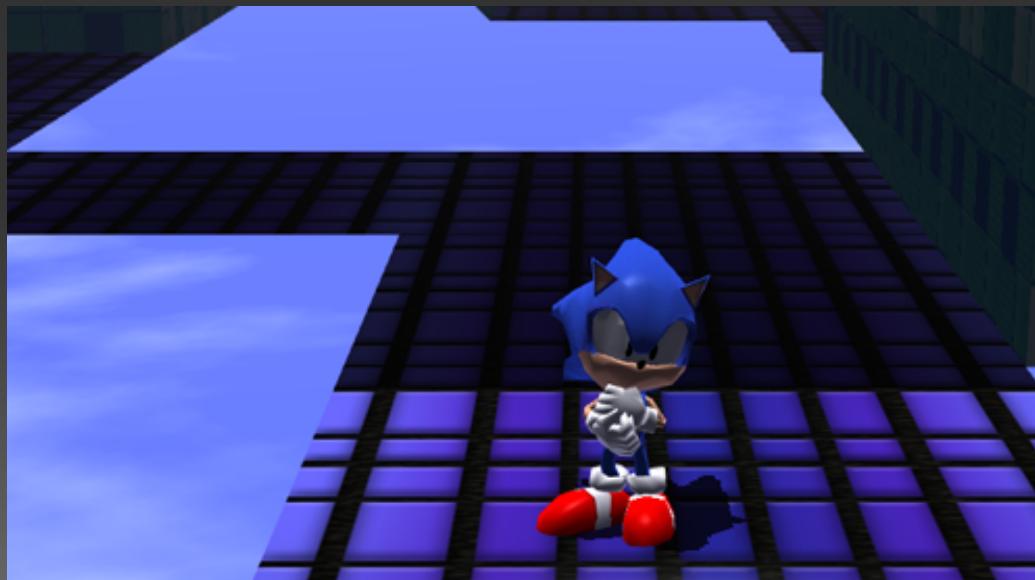
WebGL

OpenGL rodando no browser

WebGL



Quake II GWT: <http://code.google.com/p/quake2-gwt-port/>



WebSonic: <http://forums.sonicretro.org/index.php?showtopic=24965>



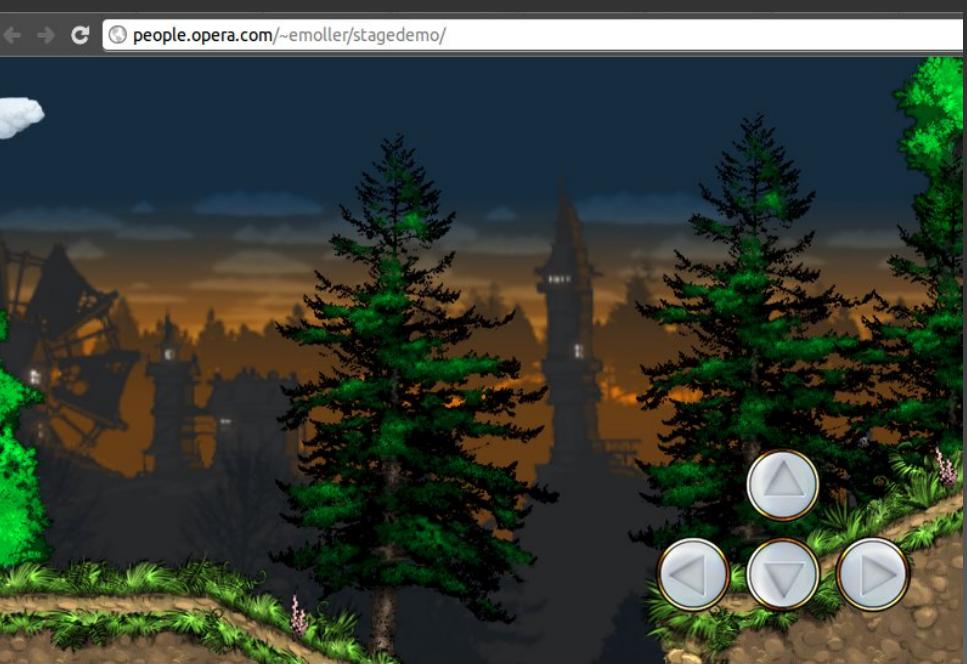
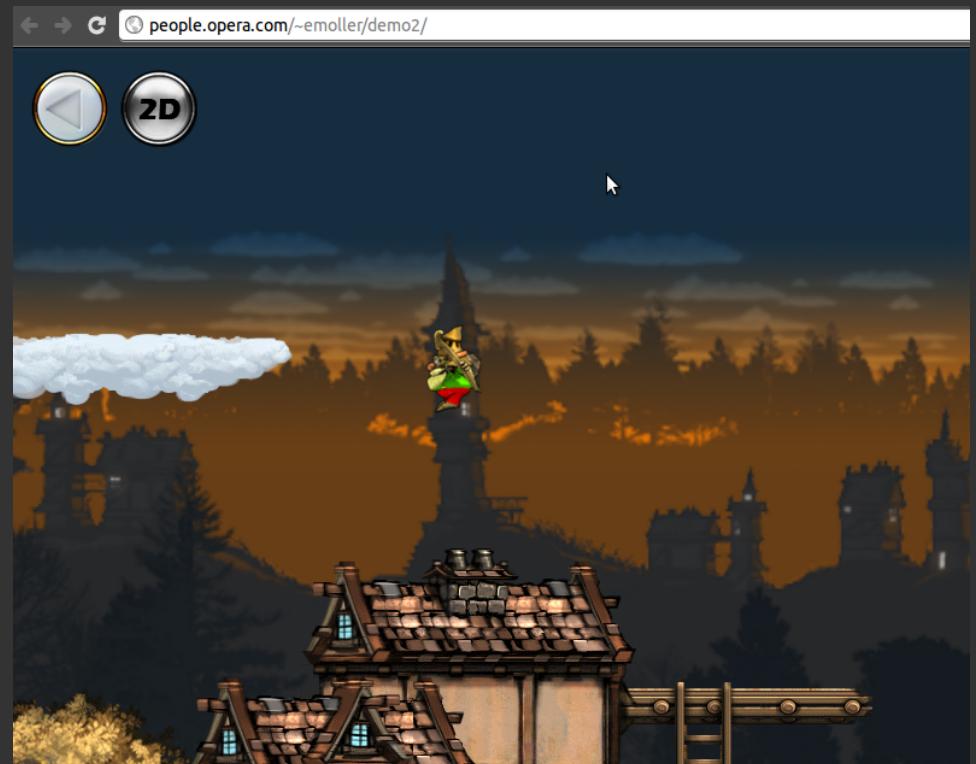
WebGL Rage: <http://code.google.com/p/webgl-ios-rage/>

Acesso direto a GPU

Drivers

Segurança

WebGL



<http://people.opera.com/~emoller/stagedemo>
<http://people.opera.com/~emoller/demo2>

Offline cache

Cache Manifest

<html manifest="/cache.manifest">

Exemplo.manifest

CACHE MANIFEST

revision 1

NETWORK:

<http://www.google-analytics.com>

FALLBACK:

resources/audio resources/audio/silence.mp3

CACHE:

src/maingame_packaged.js

resources/audio/silence.mp3

resources/sprites.png

WebSockets

Exemplo WebSocket

```
var connection = new WebSocket('ws://pothix.com/websocket');

connection.onopen = function () {
    connection.send('funciona!'); // Envia a mensagem para o servidor
};

connection.onerror = function (error) {
    // Código para tratar erro de conexão
};

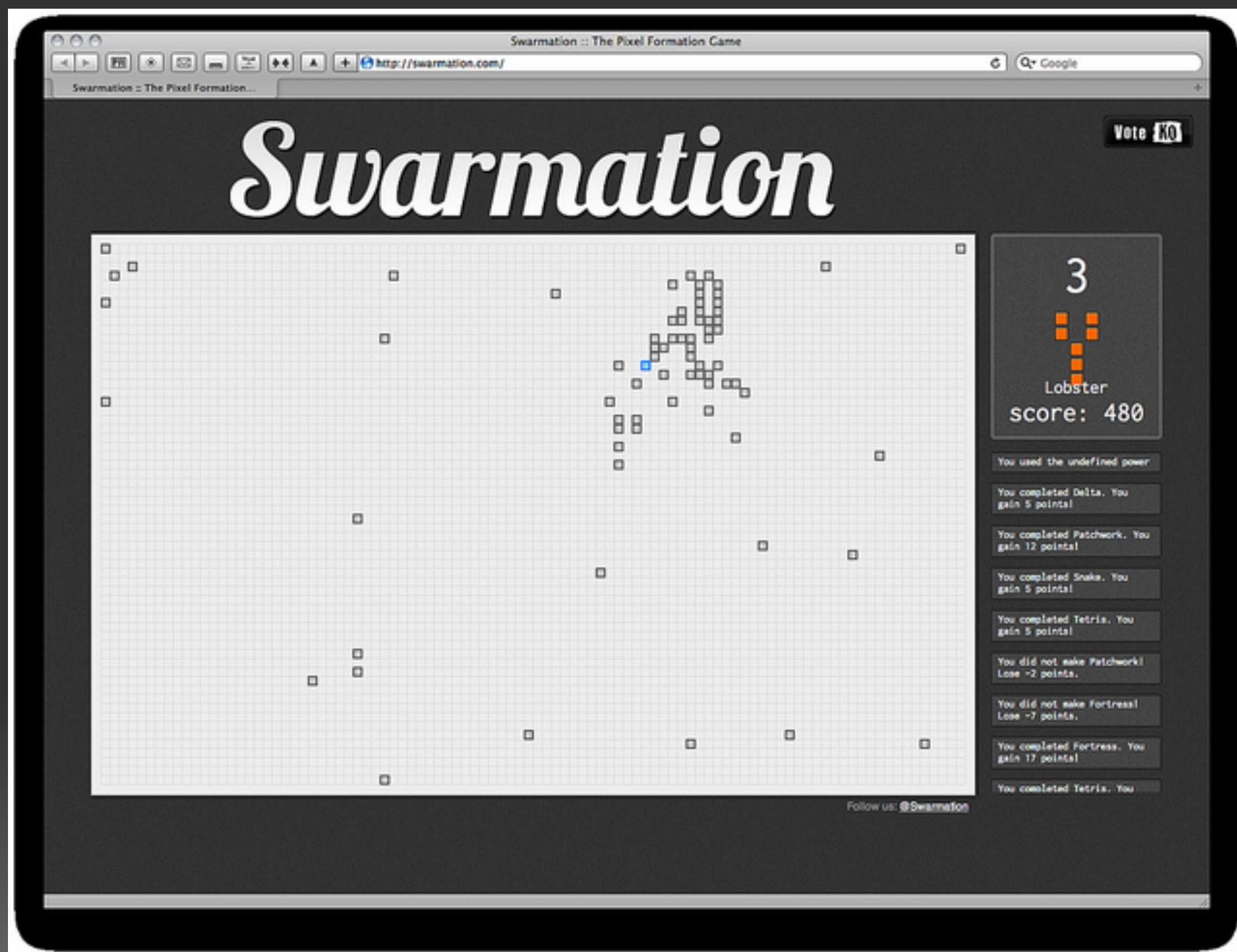
connection.onmessage = function (e) {
    // Código para tratar o que fazer em cada mensagem
};

connection.onclose = function (e) {
    // Código para tratar quando a conexão é encerrada
};
```

WebSockets

Multiplayer!

<http://swarmation.com/>



Tag Audio

```
<audio><source src="test.mp3" type="audio/mpeg" /></audio>
```

Latencia

Velocidade de resposta não é boa em todos os casos.

Workaround?

The screenshot shows a web browser window with the URL people.opera.com/~emoller/audio-demo/. The page contains a series of buttons at the top for accepting or adding channels, followed by a list of resource names. Below this is a scrollable text area displaying log messages. At the bottom, there are four playback controls, each with a play button, a progress bar, a duration indicator, and a volume icon.

Buttons at the top:

- accept
- acorn_drop
- bernie_explode
- berny_range
- big_wish
- brownie_jump
- brownie_reload
- brownie_retreat
- brownie_tickle
- bubba_pop
- bubba_shot

Add channel

START
Channel with track sfx.ogg loaded
Loaded sfx
All resources loaded
All channels loaded
START
Channel with track sfx.ogg loaded
Loaded sfx
All resources loaded
All channels loaded
Channel with track sfx.ogg loaded
All channels loaded
Channel with track sfx.ogg loaded
All channels loaded

Playback controls (each with a play button, progress bar, duration, and volume icon):

- 00:11
- 00:05
- 00:05
- 00:06

Compatibilidade

Mobile ainda é um problema.

Local Storage

Chega de guardar informações em cookies

Exemplo localStorage

```
// Criando um novo item no localStorage  
localStorage.setItem("myGame","The amazing HTML5 programmer")
```

```
// Retornando um item do localStorage  
localStorage.getItem("myGame")  
# => "The amazing HTML5 programmer"
```

```
// Criando com outra Syntax  
localStorage["myGame.stage"] = 1
```

```
// Retornando com outra Syntax. Tudo é armazenado como string.  
localStorage["myGame.stage"]  
# => "1"
```

fileSystem

Quase nenhum suporte ainda, mas vai ser muito útil!

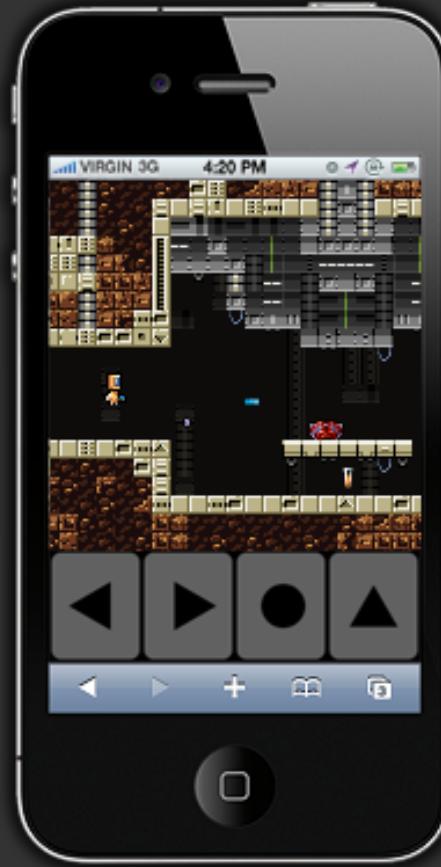
Game frameworks

Pelo menos algumas delas.





<http://www.phoboslab.org/ztype/>



<http://playbiolab.com/>

Partículas

Suporte

Map editor

Física basica

E exemplos de integração com a lib Box2D

Documentação

Bons exemplos

Script para versão .min

Paga :(

US\$ 99

Akihabara

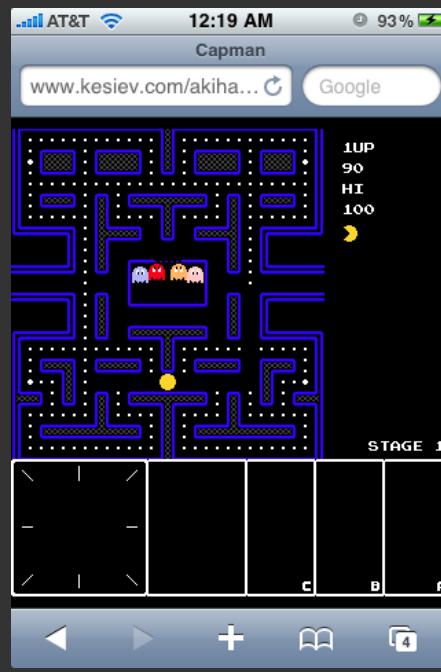
Akihabara



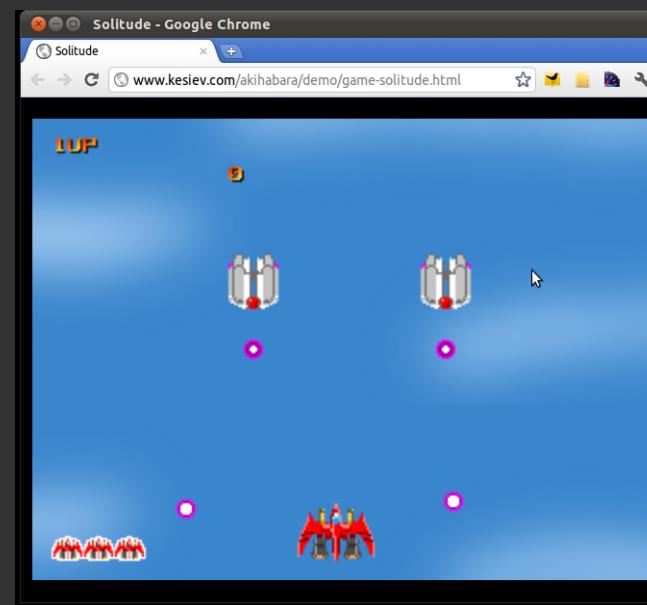
Criado por Francesco Cottone (KesieV Norimaki)

Vários demos

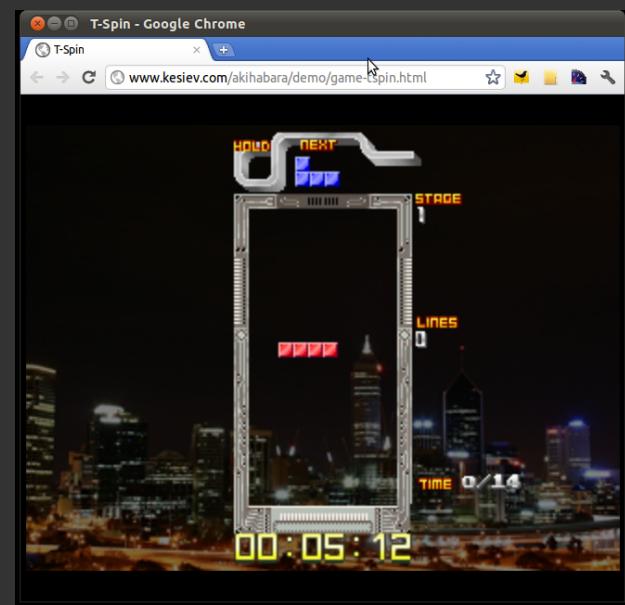
<https://github.com/akihabara>



Capman



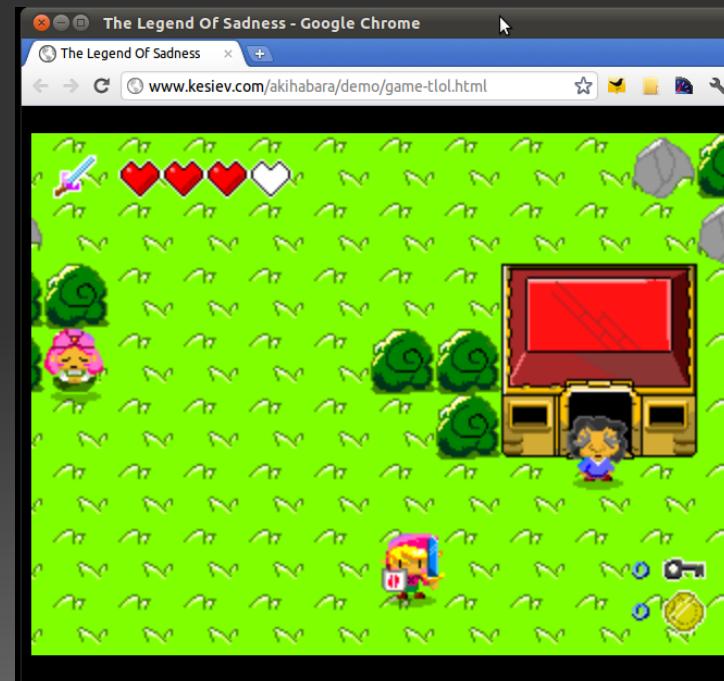
Solitude



TSpin



Leave me alone



TloS

Open Source \o/

<https://github.com/akihabara/akihabara>

Map editor

AkibaKa: Ainda em versão alpha

Documentação?

Precisa de várias melhorias, mas aceitamos ajuda! :)

Assets separados

```
gbox.addBundle({file: "bundle.js"})
```

Arquivos organizados

```
{  
    addImage:[  
        ["enemy","resources/enemy01.png"]  
    ],  
    addTiles:[  
        {id:"enemy", image:"e1", tilew:16, tileh:32, tilerow:6, gapx:0, gapy:0}  
    ],  
    addFont:[  
        {id:"small", image:"font", tileh:8, tilew:8, tilerow:255, gapx:0, gapy:8}  
    ]  
}
```

Keymap page

Sim, no estilo daqueles emuladores :)

Modularizado

gbox.js

O núcleo da engine. Criação de objetos, blit, audio e etc.

O namespace principal

```
// Objetos e grupos  
gbox.setGroups(["game_group", "enemy"]);  
gbox.addObject({id:"e1", group:"enemy", x: 0, y: 0});
```

```
// Blit de objetos  
gbox.blitTile({tileset: this.tileset, ...});
```

```
// Assets  
gbox.addBundle({file:"game-bundle.js"});
```

```
// Audio  
gbox.playAudio("title_screen");  
gbox.stopAudio("title_screen");
```

.

gamecycle.js

Estados e funcionalidades basicas dos jogos.

Game basics

```
game = gamecycle.createMaingame("game_id", "game_group");
```

```
// Algumas funções para controlar alguns estados básicos  
game.gameTitleIntroAnimation  
game.pressStartIntroAnimation  
game.gameIntroAnimation  
game.gameMenu
```

```
// Controle de alguns objetos comuns  
game.hud
```

.

.

.

help.js

Extenções no Javascript e helpers para o game

Helper de Inicialização

```
help.akihabaraInit({  
    title:"Zero Wing",  
    splash:{  
        // Algumas notas no footnote  
        footnotes:["All this presentation are belong to us"],  
  
        // Utilizando um background customizado no splash  
        background:["resources/my_awesone_image.jpg"]  
    },  
  
    // Vamos utilizar offline cache  
    offlinecache: true  
});
```

toys.js

Helpers para vários estilos de games

Snippets para jogos

// Topview

```
toys.topview.fireBullet("bullets_group", "bullet1", {power:1})
```

// Shoot'em up

```
toys.shmup.keepInBounds(this);
```

```
toys.shmup.fireBullet("bullets_group", "bullet1", {power:1})
```

```
toys.shmup.generateScroller("game_group", "game1", {power:1})
```

// Plataformer

```
toys.platformer.jumpKeys(this, "a");
```

// UI

```
toys.ui.hud("maingame_hud");
```

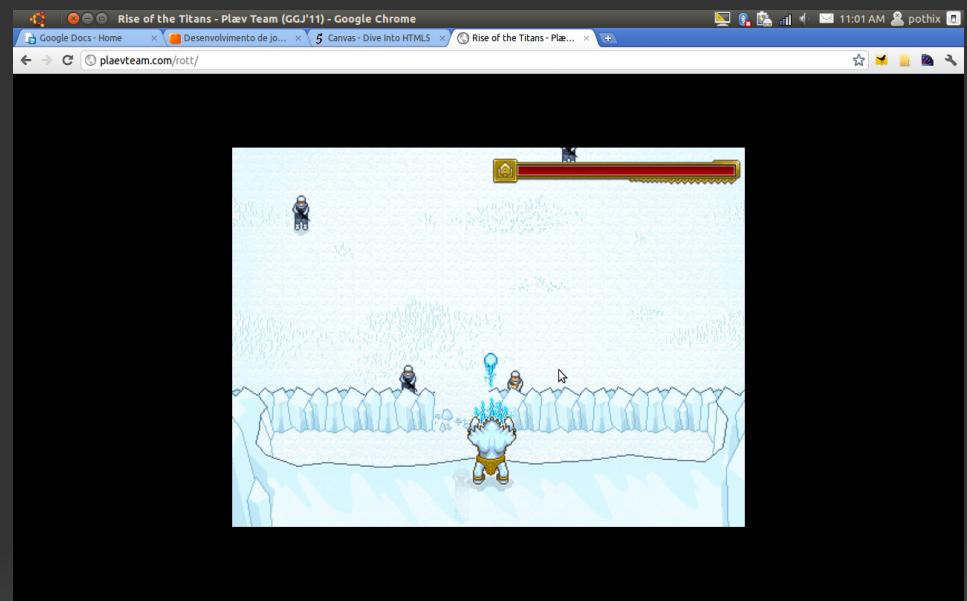
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RECONQUEST

Global Game Jam 2011

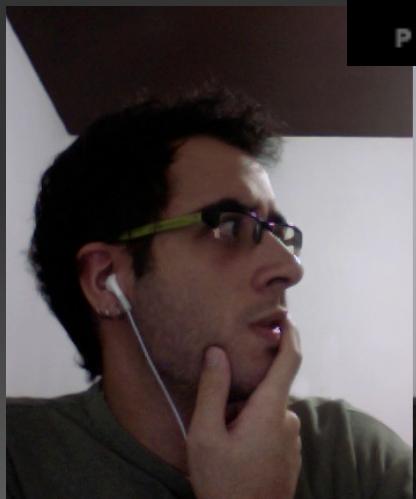


Plaev Team

@PotHix



@_bojak



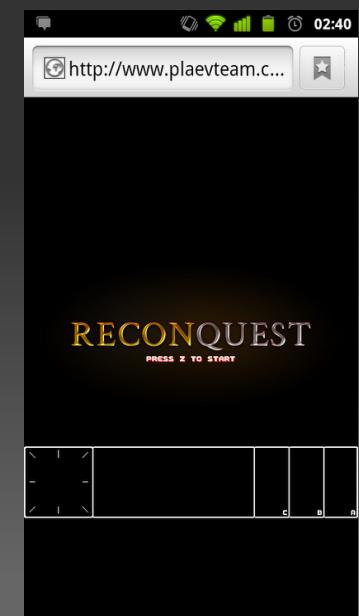
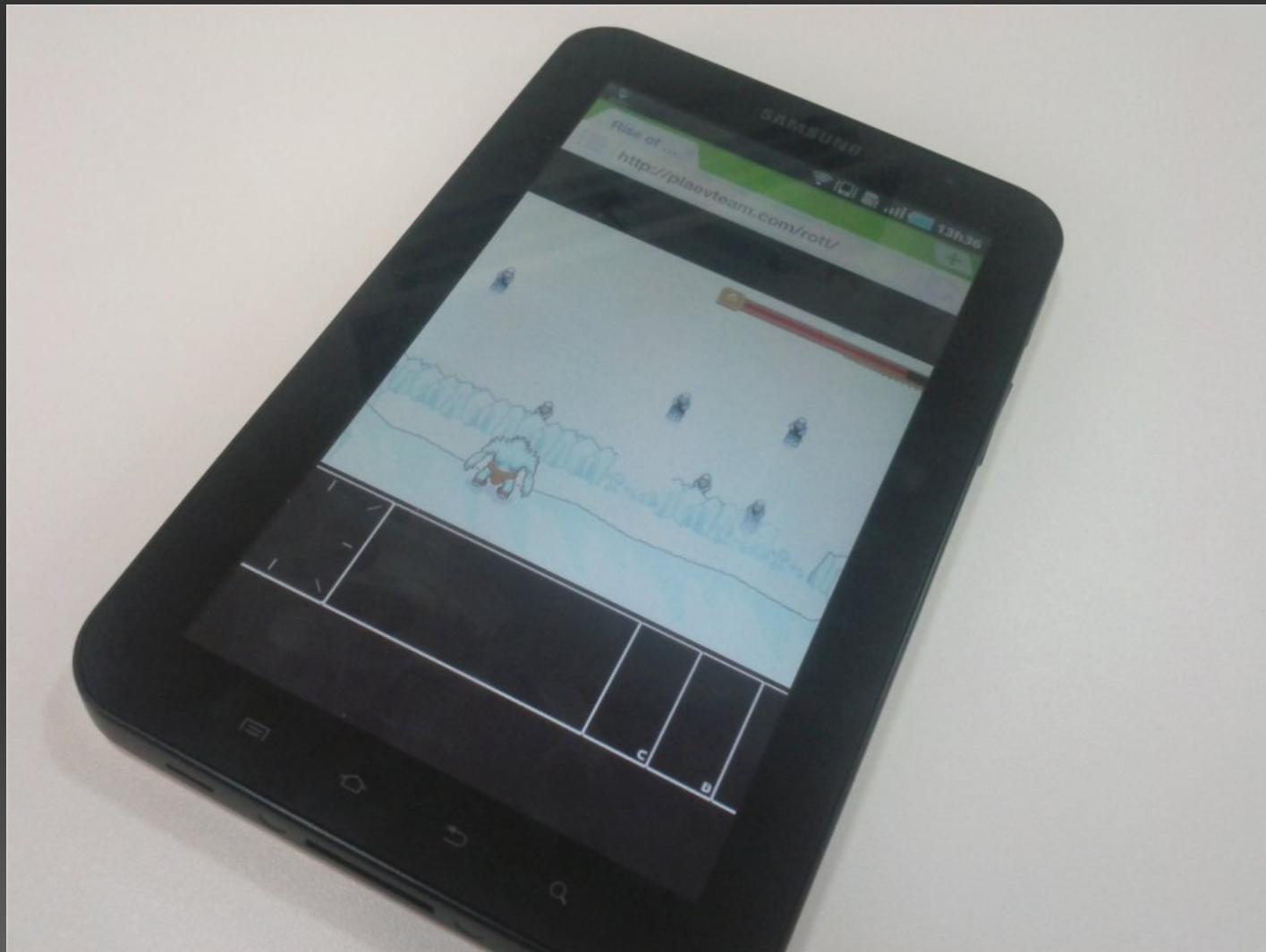
@rmasoni



@CrociDB

RECONQUEST

Galaxy Tab e Motorola Milestone



RECONQUEST

iPad e iPhone



Open source também!

<https://github.com/plaev/reconquest>

Google Web Toolkit

Feito em Java, mas exporta HTML5 e várias outras coisas!

Angry Birds

Feito com GWT e incluído na chrome web store

Outras engines

Box2D

Aves

bdge

GameQuery

Cocos2D

<https://gist.github.com/768272>

Hydra

ClanFX

Isogenic Engine

Canvex

Effect games

Hydrax

Crafty

Mibbu



Site interessante com jogos feitos com HTML5

Algumas conclusões

Boa! Agora já posso criar meu Gears of War com HTML5!!!!!!11!!

Obrigado!

Perguntas?