

Flash on mobile

Robert Szaloki

@rszaloki

Frontend developer

A man with dark, curly hair, wearing red sunglasses and a light-colored lab coat over a patterned shirt, is looking upwards and slightly to the right. He is pointing his right index finger towards the camera. The background is a blurred laboratory setting with various pieces of equipment and glassware.

Render SWF files in JavaScript

Why?

**Any application that can be written in
JavaScript, will eventually be written in
JavaScript.**

- *Atwood's Law*

Why?

49,189 ONLINE PLAYING 91,299 FREE GAMES!

KONGREGATE

GAMES ACHIEVEMENTS MY KONG Search games & more

HOME / ALL GAMES

Browse Games

Top Rated

- Hot New Games
- All games
- Action
- Multiplayer
- Shooter
- Adventure & RPG
- Sports & Racing
- Strategy & Defense
- Puzzle
- Music & More
- Tutorials

ARMOR GAMES

mmo mobile action adventure arcade shooting puzzle & skill strategy sports misc

Login with Facebook AG Username Password Login Create Account

Search Games Game News Videos Developers Forums Store Help

Promoted Game

War Thunder

Freeway Fury 3

Black Bit Ninja 2

Onomastica 2

Transmission

Ars Tactical: Prelude

Sacrifice

Hyper Travel

Caribbean Admiral 2

Jellydad Hero

Phonetopia

Rogue Soul 2

Reckless Ruckus

The Weapon Masters

The Gate

New Games

Ad-Free Gaming+ No ads, premium forums, full-screen gaming, much more!

Latest Quests

Game News

The King of Towers

Wartune

Clicker Heroes

GemCraft Chasing Shadows

Kingdom Rush

KingsRoad

The Last Stand - Dead Zone

Why?

49,189 ONLINE PLAYING 91,299 FREE GAMES!

KONGREGATE

HOME / ALL GAMES

Browse Games

Top Rated

- Hot New Games
- All games
- Action
- Multiplayer
- Shooter
- Adventure & RPG
- Sports & Racing
- Strategy & Defense
- Puzzle
- Music & More
- Tutorials

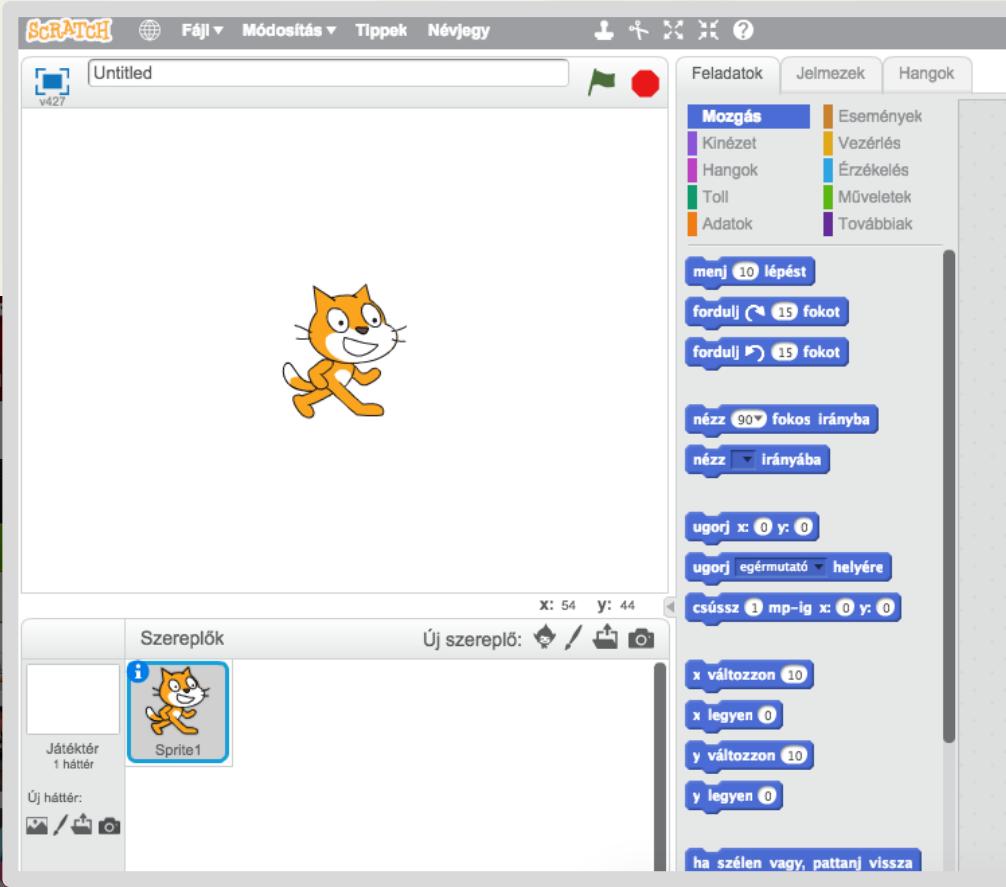
Ad-Free Gaming+

No ads, premium forums, full-screen gaming, much more!

Latest Quests

- (3)
- (2)
- (1)
- Maze
- Bull
- Skull

Game News



Why?

A mai nap 15 legnépszerűbb prezije.

Interactive Media - Prezi Template
by Prezi Templates by Prezibase

Start Prezi

← PROBLEM
SOLUTION →

Traffic Signs - Prezi Template
Prezi Templates by... 3051 43

WHAT IS THE
KEY TO SUCCESS?

PAC-MAN PREZI

INJECTION

Injection - Prezi Template
Prezi Templates by... 398 7

Prezi

Interactive Media - Prezi Template
Prezi Templates by... 11448 212

312

Game News

FIGHTING

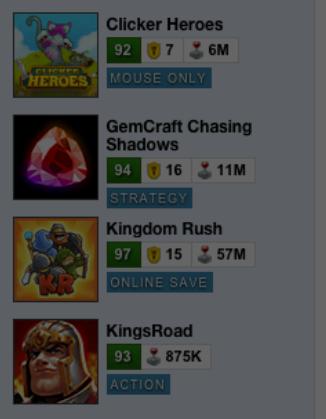
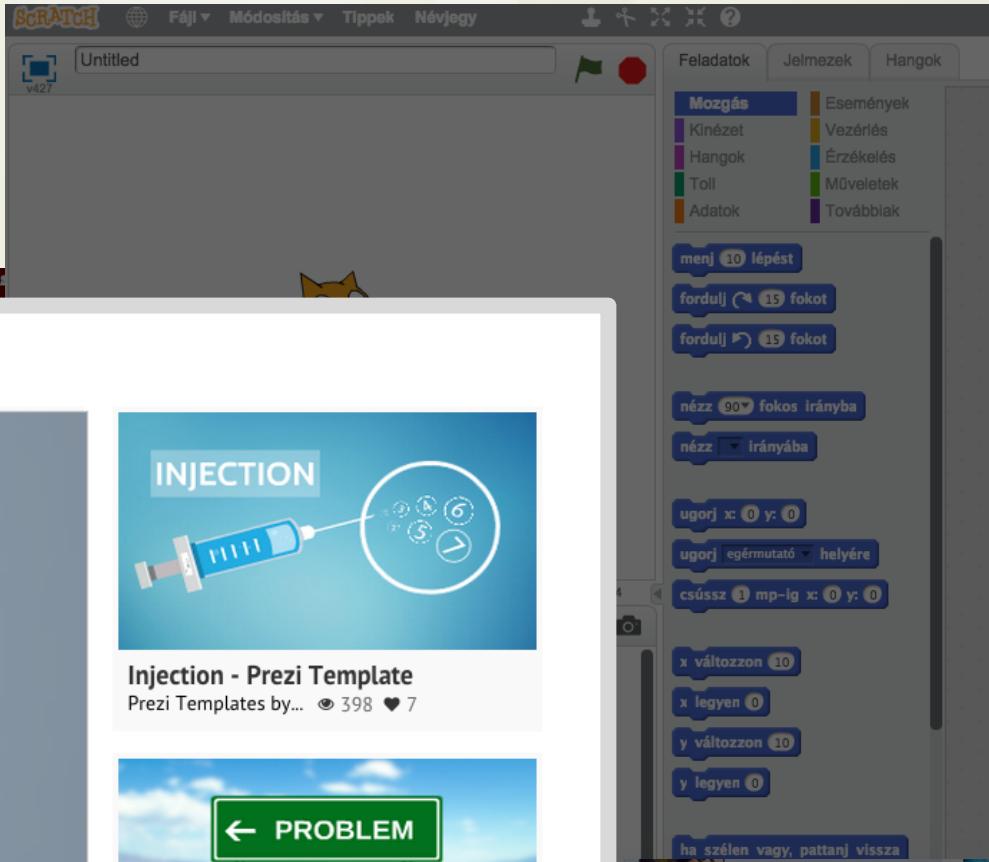
The Weapon Masters

MMO

Reckless Racers

The Gate

The Last Stand - Dead Zone



A close-up of the head of an Alvin and the Chipmunks character, Alvin, with his hands covering his mouth in a surprised or shocked expression.

Mozilla

Gordon Shumway

Early stage flash player, written in javascript

How?

- swf parser
- ActionScript VM
- rendering
- *media playback, flex*

SWF format

- compressed and optimized container for animation
- documentation from Adobe
- old (from 1996)

DefineFont, DefineFont2, DefineFont3,

DefineFont4

ActionScript

- the Tamarin VM (AVM2) was donated by Adobe to Mozilla, for the development for ES4
- originally a C++ code, but compiled to javascript



Rendering

- font rendering - convert the embedded font into opentype
- shape rendering - easy, until you have to deal with the Adobe Flash's output
- **clipping, bitmaps, gradients**
- **bugs and no documentation**

Bugs!

```
173     var maxContours = 0;  
174     var i = 0;  
175     var code;  
176     while ((code = codes[i++])) {  
177         var glyph = glyphs[glyphIndex[code]];  
178         var records = glyph.records;  
179         var numberOfContours = 1;  
180         var endPoint = 0;
```

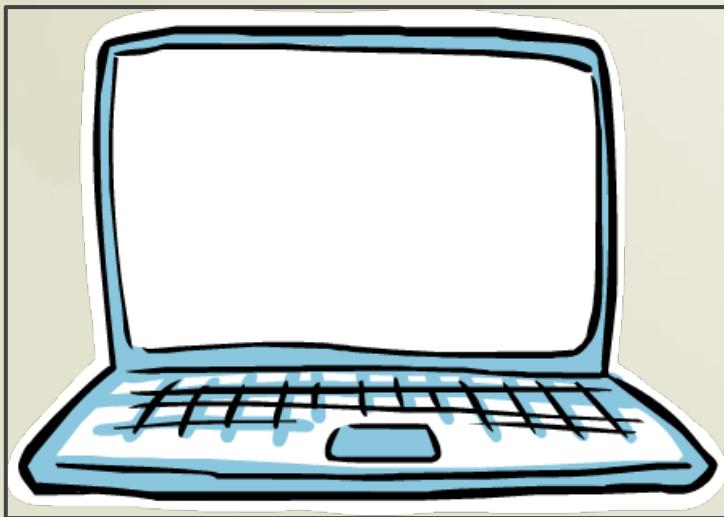
Bugs!

```
173     var maxContours = 0;  
174     var i = 0;  
175     var code;  
176     while ((code = codes[i++])) {  
177         var glyph = glyphs[glyphIndex[code]];  
178         var records = glyph.records;  
179         var numberofContours = 1;  
180         var endPoint = 0;
```

Bugs!



Bugs!



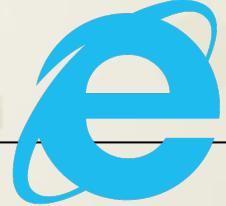
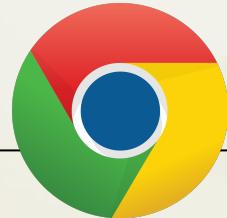


<http://mozilla.github.io/shumway/>

<http://mozilla.github.io/shumway/examples/inspector/inspector.html?rfile=../racing/race.swf>



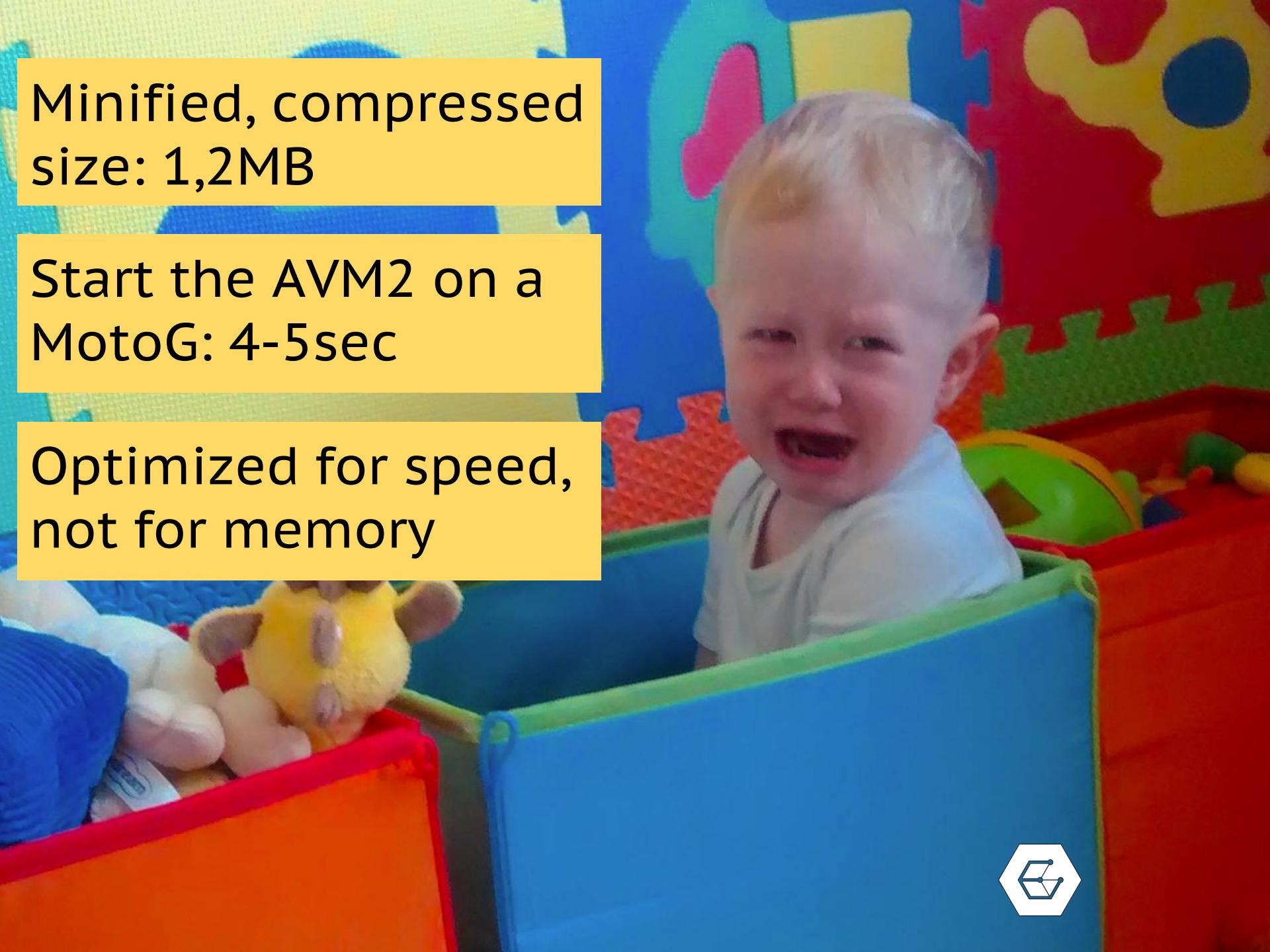
Mobile?



	Safari	Chrome	IE	Edge
Canvas				
@font-face				
Worker				
postMessage				
TypedArray				



EU EDGE
Sharp Minds

A young child with blonde hair is laughing heartily, sitting in a colorful playpen made of interlocking foam puzzle pieces. A yellow speech bubble is overlaid on the image, containing text.

Minified, compressed
size: 1,2MB

Start the AVM2 on a
MotoG: 4-5sec

Optimized for speed,
not for memory





Thank You!

robert.szaloki@euedge.com

@rszaloki