# Objective-C ==> RubyMotion A fly in the ointment

Oleksandr Dodatko Dnepropetrovsk, Ukraine 2013

## RubyMotion is a Buzzword



## Marc Lainez @mlainez

Yesterday: Xcode => nothing good came out of it.
Today: Rubymotion => almost finished an app.

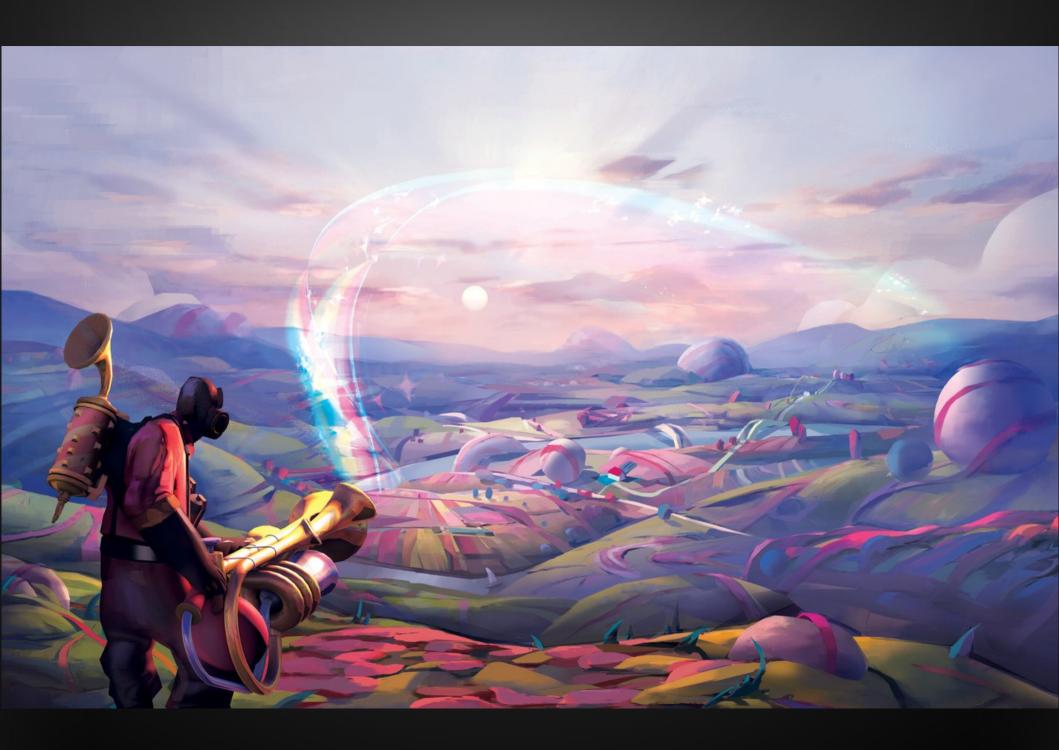
After years of iOS work, RubyMotion seems like a thousand kittens playing the piano while sliding down a double-rainbow.

Johannes Fahrenkrug Founder, Springenwerk

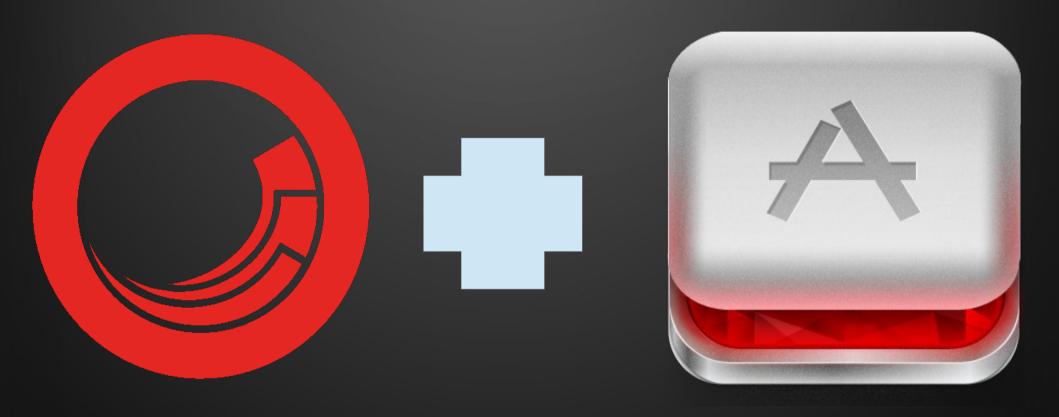


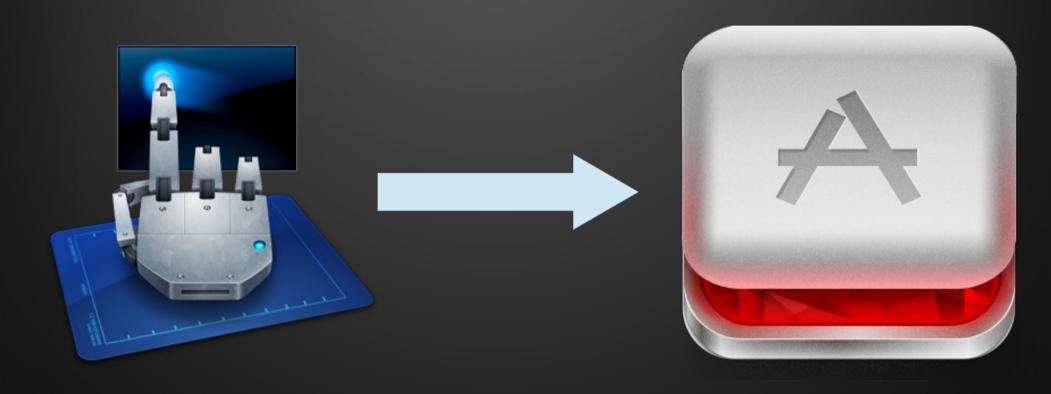
## Matt Brewer @macfanatic

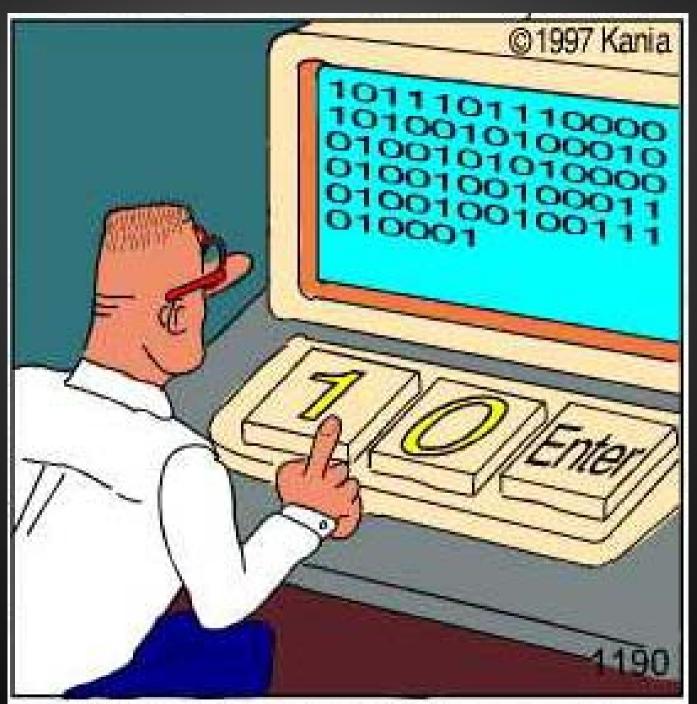
@RubyMotion Love, absolutely needed.



## Introducing RubyMotion I had 3 goals in mind







Real programmers code in binary.

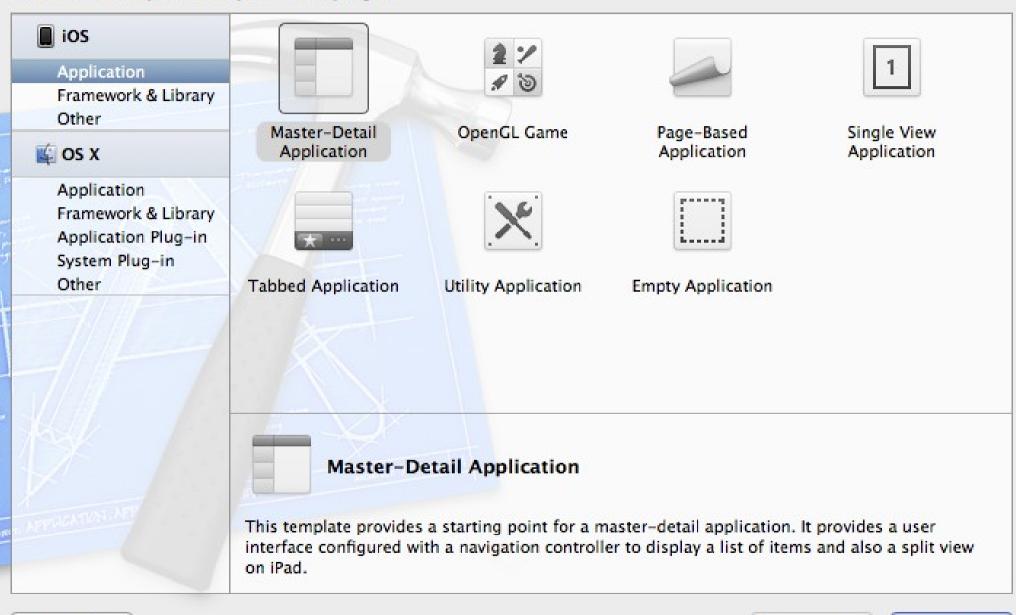
## Preconditions



## Sitecore MobileSDK



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## Problem #1: Memory leaks



Object cycles, when two or more objects refer to each other, are currently not handled by the runtime, but will be in future releases.

## Ruby

### MyController

+model():MyModel\*

### MyModel

+delegate():WeakRef\*

### **Native**

#### WeakRef

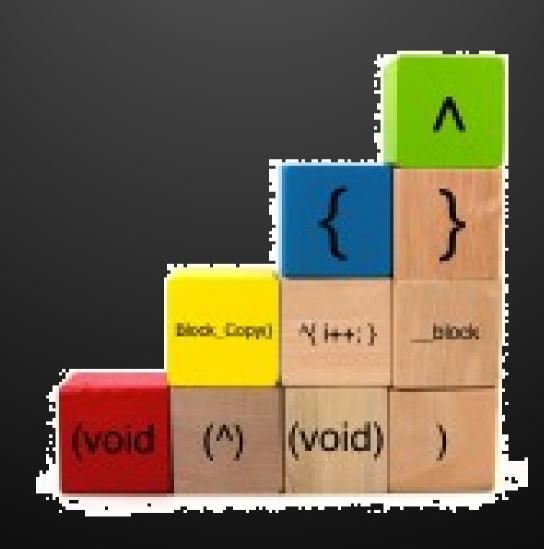
+target():id



# Farcaller/motion-memorymanagement Dodikk/MotionBlocks



## Problem #2: Block API do not compile



typedef void (^BBAsyncOpResult)(id result, NSError
\*error);

typedef void (^BBAsyncOp)(BBAsyncOpResult handler);

@interface BlockBuilder : NSObject

- -(BBAsyncOp)itemsReader;
- -(BBAsyncOpResult)itemsReaderCallback;



Objective-C stub for message 'itemsReader' type '@? @(angry)' not precompiled.

Make sure you properly link with the framework or library that defines this message.

#### RM-9 Cannot override an Objective-C method accepting C-block as argument(s)



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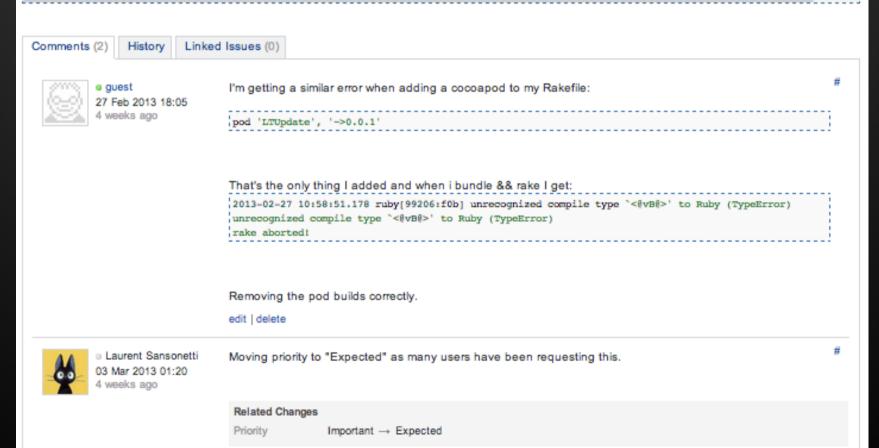
Currently the static compiler is not able to handle the definition of Objective-C selectors accepting C-level blocks as arguments.

There are at the time of this bug report no protocol methods in the iOS SDK that accept a C-level block, but this is the case for 3rd-party libraries such as AFNetworking

- (AFHTTPRequestOperation \*)HTTPRequestOperationWithRequest:(NSURLRequest \*)urlRequest success:(void (^)(AFHTTPRequestOperation \*operation,

Trying to override this method in RubyMotion will result in this error at runtime:

2012-12-12 17:56:42.444 ruby[19319:f0b] unrecognized compile type `<@v@@>' to Ruby (TypeError)unrecognized compile type `<@v@@>' to Ruby (Ty



## hipbyte.myjetbrains.com/youtrack/issue/RM-9

# Use id instead of block typedefs

```
typedef void (^BBAsyncOpResult)(id result, NSError
*error);
typedef void (^BBAsyncOp)(id handler);
```

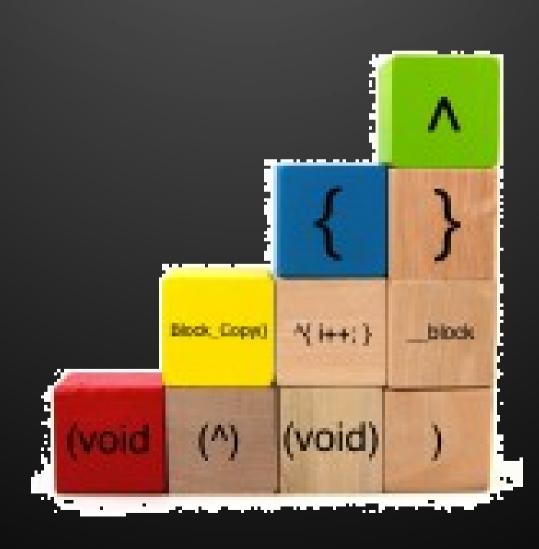
**@interface** BlockBuilder: NSObject

- -(id)itemsReader;
- -(id)itemsReaderCallback;





## Problem #3: How to Invoke an ObjC Block?



### Foundation

NSMallocBlock

**NSObject** 

NSGlobalBlock

**NSStackBlock** 

## BLACKINGER



AND HOOKERS

memegenerator.net

```
@implementation NSObject (BlockForRuby)
```

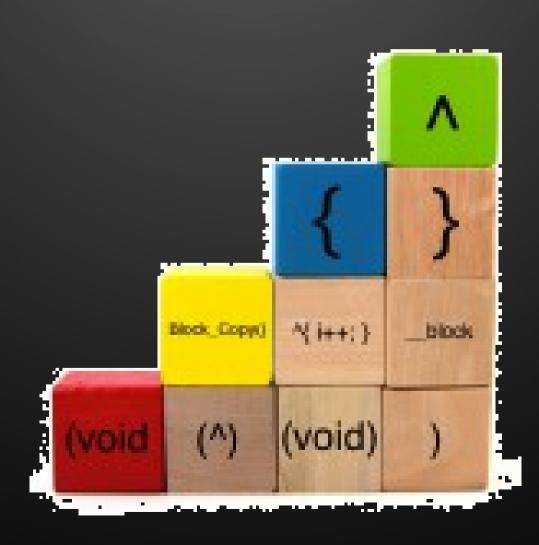
```
-(id)objc_BlockSend1:( id )arg_
{
    typedef id(^Block1)( id arg_ );
    Block1 block_ = (Block1)self;
    return block_( arg_ );
}
```

```
-(id)objc_BlockSend:( NSArray* )args_{
  switch ( [ args_ count ] ){
     case 0:
       return [ self objc_BlockSend0 ];
       break;
     case 1:
       return [ self objc_BlockSend1: args_[0]];
       break;
     default: //TODO: add as many as you want
       break;
  return nil;
```



### Problem #4:

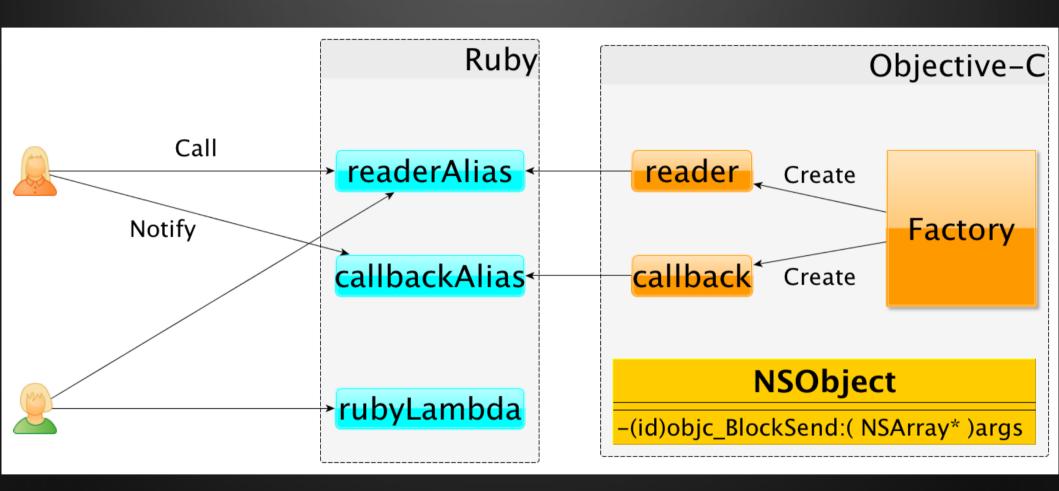
## ObjC blocks crash



```
reader = blockBuilder.itemsReaderWithRequest()
```

```
callback = blockBuilder.itemsReaderCallback()
```

```
reader.objc_BlockSend([callback])
```



## Demo

## #511 Lambda callbacks are not received from the native code. The application crashes.



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Environment: OSX 10.8.2, RubyMotion 1.32, Xcode 4.6

I have an operation that uses ObjC block callback to notify about its result.

When attempting to pass the ruby block it just does not get called back. The application crashes.

reader.class: NSGlobalBlock callback.class: NSGlobalBlock

2013-02-05 12:35:26.840 HelloMotion[6711:1d903] objc\_BlockSend -=== switch 1

2013-02-05 12:35:26.841 HelloMotion[6711:1d903] [EXECUTED] itemsReaderWithRequest

2013-02-05 12:35:26.842 HelloMotion[6711:1d903] handler : #<Proc:0xdb42020 (lambda)>

2013-02-05 12:35:26.842 HelloMotion[6711:1d903] handler class : Proc

2013-02-05 12:35:26.843 HelloMotion[6711:1d903] Ruby block passed. Invoking call...

(main)> \* simulator session ended with error: Error Domain=DTiPhoneSimulatorErrorDomain Code=1

"The simulated application quit." UserInfo=0×100507940 {NSLocalizedDescription=The simulated

application quit., DTiPhoneSimulatorUnderlyingErrorCodeKey=-1}

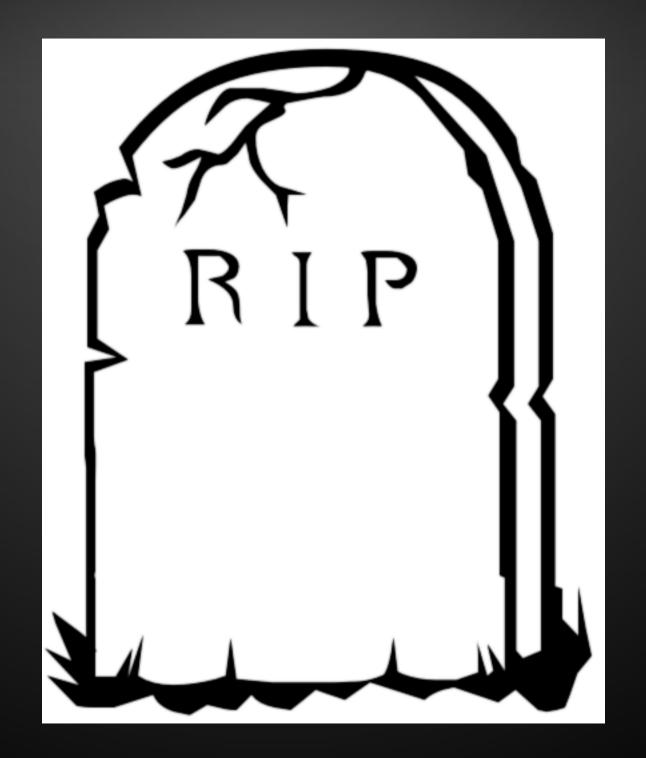
rake aborted!

https://github.com/Igor-Khomich/RubyMotionTestApp/ https://groups.google.com/forum/#!topic/rubymotion/ohzpbgCqOPM

## Created on Tue, Feb 5 at 1:19 PM Agent: Laurent Sansonetti

# Just in case you need the full log

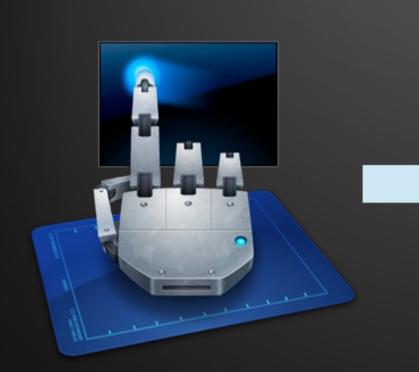
```
reader.class : NSGlobalBlock
callback.class: NSGlobalBlock
2013-03-07 12:35:43.985 HelloMotion[1250:1d903] [EXECUTED]
itemsReaderWithRequest
2013-03-07 12:35:43.986 HelloMotion[1250:1d903] handler:
< NSGlobalBlock : 0x14b500>
2013-03-07 12:35:43.987 HelloMotion[1250:1d903] handler class:
  NSGlobalBlock
2013-03-07 12:35:43.987 HelloMotion[1250:1d903] [EXECUTED]
itemsReaderCallback
2013-03-07 12:35:43.988 HelloMotion[1250:1d903] result : ololo
((null))> rake aborted!
Command failed with status (1):
[DYLD FRAMEWORK PATH="/Applications/Xcode.a...]
```



## One More Thing...













### TestingWithFrank/PublicAutomation

Unstable. Did not make it work.

#### RM-83 Various behaviors for UI specs results



Issue is visible to: All Users

Using this project: https://github.com/clayallsopp/MotionTest

All tests pass for some users, and fail for some.

First, analysis showed it could be related to some accessibility setting. But tweaking various settings didn't get any result.

See this google group for more informations: https://groups.google.com/d/topic/rubymotion/Sv9p3o4aVSs/discussion



History

Linked Issues (0)



Shizuo Fujita01 Apr 2013 04:481 day and 17 hours ago

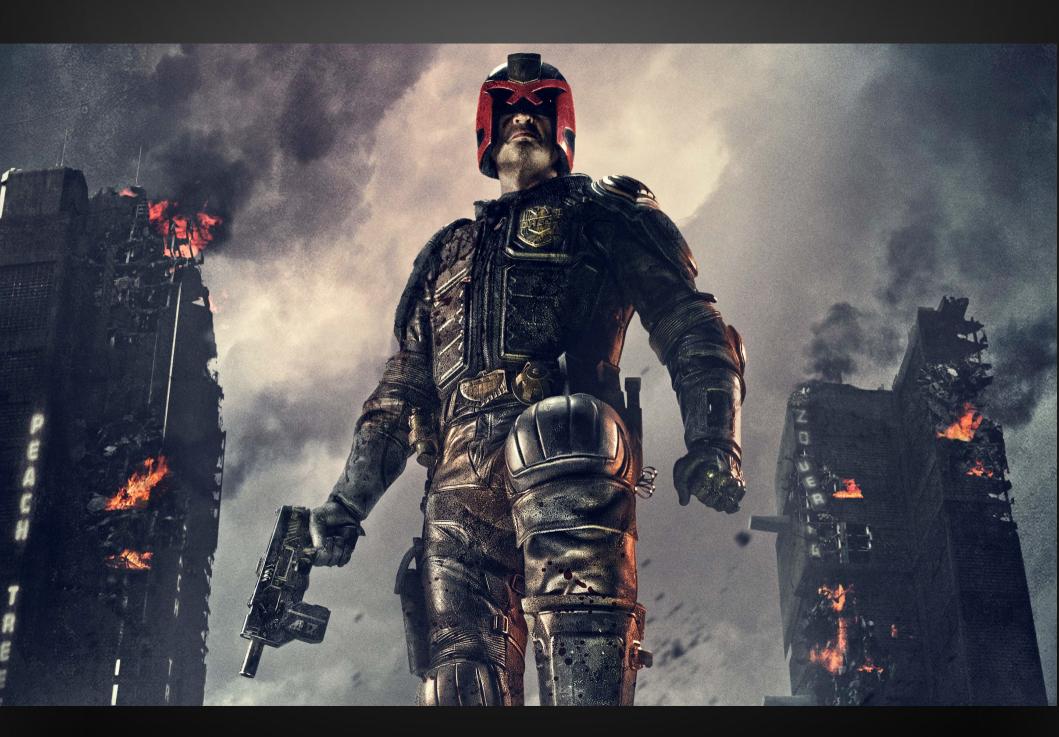
What difference do this have with http://hipbyte.myjetbrains.com/youtrack/issue/RM-66?



Joffrey Jaffeux01 Apr 2013 12:171 day and 9 hours ago

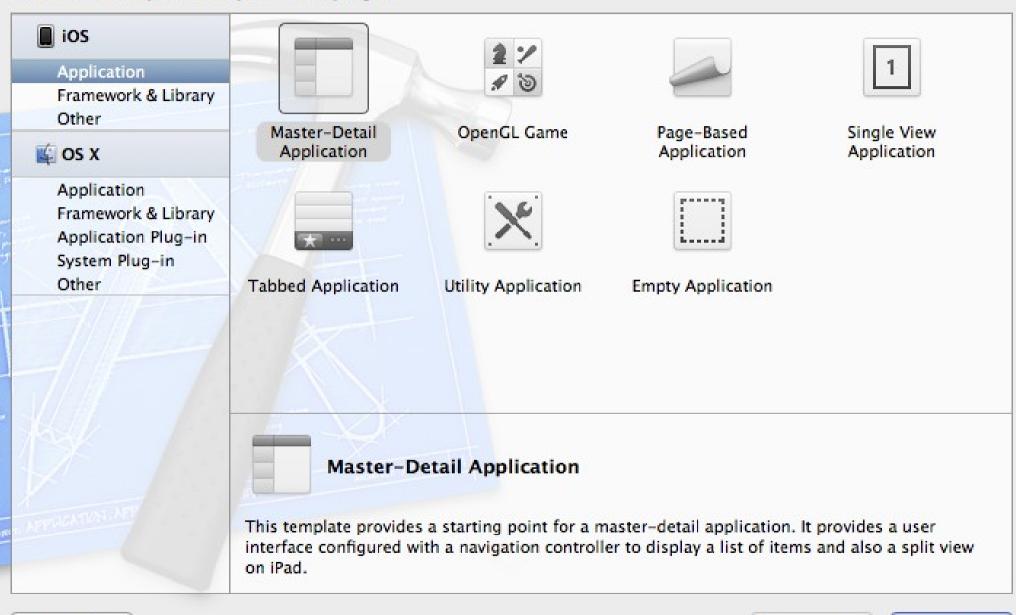
No difference mistake from me. I deleted the other one.

## hipbyte.myjetbrains.com/youtrack/issue/RM-83



## Use it for Prototyping Only

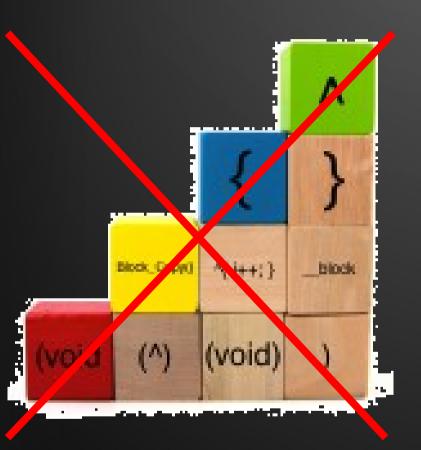
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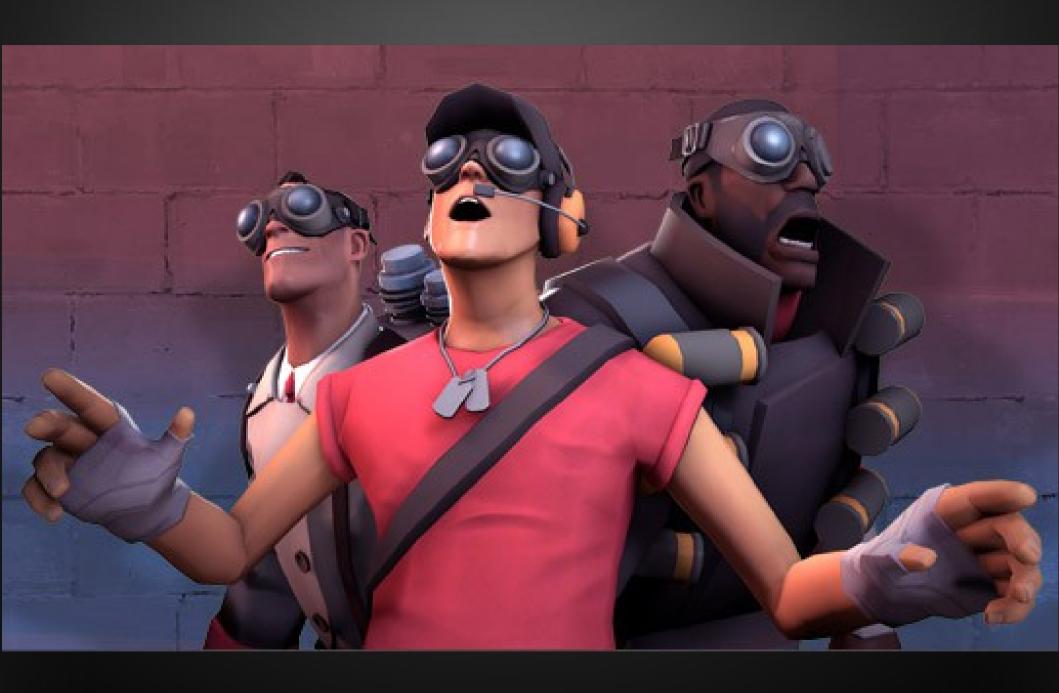
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## Stay Native





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github.com/dodikk

