

podlodka.

iOS Crew  
14-18 февраля

Перформанс и профайлинг

Григорий Бернгардт  
Skyeng

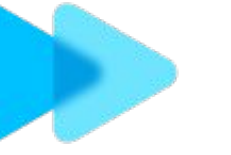
Доклад  
Трюки дебагинга



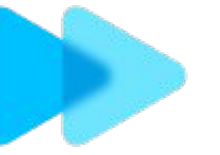
skyeng

avito.tech

# Agenda

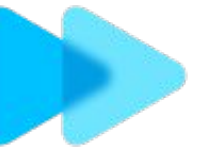


# Agenda



What is LLDB

# Agenda

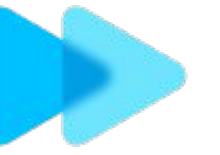


What is LLDB



Stop

# Agenda

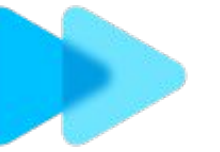


What is LLDB

 Stop

 Look

# Agenda



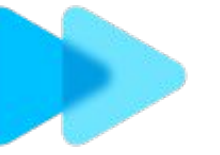
What is LLDB

 Stop

 Look

 Move

# Agenda



What is LLDB

 Stop

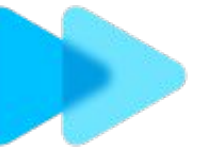
 Look

 Move

 Do



# Agenda



## What is LLDB

 Stop

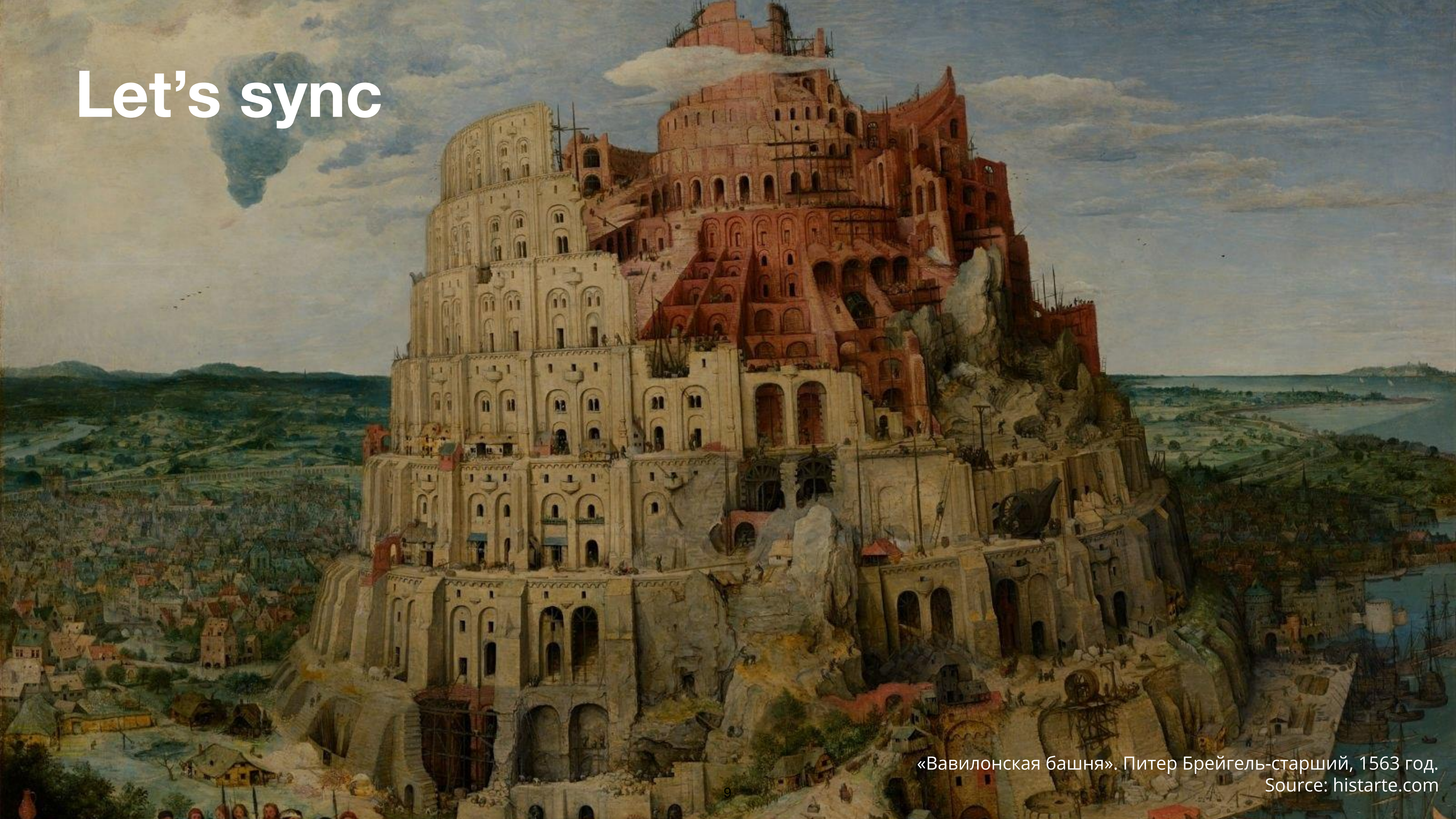
 Look

 Move

 Do



# Let's sync



«Вавилонская башня». Питер Брейгель-старший, 1563 год.  
Source: histarte.com



# Let's sync

**M** configureTopSitesCell(\_:... 905 

«Вавилонская башня». Питер Брейгель-старший, 1563 год.  
Source: histarte.com



# Let's sync

M configureTopSitesCell(\_:... 905 ➡

```
903     guard let topSiteCell = cell as? ASHorizontalScrollCell else {  
          return UICollectionViewCell() }  
904     topSiteCell.delegate = self.topSitesManager  
905     topSiteCell.setNeedsLayout() Thread 1: breakpoint 4.1 (1)  
906     topSiteCell.collectionView.reloadData()  
907     return cell
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0 FirefoxHomeVi...ll(\_:forIndexPath:) Line: 1027 Col: 1

```
> A cell = (Client.ASHorizontalScrollCell) 0x00007fe1d2966540  
> A indexPath (Foundation.IndexPath)  
> A self = (Client.FirefoxHomeViewController) 0x00007fe1d208e800  
> L topSiteCell = (Client.ASHorizontalScrollCell) 0x00007fe1d2966540
```



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```
> A cell = (Client.ASHorizontalScrollCell) 0x00007fe1d29...  
> A indexPath (Foundation.IndexPath)  
> A self = (Client.FirefoxHomeViewController) 0x00007fe...  
> L topSiteCell = (Client.ASHorizontalScrollCell) 0x0000...
```

```
(lldb) po self  
<Client.FirefoxHomeViewController: 0x7fe1d208e800>  
  
(lldb)
```

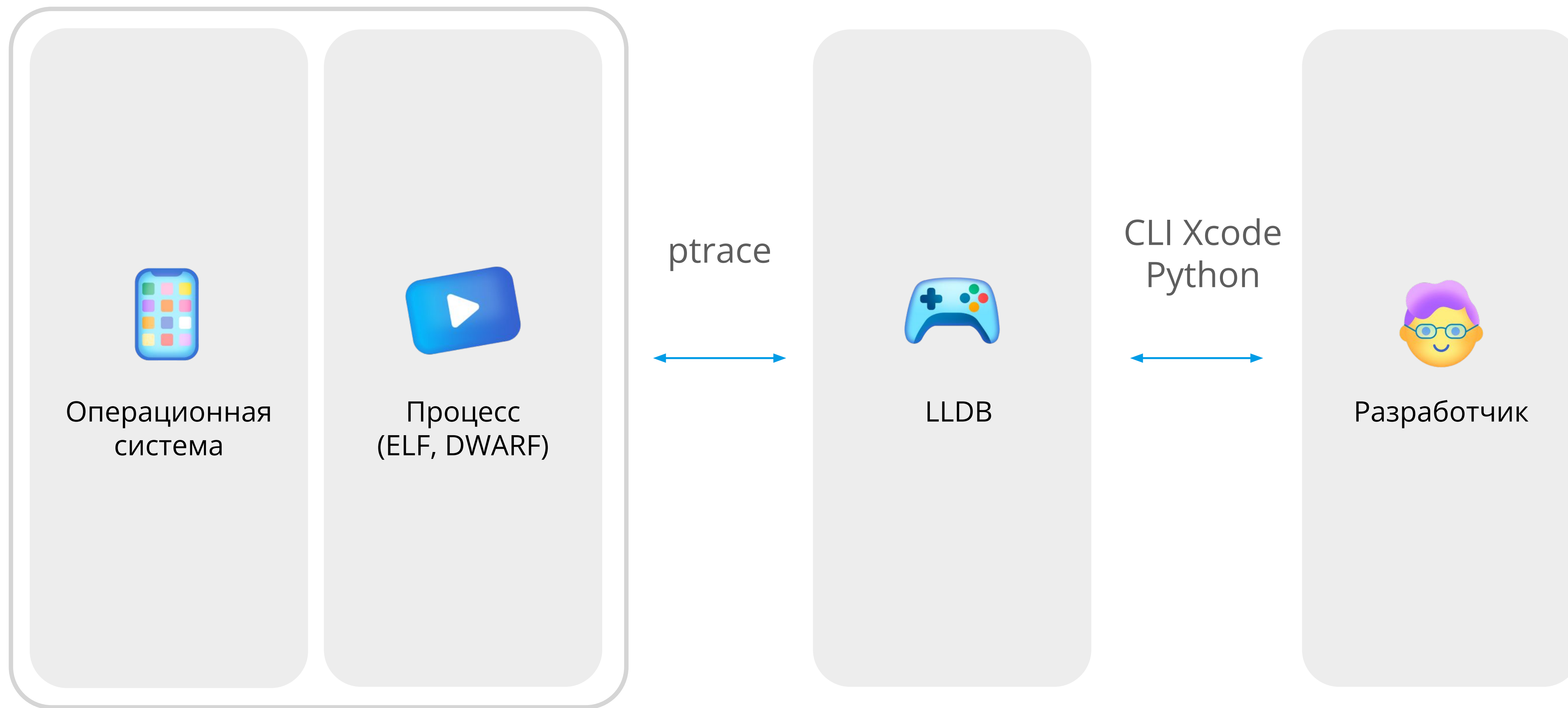


# LLDB



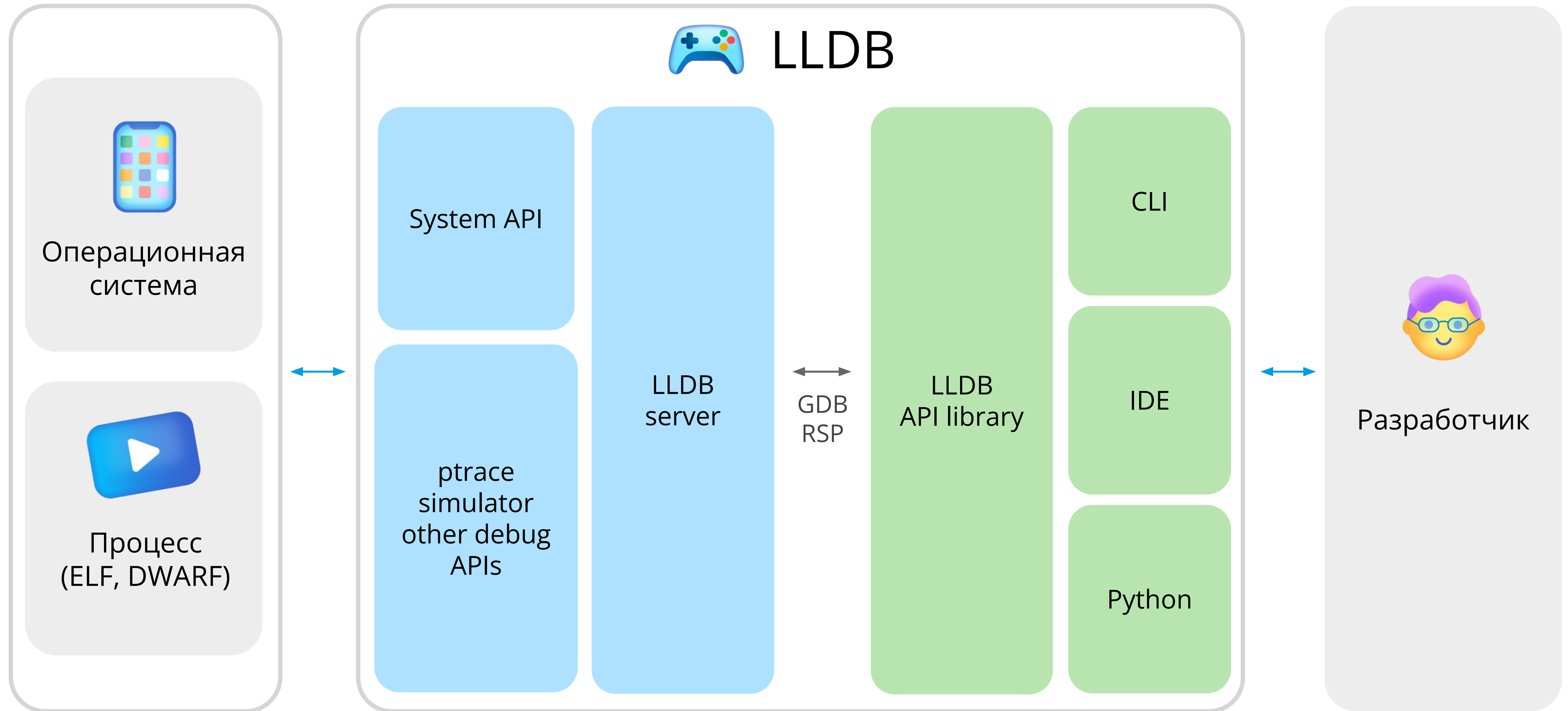
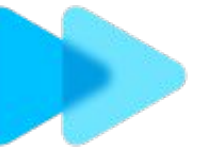
«LLDB is a next generation,  
high-performance debugger»

# LLDB: how it works

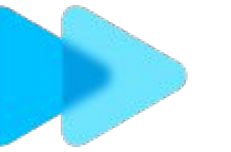




# LLDB: architecture



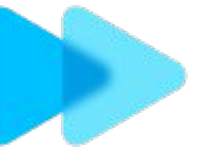
# LLDB



## Command Architecture

(lldb)	<noun>	<verb>	[-options [option-value]]	--	[argument [argument...]]
(lldb)	process	launch	--stop-at-entry	--	-program_arg value
(lldb)	breakpoint	set	-f foo.swift -l 12		
(lldb)	expression		-l swift --0	--	self.view

# LLDB Command Types



 Stop

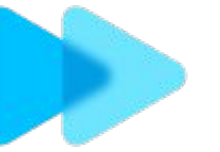
 Look

 Move

 Do

 Setup

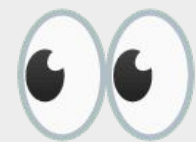
# LLDB Commands



Stop

breakpoint

watchpoint



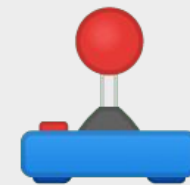
Look

expression

frame

image

disassemble



Move

thread

process



Do

expression

script

source



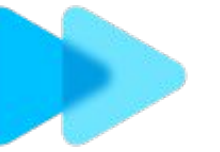
Setup

command

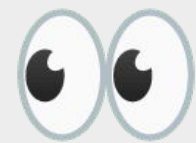
help

settings

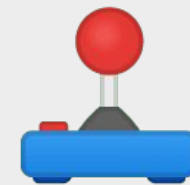
# LLDB Commands



Stop



Look



Move



Do



Setup

breakpoint

br

b

expression

e

print

p

po

frame

fr

v

target

image

disassemble

thread

th

next

n

step

s

finish

f

process

pr

expression

e

script

sc

source

so

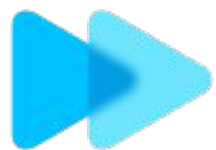
command

co

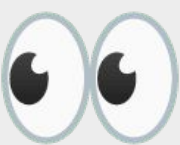
help

settings

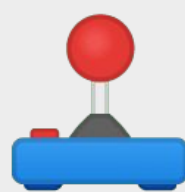
# LLDB Commands



Stop



Look



Move



Do



Setup

breakpoint	br	expression	e	thread	th	expression	e	command	co
b		print	p	next	n	script	sc	help	
watchpoint		po		step		<div>(lldb) help help</div> <div>Show a list of all debugger commands, or give details about a specific command.</div> <div>Syntax: help [&lt;cmd-name&gt;]</div> <div>Command Options Usage:</div> <div>help [-ahu] [&lt;cmd-name&gt; [&lt;cmd-name&gt; [...]]]</div> <div>-a ( --hide-aliases )</div> <div>Hide aliases in the command list.</div> <div>-h ( --show-hidden-commands )</div> <div>Include commands prefixed with an underscore.</div>			
		frame	fr	finish					
		v		process					
		target							
		image							
		disassemble							



# Demo

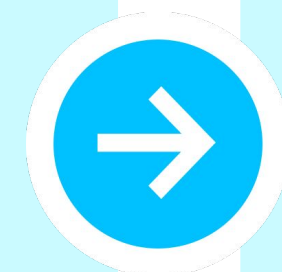




# Touch handling

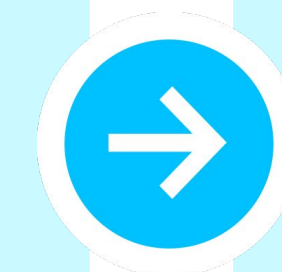
Tap

Пользователь  
делает тап



Find view

UIView  
.hitTest(\_:with:)

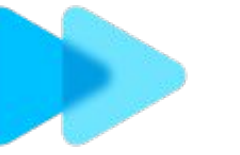


Send touch action

UIApplication  
.sendEvent(\_:)



# objc\_msgSend

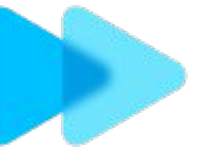


**0 self**  
A pointer that points to the instance of the class that is to receive the message.

**1 op**  
The selector of the method that handles the message.

**... args**  
A variable argument list containing the arguments to the method.

# Summary



Команды: expression, breakpoint, thread, command

Обновление UI на лету

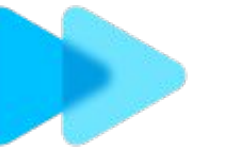
Работа с брекпоинтами

Подмена кода

Переменные lldb

Создание алиасов

# Power Up



Chisel – <https://github.com/facebook/chisel>

LLDO – <https://github.com/lurado/LLDO>

DerekSelander LLDB aliases – <https://github.com/DerekSelander/LLDB>

# Спасибо



@gregoryvit

Гриша Бернгардт,  
Skyeng Mobile Platform iOS Engineer

