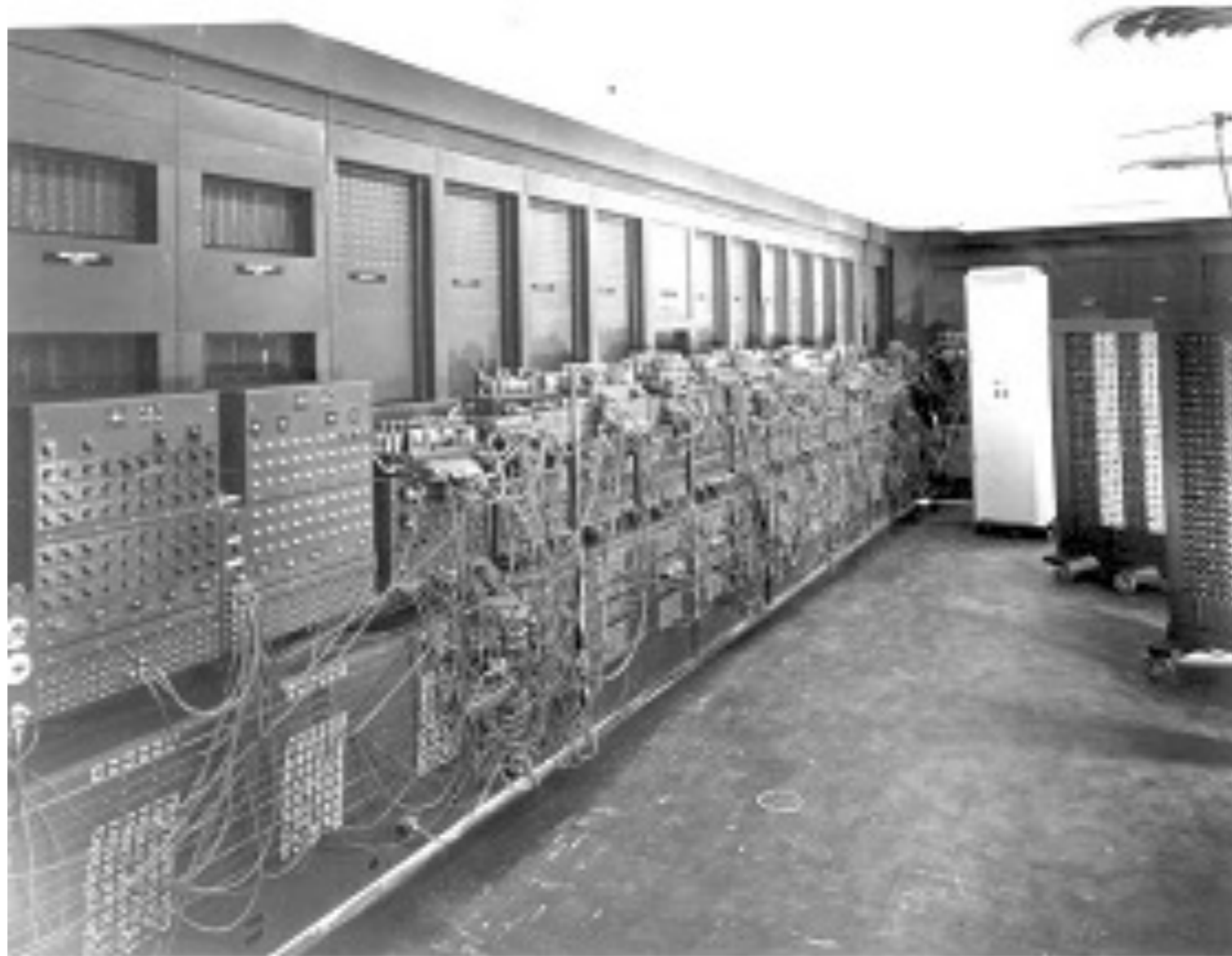


Xcode에서 디버깅하기

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이재성

디버깅이란?



목차

Breakpoint

lldb

Symbolicate

ETC

Breakpoint

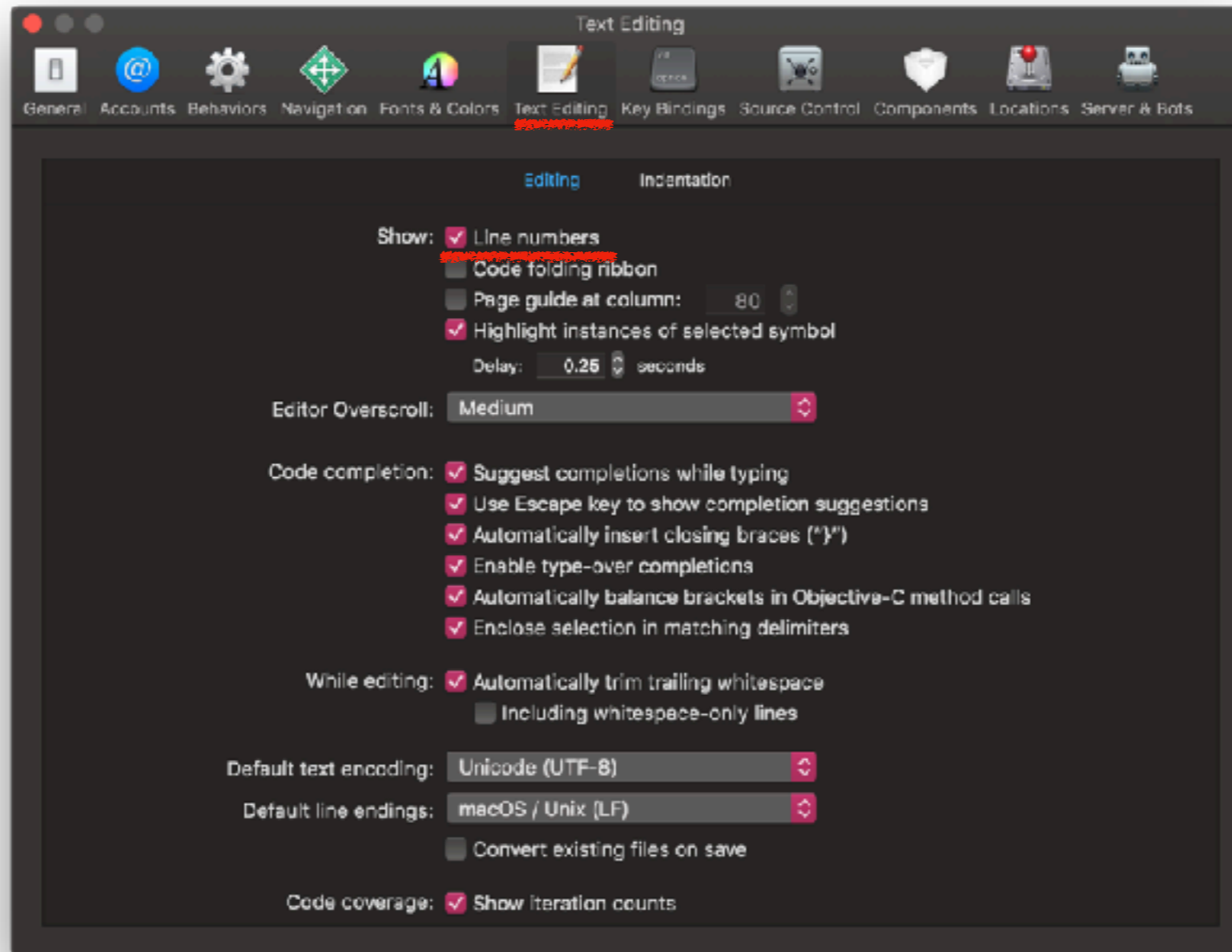
Breakpoint

브레이크 포인트 걸기

```
8
9  import Foundation
10
11  var sum = 0
12  for i in 0...100 {
13      sum += i
14  }
15  print(sum)
16
```

Breakpoint

라인에 숫자표시



Breakpoint

Debug Area

```
8
9 import Foundation
10
11 var sum = 0
12 for i in 0...100 {
13     sum += i
14 }
15 print(sum)
```

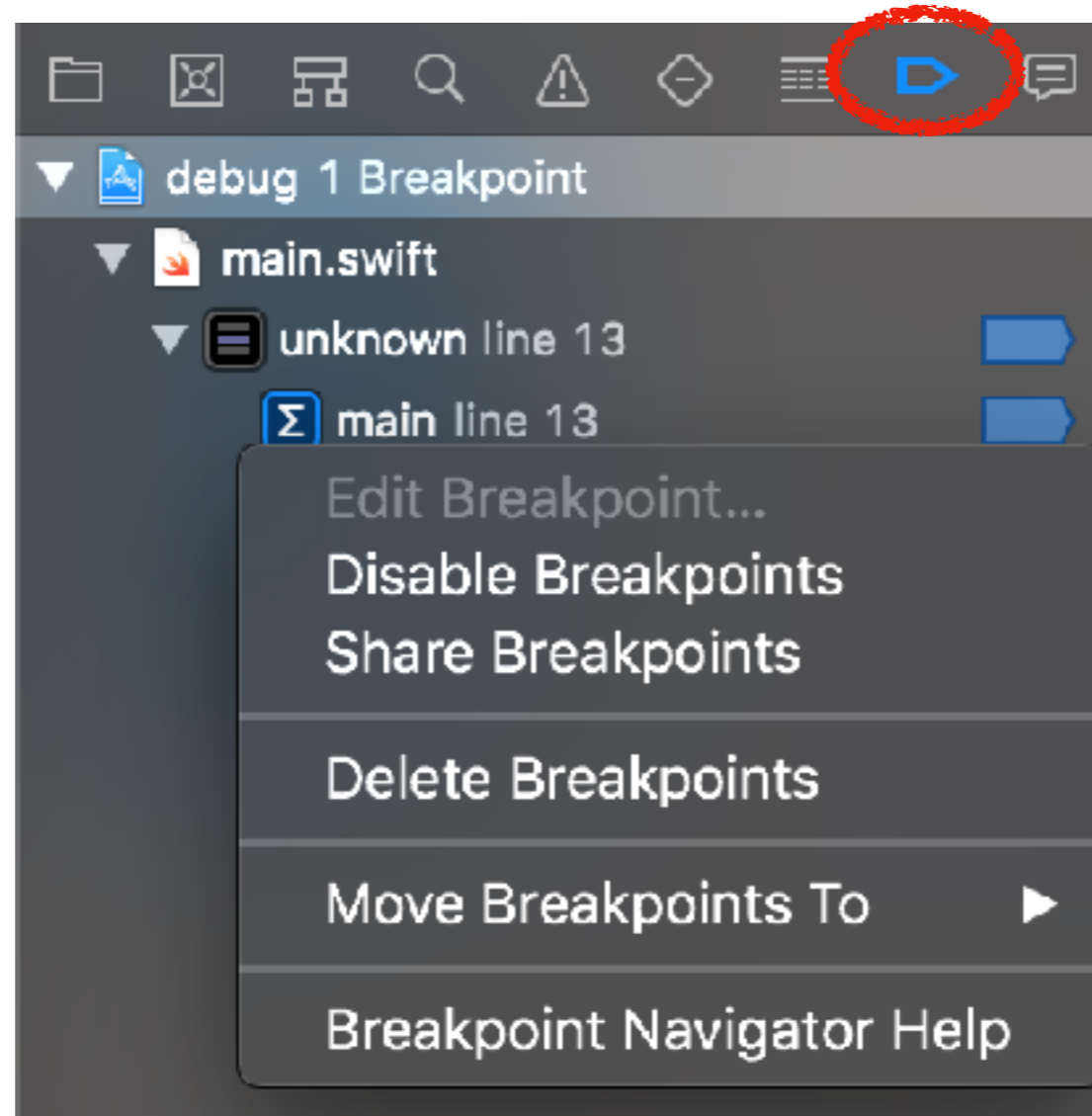
Thread 1: breakpoint 2.1

debug > Thread 1 > 0 main

L i = (Int) 0 (lldb)

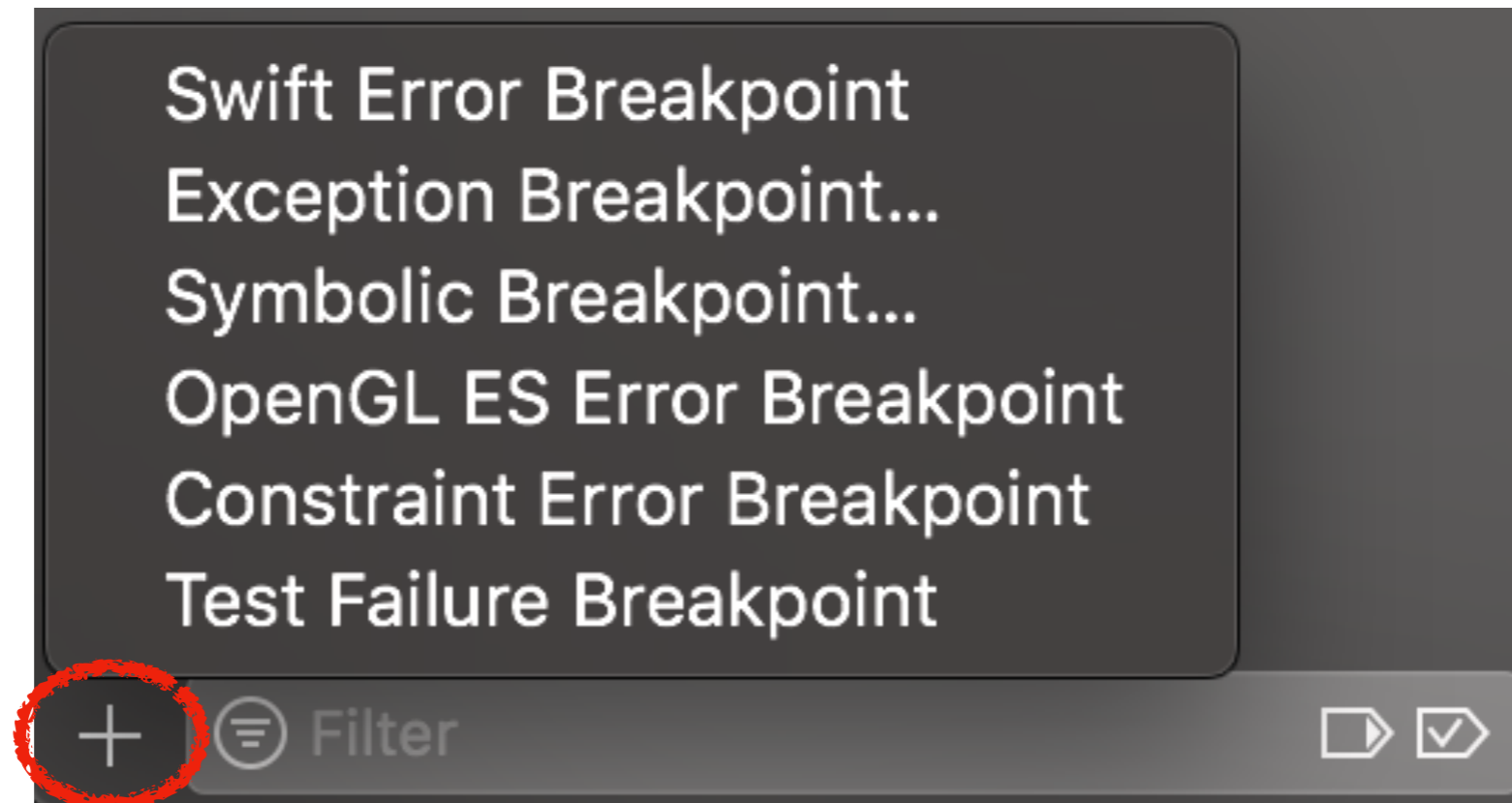
Breakpoint

Breakpoint navigator



Breakpoint

General Breakpoint



lldb

lldb?

- * Xcode에 기본으로 내장되어있는 디버거(debugger)
- * LLDB 명령어 분석기에는 파이썬(Python) 인터프리터가 내장
- * 기존에 가장 많이 사용되던 gdb보다 많은 유용한 기능 보유
- * LLDB에서 기본적인 GDB 스타일의 명령어를 대부분 사용가능
- * lldb.lvm.org/lldb-gdb.html

lldb

lldb Command



print



expr



po

print와 expr 차이

```
print sum = 100
```

```
expr sum = 100
```

```
e -h -- +17
```

```
e -- -h +17
```

```
p == e --
```

lldb

변수선언

```
e let $a = 2  
p $a * 19
```

lldb

print 퀴즈

p/x 16

p/o 16

p/t 16

<https://sourceware.org/gdb/onlinedocs/gdb/Output-Formats.html>

lldb

Bonus closure?

```
(lldb) po $0  
error: <EXPR>:3:1: error: anonymous closure argument not contained in a closure  
$0  
^
```

```
(lldb) fr v $0  
(String) $0 = "name"
```


실습

Symbolicate

Symbolicate

Symbolicate

Triggered by Thread: 0

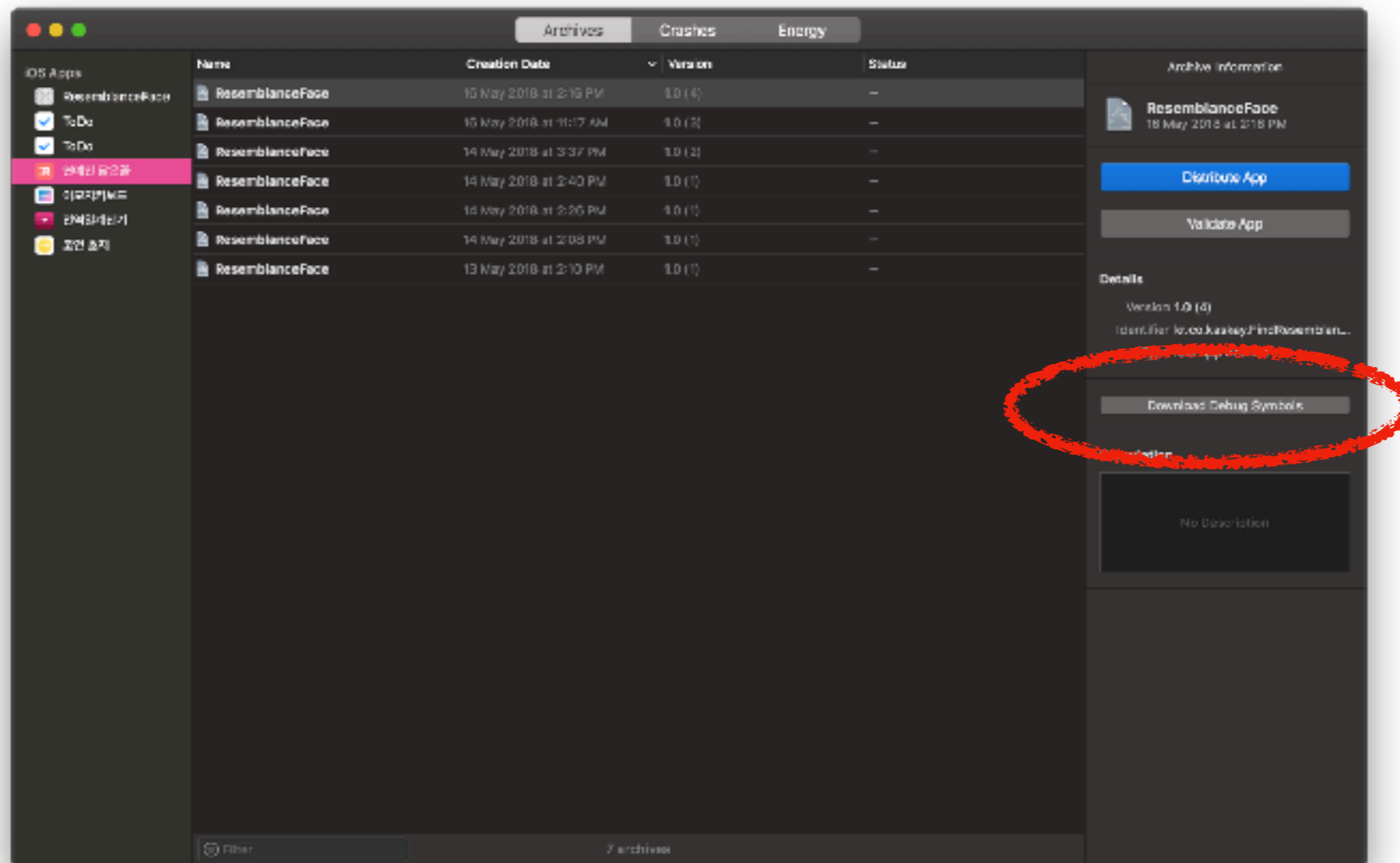
Filtered syslog:
None found

Thread 0 name: Dispatch  com.apple.m

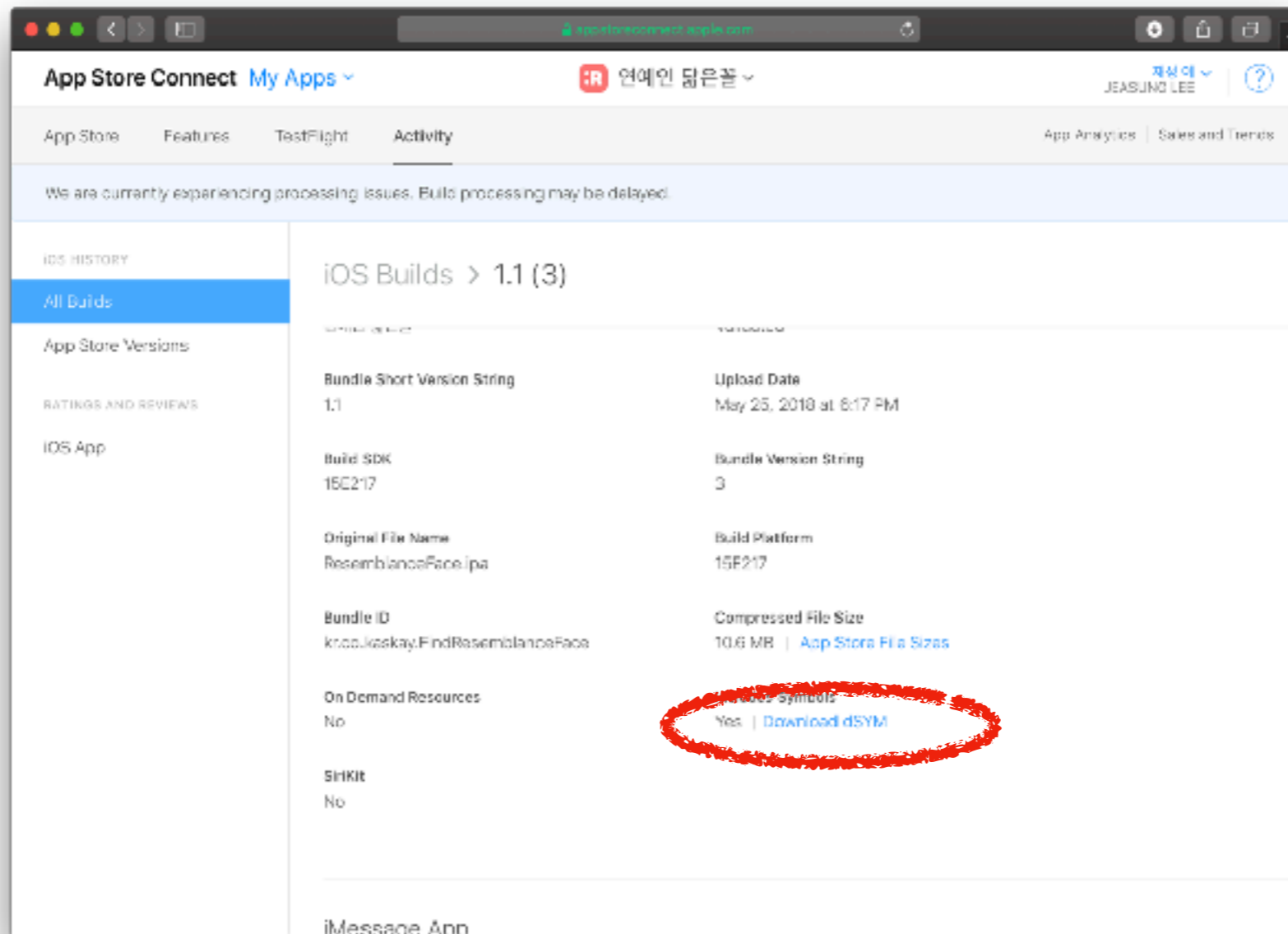
Thread 0 Crashed:

0	libsystem_kernel.dylib	0x0000000182977e08	0x182977000	+ 3592
1	libsystem_kernel.dylib	0x0000000182977c80	0x182977000	+ 3200
2	libdispatch.dylib	0x000000018281a8b8	0x182803000	+ 96440
3	libdispatch.dylib	0x000000018281adb0	0x182803000	+ 97712
4	libxpc.dylib	0x0000000182b748d8	0x182b6e000	+ 26840
5	Security	0x0000000183b49180	0x183b3e000	+ 45440
6	Security	0x0000000183b494cc	0x183b3e000	+ 46284
7	Security	0x0000000183bb094c	0x183b3e000	+ 469324
8	Security	0x0000000183baf718	0x183b3e000	+ 464664
9	Security	0x0000000183bae1f4	0x183b3e000	+ 459252
10	Security	0x0000000183baeb58	0x183b3e000	+ 461656
11	Security	0x0000000183baccc8	0x183b3e000	+ 453832
12	Security	0x0000000183baf17c	0x183b3e000	+ 463228
13	Okapi	0x0000000105187ba8	0x105158000	+ 195496
14	libdispatch.dylib	0x0000000182804ae4	0x182803000	+ 6884
15	libdispatch.dylib	0x00000001828082ec	0x182803000	+ 21228
16	Okapi	0x0000000105187ae0	0x105158000	+ 195296

Symbolicate dSYMS



Symbolicate dSYMS



Symbolicate

Symbolicate

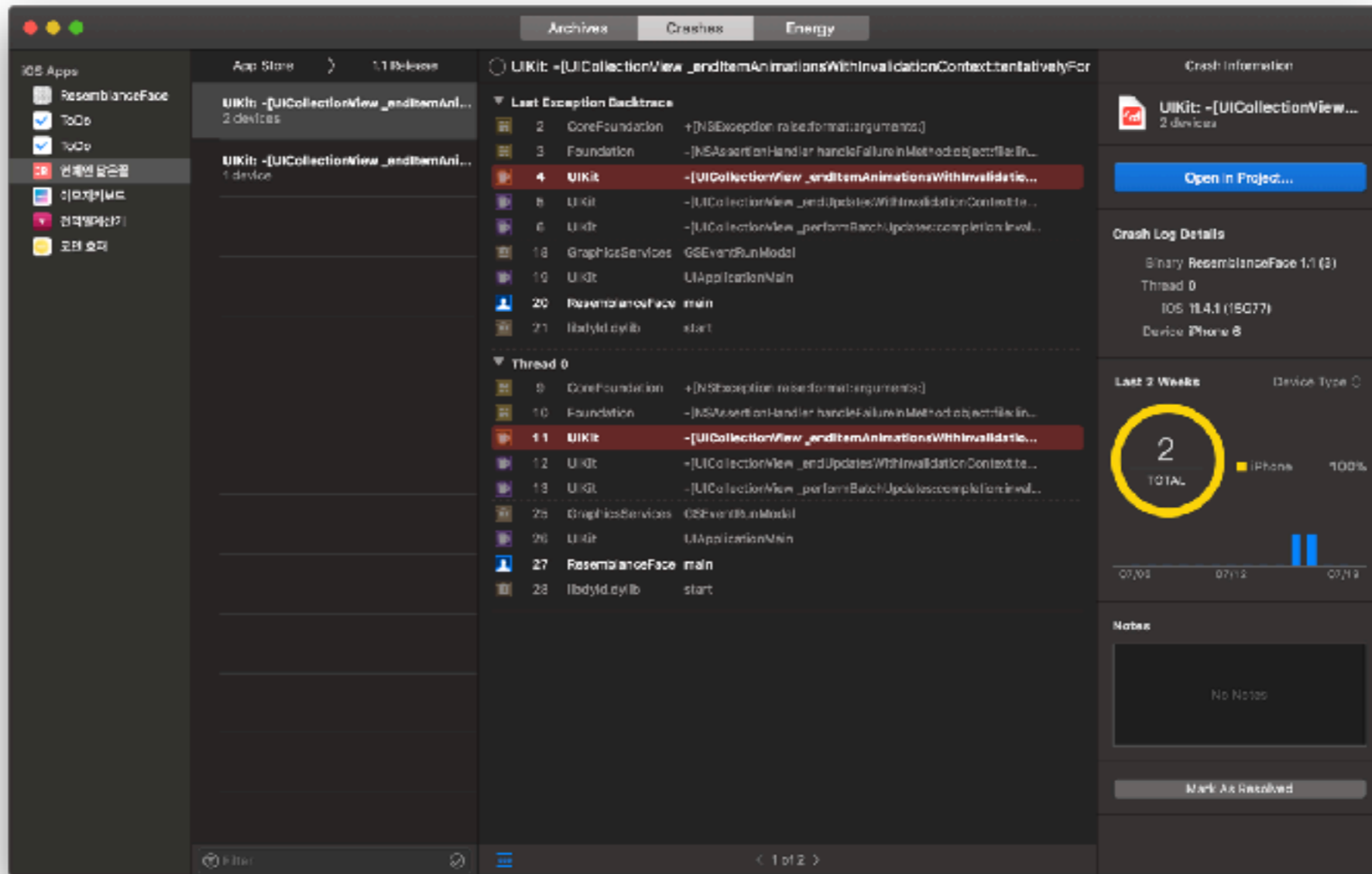
```
/Applications/Xcode.app/Contents/SharedFrameworks/DVTFoundation.framework/Versions/A/Resources/  
symbolicatecrash
```

```
export DEVELOPER_DIR="/Applications/XCode.app/Contents/Developer"
```

```
./symbolicatecrash -v MyApp-Crash-log.crash MyApp.dSYM
```

Symbolicate

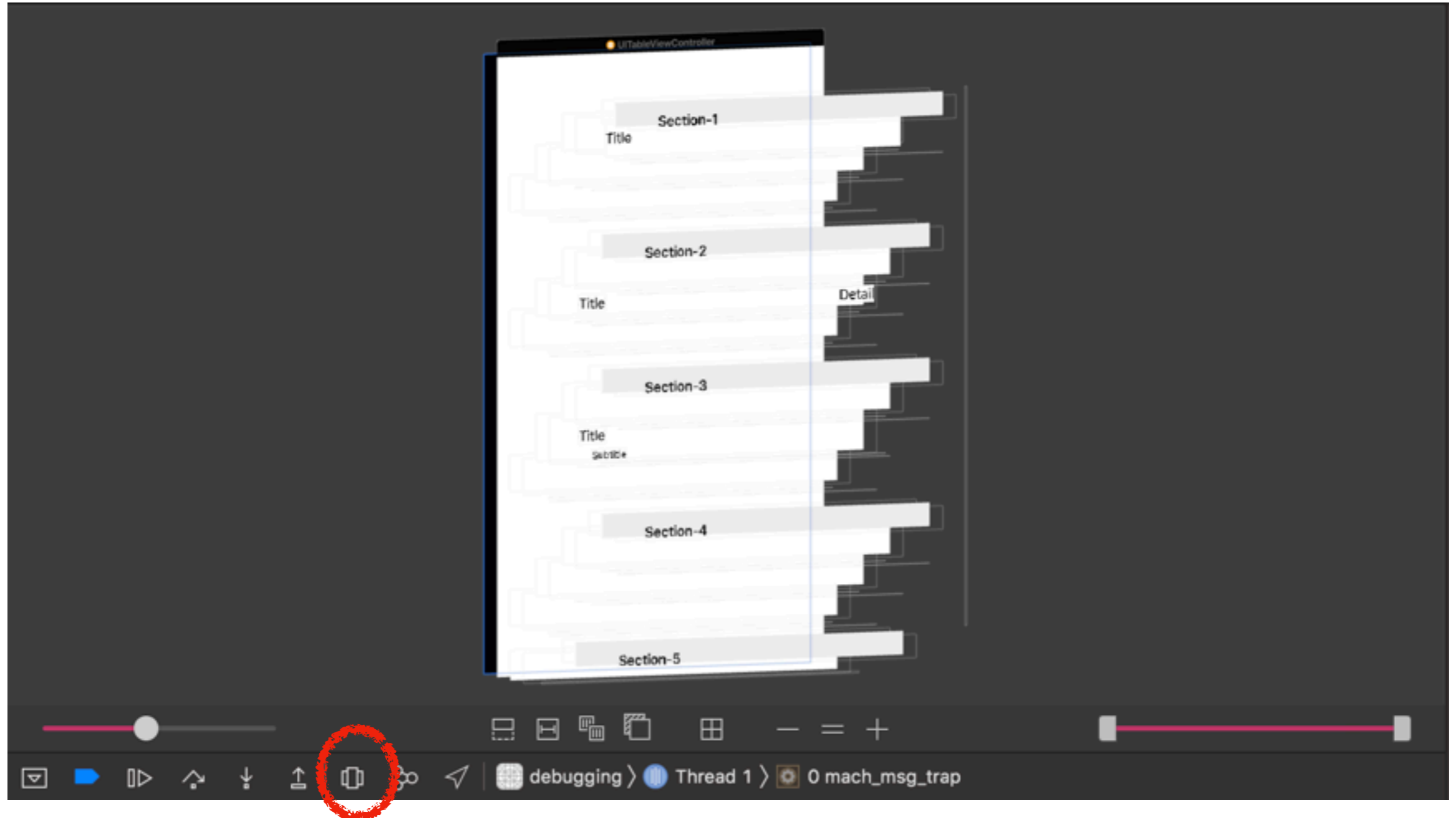
Symbolicate



ETC

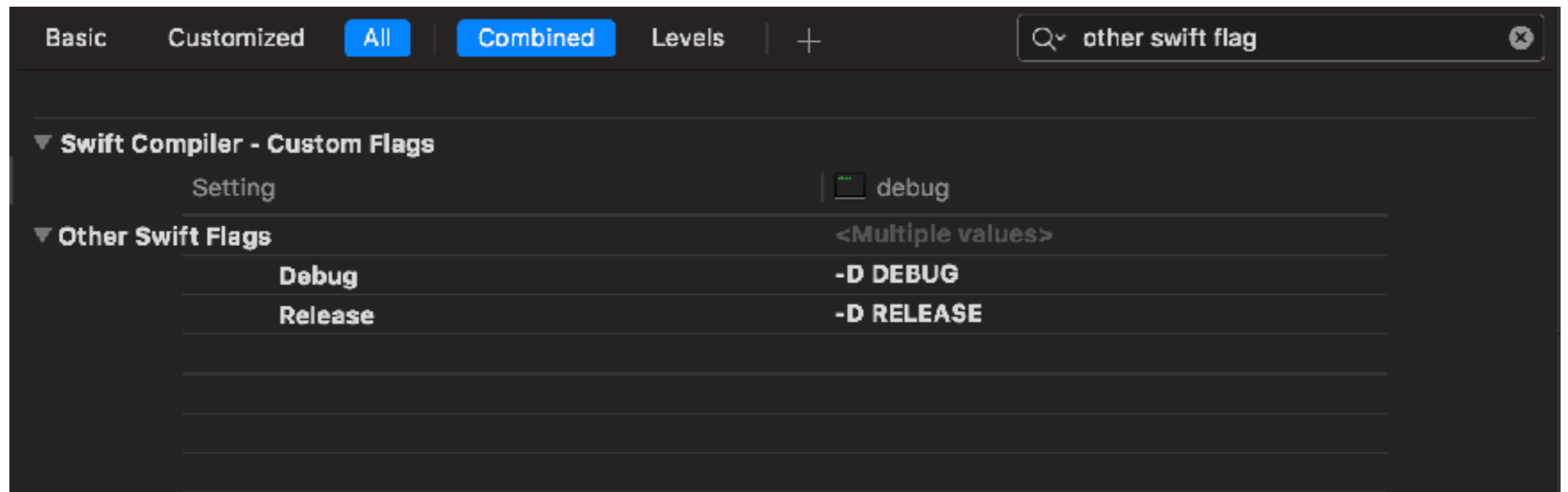
ETC

#View hierarchy



ETC

#DEBUG



ETC

#DEBUG

```
9  import Foundation
10
11  var sum = 0
12  #if DEBUG
13  for i in 0...100 {
14      sum += i
15  }
16  #endif
17  print(sum)
```

꽃
사람

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