极客学院
jikexueyuan.com

Android Monkey测试详细介绍（下）

Android Monkey测试详细介绍（下）— **课程概要**

- Monkey结果解读
- Monkey异常结果
- Monkey测试策略介绍

Monkey结果解读

Monkey结果解读

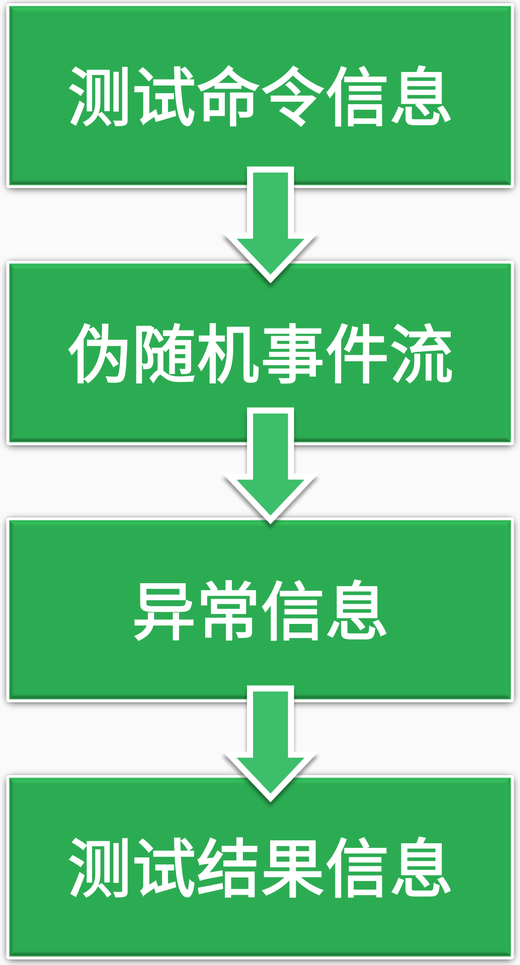
本课时我们将学习以下知识点：

- Monkey结果分类
- Monkey结果详细解读

测试完，要能看懂结果，快速定位出问题，修复后能进行验证，才能发挥测试的效果。

Monkey介绍—Monkey结果分类

Monkey运行log输出，按以下顺序输出



随机种子、运行次数、可运行的应用列表、各事件百分比

11大事件流

ANR、CRASH等异常

完成事件、旋转情况、按键情况、网络状态

Monkey介绍—Monkey结果详细解读

测试命令信息

:Monkey: seed=1435740661667 count=5000 →随机种子与运行次数

:AllowPackage: com.android.settings →允许测试的包

:IncludeCategory: android.intent.category.LAUNCHER →Category包含 LAUNCHER

:IncludeCategory: android.intent.category.MONKEY →Category包含 MONKEY

查询条件

// Selecting main activities from category android.intent.category.LAUNCHER →查询结果列表

// - NOT USING main activity com.android.contacts.activities.PeopleActivity (from package com.android.contacts)

// + Using main activity com.android.settings.Settings (from package com.android.settings)

.....

// - NOT USING main activity com.lenovo.timertest.Timertest (from package com.lenovo.timertest)

// Selecting main activities from category android.intent.category.MONKEY

// + Using main activity com.android.settings.Settings$RunningServicesActivity (from package com.android.settings)

// + Using main activity com.android.settings.Settings$StorageUseActivity (from package com.android.settings)

// - NOT USING main activity com.android.launcher3.Launcher (from package com.android.launcher3)

Monkey介绍—Monkey结果详细解读

// Seeded: 1435740661667 →随机种子
// Event percentages:
// 0: 15.0% →事件0：--pct-touch
// 1: 10.0% →事件1：--pct-motion
// 2: 2.0% →事件2：--pct-pinchzoom
// 3: 15.0% →事件3：--pct-trackball
// 4: -0.0% →事件4：--pct-rotation
// 5: 25.0% →事件5： --pct-nav
// 6: 15.0% →事件6：--pct-majornav
// 7: 2.0% →事件7：--pct-syskeys
// 8: 2.0% →事件8： --pct-appswitch
// 9: 1.0% →事件9：--pct-flip
// 10: 13.0% →事件10：--pct-anyevent

Monkey介绍—Monkey结果详细解读

各事件截取一个事件

事件0 --pct-touch

:Sending Touch (ACTION_DOWN): 0:(299.0,255.0)

:Sending Touch (ACTION_UP): 0:(302.0262,250.57063)

事件1 --pct-motion

:Sending Touch (ACTION_DOWN): 0:(328.0,220.0)

:Sending Touch (ACTION_MOVE): 0:(317.66824,217.7649)

:Sending Touch (ACTION_MOVE): 0:(315.09308,217.11836)

:Sending Touch (ACTION_MOVE): 0:(304.76135,214.29372)

:Sending Touch (ACTION_UP): 0:(291.04208,211.98477)

事件3 --pct-trackball

:Sending Trackball (ACTION_MOVE): 0:(0.0,1.0)

:Sending Trackball (ACTION_MOVE): 0:(-1.0,-4.0)

:Sending Trackball (ACTION_MOVE): 0:(1.0,1.0)

Monkey介绍—Monkey结果详细解读

事件2--pct-pinchzoom

:Sending Touch (ACTION_DOWN): 0:(487.0,209.0)
:Sending Touch (ACTION_POINTER_DOWN 1): 0:(486.9106,205.45831) 1:(194.0,366.0)
:Sending Touch (ACTION_MOVE): 0:(484.5785,183.66449) 1:(206.95853,375.98056)
:Sending Touch (ACTION_MOVE): 0:(471.26563,161.93521) 1:(218.35042,380.1656)
:Sending Touch (ACTION_MOVE): 0:(457.90872,153.87688) 1:(222.07701,383.26407)
:Sending Touch (ACTION_MOVE): 0:(452.51602,142.13242) 1:(242.29489,384.48602)
:Sending Touch (ACTION_MOVE): 0:(444.63513,124.26505) 1:(255.93825,391.4393)
:Sending Touch (ACTION_MOVE): 0:(444.01697,120.63037) 1:(273.75214,395.4244)
:Sending Touch (ACTION_MOVE): 0:(434.89807,117.38953) 1:(294.31616,402.74707)
:Sending Touch (ACTION_POINTER_UP 1): 0:(428.31845,98.71772) 1:(294.42966,402.80002)
:Sending Touch (ACTION_UP): 0:(415.8634,86.58714)

事件5 --pct-nav

:Sending Key (ACTION_UP): 19   // KEYCODE_DPAD_UP
:Sending Key (ACTION_DOWN): 20   // KEYCODE_DPAD_DOWN
:Sending Key (ACTION_UP): 21   // KEYCODE_DPAD_LEFT
:Sending Key (ACTION_DOWN): 22   // KEYCODE_DPAD_RIGHT

Monkey介绍—Monkey结果详细解读

事件6 --pct-majornav

:Sending Key (ACTION_DOWN): 82   // KEYCODE_MENU
:Sending Key (ACTION_DOWN): 23   // KEYCODE_DPAD_CENTER

事件7 --pct-syskeys

:Sending Key (ACTION_DOWN): 4   // KEYCODE_BACK
:Sending Key (ACTION_DOWN): 5   // KEYCODE_CALL
:Sending Key (ACTION_DOWN): 25   // KEYCODE_VOLUME_DOWN
:Sending Key (ACTION_DOWN): 24   // KEYCODE_VOLUME_UP
:Sending Key (ACTION_UP): 3   // KEYCODE_HOME

事件8 --pct-appswitch

:Switch:
#Intent;action=android.intent.action.MAIN;category=android.intent.category.LAUNCHER;launchFlags=0x10200000;component=com.android.calendar/.AllInOneActivity;end
    // Allowing start of Intent { act=android.intent.action.MAIN cat=[android.intent.category.LAUNCHER] cmp=com.android.calendar/.AllInOneActivity } in package com.android.calendar

Monkey介绍—Monkey结果详细解读

事件9 --pct-flip

:Sending Flip keyboardOpen=true
:Sending Flip keyboardOpen=false

事件10 --pct-anyevent

:Sending Key (ACTION_DOWN): 128 // KEYCODE_MEDIA_CLOSE
:Sending Key (ACTION_UP): 128 // KEYCODE_MEDIA_CLOSE
:Sending Key (ACTION_DOWN): 57 // KEYCODE_ALT_LEFT
:Sending Key (ACTION_UP): 57 // KEYCODE_ALT_LEFT
:Sending Key (ACTION_DOWN): 9 // KEYCODE_2
:Sending Key (ACTION_UP): 9 // KEYCODE_2
:Sending Key (ACTION_DOWN): 61 // KEYCODE_TAB
:Sending Key (ACTION_UP): 61 // KEYCODE_TAB
……

事件4：--pct-rotation 屏幕旋转百分比 隐藏事件

:Sending rotation degree=0, persist=true
:Sending rotation degree=1, persist=false
:Sending rotation degree=2, persist=true
:Sending rotation degree=3, persist=false

Monkey介绍—Monkey结果详细解读

延时：

Sleeping for 0 milliseconds

所有事件跑完结束：

Events injected: 100
:Sending rotation degree=0, persist=false
:Dropped: keys=0 pointers=0 trackballs=0 flips=0 rotations=0
Network stats: elapsed time=270ms (0ms mobile, 0ms wifi, 270ms not connected)
// Monkey finished

遇到异常结束：

** Monkey aborted due to error.
Events injected: 1744
:Sending rotation degree=0, persist=false
:Dropped: keys=3 pointers=8 trackballs=0 flips=0 rotations=0
Network stats: elapsed time=55269ms (0ms mobile, 0ms wifi, 55269ms not connected)
** System appears to have crashed at event 1744 of 10000 using seed 1435753466327

Monkey异常结果

Monkey异常结果

本课时我们将学习以下知识点：

- Monkey异常结果
- Java常见错误类型

测试结果有异常信息，需要具备初步的异常分析能力。

Monkey异常结果— Monkey异常结果

ANR输出异常格式：

```
System.err.println("// NOT RESPONDING: " + processName + " (pid " + pid + ")");
```

Crash输出异常格式：

```
System.err.println("// CRASH: " + processName + " (pid " + pid + ")");
System.err.println("// Short Msg: " + shortMsg);
System.err.println("// Long Msg: " + longMsg);
System.err.println("// Build Label: " + Build.FINGERPRINT);
System.err.println("// Build Changelist: " + Build.VERSION.INCREMENTAL);
System.err.println("// Build Time: " + Build.TIME);
System.err.println("// " + stackTrace.replace("\n", "\n// "));
```

Monkey异常结果— Monkey异常结果

ANR输出输出LOG：

// NOT RESPONDING: com.android.quicksearchbox (pid 6333)

ANR in com.android.quicksearchbox (com.android.quicksearchbox/.SearchActivity)

CPU usage from 8381ms to 2276ms ago:

procrank: → adb shell procrank

anr traces: →保存于/data/anr/traces.txt

meminfo: →adb shell dumpsys meminfo

Bugreport →adb bugreport 可选通过 --bugreport 参数控制

Monkey异常结果— Monkey异常结果

CRASH输出输出LOG：

// CRASH: com.android.quicksearchbox (pid 1699)
// Short Msg: java.lang.NullPointerException
// Long Msg: java.lang.NullPointerException: Attempt to invoke virtual method 'com.android.quicksearchbox.SourceResult com.android.quicksearchbox.Suggestions.getResult()' on a null object reference
// Build Label: generic/vbox86p/vbox86p:5.0/LRX21M/buildbot12160004:userdebug/test-keys
// Build Changelist: eng.buildbot.20141216.000103
// Build Time: 1418684697000
// java.lang.RuntimeException: Unable to stop activity {com.android.quicksearchbox/com.android.quicksearchbox.SearchActivity}: java.lang.NullPointerException: Attempt to invoke virtual method 'com.android.quicksearchbox.SourceResult com.android.quicksearchbox.Suggestions.getResult()' on a null object reference
// at android.app.ActivityThread.performStopActivityInner(ActivityThread.java:3344)
// at android.app.ActivityThread.handleStopActivity(ActivityThread.java:3390)
// at android.app.ActivityThread.access$1100(ActivityThread.java:144)
// at android.app.ActivityThread$H.handleMessage(ActivityThread.java:1307)
// at android.os.Handler.dispatchMessage(Handler.java:102)
// at android.os.Looper.loop(Looper.java:135)

Monkey异常结果— Java常见错误类型

常见错误类型举例

异常与错误类型	说明
java.lang.NullPointerException	空指针异常
java.lang.ArrayIndexOutOfBoundsException	数组溢出
java.lang.ClassNotFoundException	类不存在
java.lang.ArithmeticException	数学运算异常
java.lang.IllegalArgumentException	方法参数异常
java.io.FileNotFoundException	文件未找到
java.lang.NumberFormatException	数值转化异常
java.lang.StackOverflowError	堆栈异常错误
java.lang.OutOfMemoryError	内存溢出错误

Monkey测试策略介绍

Monkey测试策略介绍

策略例子1：整机测试，而不测试拨号盘应用，忽略所有错误，次数100万次

- adb shell monkey --ignore-crashes --ignore-timeouts --pkg-blacklist-file /data/local/tmp/blacklist.txt -v -v 1000000

策略例子2：测试计算器30万次，随机种子为100，随机延迟0-1秒，忽略所有错误

- adb shell monkey -p com.android.calculator2 -s 100 --throttle 1000 --randomize-throttle --ignore-crashes --ignore-timeouts -v -v 300000

策略例子3：测试计算器，触摸事件30%，其他按键50%，错误停止，延时200

- adb shell monkey -p com.android.calculator2 --throttle 200 --pct-touch 30 --pct-anyevent 50 -v -v 100000

策略例子4：对计算器进行旋转压力测试，事件延时2秒,10万次

- **adb shell monkey -p com.android.calculator2 --pct-rotation 100 --throttle 2000 100000**

策略例子5：仅对整机的应用开启测试,事件延时5秒,10万次

- **adb shell monkey --pct-appswitch 100 --throttle 5000 100000**

Android Monkey测试详细介绍（下）

本套课程中我们学习了Monkey工具测试结果查看。你应当掌握了以下知识：

- 能阅读Monkey的运行log
- 能按照测试需求组合测试命令

你可以使用这些技巧来测试你的应用，如果想继续提高，你可以继续在极客学院学习《 Monkey脚本编写与检查内存泄露》课程。

极客学院

jikexueyuan.com

中国最大的IT职业在线教育平台