**Software testing**

**for An Application of Android--Daily Money**

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# Introduction

Daily money is a simple and easy financial management application for Android users. It helps users to record their money not only income and expenses but also assets and liabilities anytime and anywhere. It is also a google code open source project; it is free to use and easily download from <https://code.google.com/p/daily-money>. Current version is 0.9.8-121107. It requires Android 2.1 or newer.

## APP Description

### User interface

Daily Money has two user interfaces: Main and Reports.

1. Main contains Add details, Daily List, Weekly List, Monthly List, Yearly List, Accounts, Data, Preference, etc.
2. Reports contain Monthly Balance, Yearly Balance and Cumulative Balance.

### Functions

1. Initial User’s Accounts: There are five types account (Income, Expense, Asset, liability and other). Users can input initial value for each account. Note: the account type Other is not available in this version.
2. Manage users’ financial record: Users can record each transaction of each account.
3. Display users’ financial record by weekly, monthly or yearly.
4. Data backup: Users can backup their data to CVS or SD card.
5. Password protection: Users can set their password to keep their records secure.

### Non-functional features

1. Performance: Response time is less than 10 sec.
2. Compatibility: It should be compatible with SD card and Android version.
3. Security: It provides password protection and no harm for Android devices.
4. Usability: All functions mentioned in this version should work well.
5. Reliability: In the same condition, the same input gets the same output each time.
6. Testability

## Unit: Methods of Calculator—evaluate()

### Function description

This unit is one of the calculator’s functions and displays the result in Money field when create/ update a record.

Evaluate() is the one method in Add detail, and it can evaluate a string input as the expression. Input can be a number, an expression or other string. Base on the inputs, outputs can be the result of expression or display “Error”.

### Faults

Function evaluate()may have some faults.

1. Input errors. For example, invalid expressions.
2. Data type errors. For Example, Money field accepts number only, no other characters or allows input integer only, no fractional part; or forbids negative.
3. Display errors. For example, this app can support multi-language; some unread characters maybe occur.
4. Size errors. For example, Date field supports one year only. Money field could not be large number or very long number.
5. Logic errors. For example, calculate error.

# APP Main Features

* Manage/Record users’ daily expense, income, asset and liability, etc.
* Show and count the details weekly, monthly or yearly.
* Export/Import to\from CSV
* Pie and time chart of balance
* Account management

# APP Risks and Faults and Limitations

## Risks

Since this application is FOSS (Free Open Source Software), there are no guarantee on software quality and performance; no guarantee on all functions work and no guarantee on maintains. Moreover, it is free to everyone to modify and use; it could have compatibility risk.

## Faults

Refer to Section 1.2.2 and may have other faults.

1. Compute errors. For example, balances compute error.
2. Logical errors. For example, some conflict on source account and destination account.
3. Output errors. For example, partial records display only when users view the balance by weekly.
4. Exist Defects. Refer to Section 6 Appendix.

## APP Limitations

* Requires Android 2.1 or newer
* Account types (Income, Expense, Asset, Liability) are fixed, could not be add a new type.
* One currency has only been in it. Users could not manage different currencies at the same time.

# Testing plan

## Functional Unit testing for Evaluate()

### Test strategies

It is impossible to do exhaustive test for all inputs, since in this unit the string inputs may include four standard functions and eight scientific functions of a calculator, each function has infinite input value. An expression can be infinite combination of numbers and operators. Hence, to test this unit we should use Invalid Input Testing, Equivalence Class testing, Output Testing and pairwise testing to narrow the test suites. Additionally, considering Boundary testing if applicable since data type has no specified range, but we should consider the data type limits.

Note: The original Evaluate() is in Logic.java. For the test sake, I isolate it from Logic.java and create a new class for it. And use Junit test framework to do this unit test.

### Test case specifications

Here are the lists of test suits specification:

#### Size of a string input (valid and invalid)

1. Size is 0/ null.(S1)
2. Size is 1, could be a number, operator or other char.(S2)
3. Size is small.(S3)
4. Size is middle.(S4)
5. Size is large. (at least including all operators once) (S5)

#### Position of an operator (valid and invalid)

1. At beginning, may be valid like, -, log, may be invalid like \*,\. (P1)
2. At middle, and between two numbers.(P2)
3. At end. (P3)
4. Continuous operators (P4)

#### Numbers(inputs)

1. All positive (N1)
2. All negative(N2)
3. Most positive(N3)
4. Most negative(N4)
5. 0 (especial 0 as denominator)(N5)
6. Contain blank (one or more)(N6)
7. Contain large number(N7)

#### Output

1. 0/null (O1)
2. Positive (O2)
3. Negative (O3)
4. Infinite (O4)
5. Error (O5)
6. Large number (O6)
7. Output length is zero.(O7)
8. Output length is one.(08)
9. Output length is >1 (O9)
10. Output length is not the same with the output length defined by input. (10)

(Note number 10 may not necessary since the parameter is not exist in original evaluate().)

#### Other interesting case

1. Input is/contains e (I1)
2. Input is/contains π (I2)
3. log(X) and log10(x) (I3)

### Test Case

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No. of test case | Descriptions | Inputs | Expected Output | Status of the test | (Refer to test specification ID) | Remarks |
|  | To test evaluate() that can deal with null string when input is null and returns ””. | nothing | “” | Pass | S1  O1  O7 |  |
|  | To test evaluate() that can deal with a number when input a number only and returns that number. | 0 | 0 | Pass | S2  O8  N5 |  |
|  | To test evaluate() that can deal with any operator and returns “error” when input an operator only | / | error | fail | S2  O5 | In fact, from GUI it’s impossible to input this string. |
|  | To test evaluate() that can deal with a sting only contain one symbol when Input a char only | = | error | fail | S2  O5 | In fact, from GUI it’s impossible to input this string. |
|  | To test evaluate() that can deal with a sting contain two or more continuous operators, it return “error” | Log5++6--- | error | fail | P3  P4  O5 | In fact, from GUI it’s impossible to input this string. |
|  | When input is a small string, the evaluate() can handle and returns result of the evaluation if the input is a complete expression. | 2! | 2 | Pass | S3  O10 |  |
|  | When input is a middle string, the evaluate() can handle and returns result of the evaluation if the input is a complete expression. | 2+3\*7-4/7+log(10)+2!+sin(3)+7.8886090E69/190000-3.8886090E69 | -3.888567E69 | Pass | S4  N7 O6 |  |
|  | When input is a middle string, the evaluate() can handle and returns result of the evaluation if the input is a complete expression. | (-(2\*8+4-0)/7\*6+6-tan(5)-log(2\*cos(3)+sin(10)+e)- (π/9))\*(-3+8/9)+√9+5^100 | 7.8886090E69 | Pass | S5  O6  I1  I2  N3 |  |
|  | To test evaluate() that can deal with a string that is a complete expression begins with “-”. | -9+ 3 | -6 | Pass | P1  O3  N6 |  |
|  | To test evaluate() that can deal with a string that is a complete expression begins with “+”. | +3+3 | 6 | Pass | P1  P2  O2 |  |
|  | To test evaluate() that can deal with a string that is a complete expression begins with “log”. | log(7+8)\*log10(30) | 1.7372293962 | Pass | P1  I3  O7 |  |
|  | To test evaluate() that can deal with a string that is a complete expression begins with “sin”. | sin(-9) | -0.412118485 | Pass | P1  O9 |  |
|  | To test evaluate() that can deal with a string that is a complete expression begins with “cos”. | Cos(6000) | 0.9039115103 | Pass | P1  O9 |  |
|  | To test evaluate() that can deal with a string that is a incorrect expression begins with “\*”. It returns “error” | \*(8+9)-9 | Error | Fail | P1 | In fact, from GUI it’s impossible to input this string. |
|  | When input sting contains most of negative and it is complete expression, evaluate() can return the evaluation result of the expression. | -2\*(-8)-tan(-10)+e)+ π | 17.071671652 | Pass | N4 |  |
|  | When input sting contains all of negative and it is complete expression, evaluate() can return the evaluation result of the expression. | -3+(-8)\*(-9)/(-9) | -11 | Pass | N2 |  |
|  | When input sting contains all of positive and it is complete expression, evaluate() can return the evaluation result of the expression. | 3+8\*(9/1)+tan(2!+sin(30)) | 76.599186355 | Pass | N1 |  |
|  | To test evaluate() when input is 0 as denominator | 9/0 | ∞ | Pass | N5  O4 |  |
|  | To test evaluate() when input is blank, it returns “”. | “ ” | “” | Pass | N6 |  |
|  | To test evaluate() that can deal with a sting contain two or more continuous operators except +,- \*/, it returns the evaluation result of the expression. | log(2)log(6)2!! | 0.4684937350 | Pass | N4  P2  I3 |  |
|  | To test evaluate() that can deal with a sting that is not complete expression returns “Error” | (-(2\*8+4-0)/7\*6+6-tan(5)-log(2\*cos(3)+sin(10))+e/9))\*(-3+8/9)) | Error | Pass | O5 |  |
|  | To test evaluate() that can deal with a string that is not complete expression returns “Error” | 8+7\*8^2-9)ln3 | Error | fail | N5 | I don’t think it is a bug but need to enhance. |

### Test Report

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | No. refer to test case | Bugs’ descriptions | Severity (0-5 and 0 is highest) | Remarks |
|  | 3 | Evaluate( ) cannot return “Error” when input string only contain one symbol “/” |  | I do not think it is a bug. In fact, from GUI it is impossible to input this string. |
|  | 4 | Evaluate( ) cannot return “Error” when input string only contain one symbol “=” |  | I do not think it is a bug. In fact, from GUI it is impossible to input this string. |
|  | 5 | Evaluate( ) cannot return “Error” when input string is “log5++6---“ |  | I do not think it is a bug. In fact, from GUI it is impossible to input this string. |
|  | 14 | Evaluate( ) cannot return “Error” when input string is \*(8+9)-9 |  | I do not think it is a bug. In fact, from GUI it is impossible to input this string. |
|  | 22 | Evaluate( ) cannot return “Error” when input string is 8+7\*8^2-9)ln3 | 5 | I do not think it is a bug but need to enhance.” (“ or “)” should be pair when they occur. |

## Structure Unit testing

### Control flow graph for evaluate(string input)

Return result.replace(‘-‘,MINUS).replace(INFINITY,INFINITY\_UNICODE)

mIsError=true;

Return mErrorString

If (input.trim()==””)

F

T

Size=input.lengthh

Return “”

While ( size>0 && isoperator(input.charAt(size-1)))

Result=util.doubleToString(mSymbols.eval(input),mLineLength,Round\_DIGITS)

size

Input= input.substring(0,size-1);

--size;

F

T

T

F

If (result==”NAN”)

### Statement Coverage

After applying Unit test case 4.1.3, the statement coverage is 100% for unit Evaluate(string input).

### Structural Test Case

Note: There are no additional unit test cases.

## Integration Testing

### Integration Testing Unit Interacts Description

In Class Logic, Function evaluate(string input) would interact with isOperator(char c) , setLineLength(int nDigit) and onEnter(). Evaluate() calls isOperator() when it need to check if the last char of the input is operator or not and setLineLength(int nDigit) would pass value of mLineLength to evaluate(string input) via memory during an expression calculating. When button”=” was selected then it would trigger onEnter() calls evaluate() to deal with a string input .

### Modules Interacts Description

Evaluate( string input) is involved among three modules: input module (GUI), logic module and display module(GUI). After a user clicks Calculator when user creates a detail record for a transaction, onCreate() would initialize GUI module and display input board(Numbers and operators) and buttons (=, OK, Close and Clear) of Calculator. When the user select button” =” after inputting an expression (a string), it triggers onEnter() calls evaluate(string input) and pass this expression(string) to evaluate(string input). Evaluate( string input) would return a result(a string, maybe numbers or “Error”) of this expression to onEnter() that displays the result on GUI. If a user select button ”OK” after calculating an expression like before. It triggers onClick() and calls getNumbericResult() that gets the result of an expression from return of evaluate(string input) via memory if the result is not “Error”.

### Faults

There are maybe some errors during the integration testing for function Evaluate(string input).

1. Change in functionality: e.g. Evaluate(string input) add a new parameter, it will impact on onEnter() that calls evaluate(string input).
2. Inadequate error processing: e.g. When onEnter() calls evaluate(string input), parameter is not a string, or null string, evaluate(string input) maybe can’t handle it.
3. Additions error processing: e.g when evaluate(string input) throws exception, it may need onEnter() do some special error handling.
4. Misuse of interface: e.g. it may misuse isOperator(char c) or isOperator(string text) in evaluate().
5. Initialization/ value errors: e.g MLineLength may be wrong.
6. Coordination of changes: Evaluate(string input) return type is changed, it will impact on getNumbericResult().

### Integration test specifications

#### Parameters/variables

1. When evaluate(string input) calls other functions/methods, it passes valid/ invalid values (data type error, out of scope).
2. When evaluate(string input) is called by other functions/methods, input values are valid/ invalid( data type error, out of scope).
3. Number of parameters: zero/null, less than defined parameter numbers, the same with the defined parameter numbers, more than defined parameter numbers.

#### Exception handle

1. Relative functions/methods throw exception when evaluate(string input) calls them.
2. Evaluate(string input) throws exception when it is called by other functions/methods.

#### Output

1. Evaluate(string input) returns the result of an expression or returns error when it is called.
2. Other functions/methods return true or false, when evaluate(string input) calls them.

### Integration Testing Case

Case1: mimic onEnter() calls evaluate(), passes a null string to evaluate(string input), check if mResult of onEnter() is “”.

Case2: mimic onEnter() calls evaluate(string input), passes an expression as input to check if mResult of onEnter() is the same with the return of evaluate(string input).

Case3: mimic onEnter() calls evaluate(string input), passes a string but not an expression, like”text” as input to check if mResult of onEnter() is Error.

Case4: call setLineLength(int nDigits) with nDigits=0, then call onEnter(), check if mResult of onEnter() is the same with the return of evaluate(string input).

Case5: calls evaluate(string input) with input is an expression, e.g. 2\*5+log(5) then calls getNumbericResult(). To check if mResult of getNumbericResult is the same with the return (10.6989700043) of evaluate(string input) if mLineLength=12.

## System testing

### Exploratory System Testing

Note: All exploratory testing are done on an Android phone and Screen rotation in Supermodel tour was done on an emulator and an Android phone both.

#### Back Alley tour: Focus on the least likely used features.

In Daily Money app, features Reset dada and Clear working folder may be the least likely used features.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Features | Tours | Times | Bugs | Test Cases |
| Reset dada | Enter Daily Money App, select Data under Main tab then click Reset Data, select All in prompt window, after that check if Detail record and account info was set to default value. | 10S | No. | Test it before creating any detail record or creating account info. |
| Clear working folder | select Data under Main tab then click Clear working folder select OK in prompt window, after that check if backup data is removed or not. | 10S | No. | Test it when backup data are belong different month or year. |
|  |  | Total:20S |  |  |

#### Lonely Businessman tour: Test the feature(s) furthest away from the starting point.

Input [an expression with scientific notation](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCQQtwIwAQ&url=http%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DDTTOrAm-jvI&ei=xmZ1VLryNorjoAStzIL4CQ&usg=AFQjCNHfd7OYJVdiVwXDE6tjonBRsWM1EQ&sig2=wjnq1g_PchXSztlKTtKzsw&bvm=bv.80642063,d.cGU) to evaluate may be the furthest away feature in DailyMoney App.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Features | Tours | Times | | Bugs | Test Cases |
| Scientific calculator | select Add Detail under Main tab and click icon marked 1234 next to Money field then swipe screen to left and enter sin(30) | 15S | | No. |  |
|  |  | Total:15S |  | |  |

#### Garbage Collection Tour: Check the interface in a methodical fashion.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Features | Tours | Times | Bugs | Test Cases |
| Add Detail | 1. Select Add Detail under Main tab. 2. Check From drop list and select one account. 3. Check To drop list and select one account 4. Input a date; check four icons next to Date. 5. Input amount in Money text box 6. click icon Calculator, check every number and scientific symbol and button 7. Input note. 8. Click button Create 9. Click button cancel. | 60S | No. |  |
| Daily list | 1. Select Daily list under Main tab. 2. Check the records 3. Click four icons (can Change the date) on the top one by one. | 10S |  |  |
| Weekly list | 1. Select Weekly list under Main tab. 2. Check the records 3. Click four icons (can Change the period) on the top one by one. | 10S |  |  |
| Monthly list | 1. Select Monthly list under Main tab. 2. Check the records 3. Click four icons (can Change the period) on the top one by one. | 10S |  |  |
| Yearly list | 1. Select Yearly list under Main tab. 2. Check the records 3. Click 3 icons (can Change the year) on the top one by one. | 5S |  |  |
| Accounts | 1. Select Accounts under Main tab. 2. Click Income icon 3. Click Expense icon 4. Click Asset icon 5. Click Liability 6. Click Other | 5S | Could not create new sub-accounts. |  |
| Data | 1. Select Data 2. Click Backup data to SD card 3. Click Export CVS and select All 4. Click Export CVS and select Account only 5. Click Export CVS and select Detail only 6. Click Share CVS and select All 7. Click Share CVS and select Account only 8. Click Share CVS and select Detail only 9. Click Create default data (account) and select Cancel then repeat this step select OK. 10. Click Import CVS and select All 11. Click Import CVS and select Account only 12. Click Import CVS and select Detail only 13. Click Reset Data and select All 14. Click Reset Data and select Account only 15. Click Reset data and select Detail only 16. Click Clear working folder and select Cancel 17. Click Clear working folder and select OK. | 180S |  |  |
| Preference | 1. Select Preferences 2. Check every item one by one | 120S | 1. I set the maximum record is one, but I can create record more than 1. 2. Additional List display whatever in Daily, Monthly or Yearly is not correct, only display the last one record, but amount total is for all records I created. |  |
| Books | 1. Select Books 2. Click an exit book and select Cancel 3. Click an exit book, change currency symbol, and check the drop list for Symbol Position, input some notes then select Update button. 4. Check symbol in Daily list. | 5S |  |  |
| About | Click About and check display. | 5S |  |  |
| Monthly balance | 1. Select Report tab 2. Select Monthly balance 3. Check records display 4. Check four icons on the top | 15S | The balance of Asset is not correct. | No records. Many records. |
| Yearly balance | 1. Select Yearly balance 2. Check records display 3. Check four icons on the top | 15S | The balance of Asset is not correct. | No records.  Records are belonged different month ,different year. |
| Cumulative Balance | 1. Select Cumulative balance 2. Check records display 3. Check four icons on the top | 15S |  | Many records |
|  |  | Total:455S |  |  |

#### Supermodel tour: Check the interface to see if it looks good

1. Check all icons and items under Main tab. All most look good and have clear meanings but Books confuses users what it does.
2. Function Initialization default value of Accounts was placed under Data not Accounts, it is not convenient and clear for users.
3. Accounts could not be created new sub-account.
4. Test tab should not be in release version.
5. Screen rotation: rotating the phone and check the icons and items. It works well on the phone; however, sometimes there is delay. Nevertheless, it does not work in the emulator.

#### Couch Potato tour: Do as little work as possible, checking for default values.

Notes: only Add detail, Accounts, Books have some field need to type/ select input value. Hence, the couch potato tour just clicks the relative icon and checks the contents of the other features. E.g. Daily List, Weekly list, and About etc.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Features | Tours | Times | Bugs | | Test Cases | |
| Add Detail | 1. Select Add Detail under Main tab. 2. Click button Create 3. Input amount in Money field then click Create button. 4. Click button cancel. | 10S | | No. | |  | |
| Accounts | 1. Select Accounts under Main tab. 2. Click Income icon then click Update button 3. Click Expense icon then click Update button 4. Click Asset icon then click Update button 5. Click Liability then click Update button 6. Click Other | 5S | | Could not create new sub-account for accounts, additionally, Other account can get the sub-account from updating the sub-account of Income, Expense, Asset, Liability only. | |  | |
| Books | 1. Select Books 2. Click an exit book and select Cancel 3. Click an exit book, then select Update button. 4. Check symbol in Daily list. | 5S | |  | |  | |
|  |  | Total:20S | |  | |  | |

#### Antisocial tour: Enter the least likely or bad inputs.

Notes: only Add detail, Accounts, Books have some field need to type. Hence, do not apply antisocial tour just for the other features. E.g. Daily List, Weekly list, About etc.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Features | Tours | Times | Bugs | | Test Cases | |
| Add Detail | 1. Select Add Detail under Main tab. 2. Input amount 0 in Money field then click Create button. 3. Try to input other char but not numbers like “testing” and “$%^&-“ 4. Input Chars in Notes field as long as possible, (more than 128). | 30S | | No. | |  | |
| Accounts | 1. Select Accounts under Main tab. 2. Click Income icon then change the name to IncomeA click Update button and then update another sub-account ‘s name to IncomeA | 5S | |  | |  | |
| Books | 1. Select Books 2. Click an exit book, then change currency symbol to a number, e.g. 10 select Update button. 3. Check symbol in Daily list. | 5S | | There are no limitations on symbol input, so if symbol is changed to a number, it will confuse users when users view the detail records. For example, if a record with amount 10 after Books were updated, the amount would display like 1010. | |  | |
|  |  | Total:40S | |  | |  | |

#### Exploratory Test Report

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Tours | Bugs’ descriptions | Severity (0-5 and 0 is highest) | Remarks |
|  | Garbage Collection Tour/ Couch Potato tour | It could not create new sub-accounts under Accounts. | 5 |  |
|  | Supermodel tour | “Books “ is not meaningful it confuses users what it does for | 5 |  |
|  | Supermodel tour | Function Initialization default value of Accounts was placed under Data not Accounts, it is not convenient and clear for users. | 5 |  |
|  | Supermodel tour | Accounts could not be created new sub-account. Additionally, there is no sub-accounts if users don’t update other accounts. | 4 |  |
|  | Supermodel tour | Test tab should not be in release version. | 5 |  |
|  | Supermodel tour | Don’t support screen rotation on an emulator. | 5 |  |
|  | Antisocial tour | There are no limitations on symbol input, for example: if symbol is changed to a number, it will confuse users when users view the detail records. | 3 |  |

### Scenario Testing

#### Scenario Testing Descriptions

Scenario Testing1:

A user tried to create a detail record of his expense after he shopped on Black Friday: he ran Daily Money App and clicks “Add detail” to create his own record. He selected From account and To account, select the date of the transition, but he forgot to input his expense then clicked the Create button.

Scenario Testing2:

A user viewed his daily list after he created a record: he clicked “Daily list” to check the records after he created detail records about his expense.

Note: an additional manual oracle: records’ information including total records, amount, and total amount should be equal with the records created by the user.

Scenario Testing 3:

A user created a password to protect his private: he started Daily Money App, and clicked “Preferences” and selected “Password Protection-1” and input “PSW1” in password text box and clicked “OK”.

Note: an additional manual oracle: it required the user input his password when he ran the App after setting.

#### Scenario Represent use cases

These above scenario exactly represent use cases: users use “Add detail” to create their records, and view their records someday after they created records and users apply a password in Daily Money App.

#### Scenario Test cases

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | Descriptions | Inputs | Expected Output | Status of the test | Bugs/Remarks |
| 1. | To test created a detail record of user’s expense A but Money filed is NULL. It should display “Money is empty” | From: Asset-Bank.A  To: Expense-Entertainment  Date:11/28/2014  Money: (blank)  Notes(blank) | A warming message: “Money is empty.” | Passed |  |
| 2. | Test feature Daily list when users viewed the records it should display the records of the current date. |  | Display records of current date expense. | Passed |  |
| 3. | Test Password Protection feature. | PSW1 | Password was set. | Passed | Password does not work. |

#### Scenario Test Report

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Bugs’ descriptions | Severity (0-5 and 0 is highest) | Remarks |
|  | Password does not work after setting. | 2 |  |

### Random testing

#### Events Descriptions

Observing the execution of Monkey, it focuses on Add detail and Balance list. Events include:

1. Click the drop list box to select input value. E.g. Click From drop list to select an account.
2. Click date increase/ decrease icons to change current date.
3. Input numbers or texts. E.g. input amount for Money field and input text input for Notes.
4. Click the Calculator icon to evaluate an expression.
5. Click Create and Cancel button.
6. Select Tab Report and click monthly balance.

#### Test

In a command prompt:

Type: cd <ADT>\sdk\platform-tools

Type: db shell monkey –p com.bottleworks.dailymoney -v 2000

#### Random Test Report

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Bugs’ descriptions | Severity (0-5 and 0 is highest) | Remarks |
|  | Monkey aborted when event injected: 1824.  java.lang.IllegalStateException: The content of the adapter has changed but ListView did not receive a notification. | 3 | Detail refer to Appendix B |

* + - 1. *Personal Opinions About Monkey*

The Monkey is very easy use and cost free. I think it is an efficient way to do stress testing on Android App, additionally it can configure the percentages of specified events.

However, I do not think it is friendly enough and strong enough. Firstly, there are no readme about the data format in command prompt window. Secondly, it is not easy to reproduce the bugs. I run Monkey 3 times on Daily Money (sending 2000, 20000, and 2000 events respectively) the first two times, it passed. The error occurs during the third round only. Thirdly, there are no warning messages or error messages sometimes. When I run the Monkey first time, there is no any output whatever in command prompt window or emulator. There are no any clues to tell what is wrong with the Monkey/ App. Finally, it is not thoroughly testing. I noticed it does not cover all of functions of Daily Money, most events focus on Create Detail, and Balance List.

# Summary /Conclusion

This project divided into four parts: Selection of Android App, Unit test, structural testing, integration testing and system testing. Through this project, I got lots:

Firstly, I learn about the theory of software testing and relative knowledge. For example, how to configure the Eclipse and Android development environment, learn about the conceptions of Software testing, learn about how to write and execute unit testing, integration test and system testing and tools of automatic testing.

Secondly, I got a testing experience from the real Android App. I found the ways to solve the problems when I wrote the unite test cases. For example, errors are like java.lang.NullPointerException and unable to resolve activity for intent…

Finally, I knew about the automatic testing tools like Robotium and Monkey. Before this project, I have no idea about these tools and no idea how to apply these tools into the real project. In this project, I wrote the scenario test cases, passed these cases, applied Monkey to do stress testing on the Daily Money, and found an issue.

The biggest challenge is I am a newer about Android App development and testing. When I imported Daily Money App into Eclispse, I met lots random errors. For example, java.lang.NullPointerException when I opened \*.xml; cannot not create a new emulator or cannot launch emulator; install \*.apk fail; or source code with errors after launching Eclipse. Most of these issues can be resolved cleaning the project and re-start Eclipse after reading some guides about Eclipse and Android development.

In addition, I selected the unit (function evaluate()) that need to be tested is neither typical general java program nor typical Android program. It does not inherit Android things but has some Android parameters. I cannot follow the tutorial to write the unit test cases. Moreover, I cannot find any useful information about how to do unit test in my case from the internet.

I studied carefully all paragraphs about the unit test from <http://developer.android.com>. I searched all similar cases or issues on the internet and tried to find some clues or idea that can help me to figure out a solution for my case. I discussed my problem with my friends, hoped I can get some helpful suggestions. A week passed I did not how to write unit tests, I did not know which test framework is suitable for my project after all get fail to pass by trying to use test framework like general unit test, AndroidTestCase and activityInstrumentationTestCase2. Finally, Professor Larson gave me a suggestion to isolate it from Logic.java and create a new class for it, applied Junit test framework to do this unit test.

If I were to test a similar app next time, I think the most different is the preparation work before test, such as to study the knowledge related to App (like about Android) systematically and comprehensively first, to read the App specification carefully, then make a feasible test plan. Additionally, I would do non-functional testing.

# Appendix A

Defects come from https://code.google.com/p/daily-money/issues/list

|  | [**ID ▼**](https://code.google.com/p/daily-money/issues/list?can=2&q=&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [**Type ▼**](https://code.google.com/p/daily-money/issues/list?can=2&q=&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [**Status ▼**](https://code.google.com/p/daily-money/issues/list?can=2&q=&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [**Priority ▼**](https://code.google.com/p/daily-money/issues/list?can=2&q=&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [**Owner ▼**](https://code.google.com/p/daily-money/issues/list?can=2&q=&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [**Reporter ▼**](https://code.google.com/p/daily-money/issues/list?can=2&q=&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [**Summary + Labels ▼**](https://code.google.com/p/daily-money/issues/list?can=2&q=&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [**...**](https://code.google.com/p/daily-money/issues/list?can=2&q=&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary#columnprefs) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | [44](https://code.google.com/p/daily-money/issues/detail?id=44&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=44&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=44&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=44&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=44&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [sandeept...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=44&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [Backup](https://code.google.com/p/daily-money/issues/detail?id=44&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [48](https://code.google.com/p/daily-money/issues/detail?id=48&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=48&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [Accepted](https://code.google.com/p/daily-money/issues/detail?id=48&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=48&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [attic...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=48&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [attic...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=48&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [java.lang.RuntimeException: Unable to pause activity](https://code.google.com/p/daily-money/issues/detail?id=48&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [60](https://code.google.com/p/daily-money/issues/detail?id=60&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=60&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=60&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=60&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=60&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [divided.mind](https://code.google.com/p/daily-money/issues/detail?id=60&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [Dot not accepted as decimal separator in some locales](https://code.google.com/p/daily-money/issues/detail?id=60&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
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|  | [84](https://code.google.com/p/daily-money/issues/detail?id=84&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=84&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=84&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=84&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=84&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [ympavlov](https://code.google.com/p/daily-money/issues/detail?id=84&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [Account to changes while keypad flipping out](https://code.google.com/p/daily-money/issues/detail?id=84&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
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|  | [90](https://code.google.com/p/daily-money/issues/detail?id=90&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=90&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=90&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=90&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=90&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [spy...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=90&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [spelling error in german interface](https://code.google.com/p/daily-money/issues/detail?id=90&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [93](https://code.google.com/p/daily-money/issues/detail?id=93&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=93&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=93&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=93&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=93&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [drmarkw...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=93&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [CSV File Not found on impory](https://code.google.com/p/daily-money/issues/detail?id=93&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [94](https://code.google.com/p/daily-money/issues/detail?id=94&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=94&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=94&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=94&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=94&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [vsah...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=94&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [ubuntu](https://code.google.com/p/daily-money/issues/detail?id=94&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [95](https://code.google.com/p/daily-money/issues/detail?id=95&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=95&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=95&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=95&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=95&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [vsah...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=95&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [flash card](https://code.google.com/p/daily-money/issues/detail?id=95&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [97](https://code.google.com/p/daily-money/issues/detail?id=97&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=97&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=97&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=97&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=97&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [ksjd...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=97&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [Allow positive and negative amounts in all fields](https://code.google.com/p/daily-money/issues/detail?id=97&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [98](https://code.google.com/p/daily-money/issues/detail?id=98&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=98&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=98&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=98&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=98&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [qqww668](https://code.google.com/p/daily-money/issues/detail?id=98&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [ghhdfgdg](https://code.google.com/p/daily-money/issues/detail?id=98&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [100](https://code.google.com/p/daily-money/issues/detail?id=100&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=100&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=100&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=100&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=100&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [bigb...@comedyshoes.com](https://code.google.com/p/daily-money/issues/detail?id=100&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [DM on new phone not reading files from old phone](https://code.google.com/p/daily-money/issues/detail?id=100&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [101](https://code.google.com/p/daily-money/issues/detail?id=101&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=101&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=101&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=101&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=101&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [BlueRay...@gmail.com](https://code.google.com/p/daily-money/issues/detail?id=101&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [Inefficient CSV-Format](https://code.google.com/p/daily-money/issues/detail?id=101&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |
|  | [102](https://code.google.com/p/daily-money/issues/detail?id=102&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Defect](https://code.google.com/p/daily-money/issues/detail?id=102&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [New](https://code.google.com/p/daily-money/issues/detail?id=102&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [Medium](https://code.google.com/p/daily-money/issues/detail?id=102&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [----](https://code.google.com/p/daily-money/issues/detail?id=102&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) | [m...@adrianheuer.de](https://code.google.com/p/daily-money/issues/detail?id=102&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  | [decimal seperator mixed up](https://code.google.com/p/daily-money/issues/detail?id=102&sort=type&colspec=ID%20Type%20Status%20Priority%20Owner%20Reporter%20Summary) |  |

# Appendix B

:Monkey: seed=1418445526894 count=2000

:AllowPackage: com.bottleworks.dailymoney

:IncludeCategory: android.intent.category.LAUNCHER

:IncludeCategory: android.intent.category.MONKEY

// Event percentages:

// 0: 15.0%

// 1: 10.0%

// 2: 2.0%

// 3: 15.0%

// 4: -0.0%

// 5: 25.0%

// 6: 15.0%

// 7: 2.0%

// 8: 2.0%

// 9: 1.0%

// 10: 13.0%

:Switch: #Intent;action=android.intent.action.MAIN;category=android.intent.category.LAUNCHER;launchFlags=0x10200000;component=com.bottleworks.dailymoney/.ui.DesktopActivity;end

// Allowing start of Intent { act=android.intent.action.MAIN cat=[android.intent.category.LAUNCHER] cmp=com.bottleworks.dailymoney/.ui.DesktopActivity } in package com.bottleworks.dailymoney

// Rejecting start of Intent { act=android.intent.action.MAIN cat=[android.intent.category.LAUNCHER] cmp=com.android.contacts/.activities.PeopleActivity } in package com.android.contacts

:Sending Trackball (ACTION\_MOVE): 0:(-1.0,-2.0)

:Sending Trackball (ACTION\_MOVE): 0:(-5.0,-3.0)

:Sending Touch (ACTION\_DOWN): 0:(463.0,90.0)

:Sending Touch (ACTION\_UP): 0:(381.7618,37.176857)

:Sending Touch (ACTION\_DOWN): 0:(280.0,204.0)

:Sending Touch (ACTION\_UP): 0:(288.61084,203.45337)

:Sending Touch (ACTION\_DOWN): 0:(70.0,78.0)

:Sending Touch (ACTION\_UP): 0:(67.32282,70.535164)

:Sending Touch (ACTION\_DOWN): 0:(265.0,615.0)

:Sending Touch (ACTION\_UP): 0:(264.97675,608.65)

:Sending Touch (ACTION\_DOWN): 0:(182.0,626.0)

:Sending Touch (ACTION\_UP): 0:(99.82534,611.1556)

:Sending Touch (ACTION\_DOWN): 0:(443.0,510.0)

:Sending Touch (ACTION\_UP): 0:(466.03793,418.19583)

:Sending Touch (ACTION\_DOWN): 0:(362.0,232.0)

:Sending Touch (ACTION\_UP): 0:(380.6488,239.8727)

:Sending Touch (ACTION\_DOWN): 0:(317.0,435.0)

:Sending Touch (ACTION\_UP): 0:(345.45615,417.79422)

:Sending Touch (ACTION\_DOWN): 0:(117.0,494.0)

//[calendar\_time:2014-12-02 21:45:28.909 system\_uptime:1669373]

// Sending event #100

:Sending Touch (ACTION\_UP): 0:(111.23123,575.11084)

:Sending Touch (ACTION\_DOWN): 0:(313.0,423.0)

:Sending Touch (ACTION\_UP): 0:(364.6535,362.18494)

:Sending Touch (ACTION\_DOWN): 0:(365.0,575.0)

:Sending Touch (ACTION\_UP): 0:(354.37363,576.35345)

:Sending Trackball (ACTION\_MOVE): 0:(0.0,-2.0)

:Sending Touch (ACTION\_DOWN): 0:(297.0,219.0)

:Sending Touch (ACTION\_UP): 0:(298.79446,220.18173)

:Sending Touch (ACTION\_DOWN): 0:(337.0,725.0)

:Sending Touch (ACTION\_UP): 0:(417.47186,738.3519)

:Sending Touch (ACTION\_DOWN): 0:(329.0,515.0)

:Sending Touch (ACTION\_UP): 0:(321.9803,516.04846)

:Sending Touch (ACTION\_DOWN): 0:(165.0,704.0)

:Sending Touch (ACTION\_UP): 0:(176.88417,668.3171)

:Sending Trackball (ACTION\_MOVE): 0:(-1.0,3.0)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,3.0)

:Sending Trackball (ACTION\_MOVE): 0:(0.0,3.0)

:Sending Touch (ACTION\_DOWN): 0:(367.0,490.0)

:Sending Touch (ACTION\_UP): 0:(371.83167,475.08374)

//[calendar\_time:2014-12-02 21:45:29.975 system\_uptime:1670403]

// Sending event #200

//[calendar\_time:2014-12-02 21:45:29.976 system\_uptime:1670403]

// Sending event #200

:Sending Flip keyboardOpen=false

:Sending Touch (ACTION\_DOWN): 0:(105.0,350.0)

:Sending Touch (ACTION\_UP): 0:(92.03997,357.2381)

:Sending Touch (ACTION\_DOWN): 0:(209.0,590.0)

:Sending Touch (ACTION\_UP): 0:(217.81537,572.2877)

:Sending Touch (ACTION\_DOWN): 0:(99.0,672.0)

:Sending Touch (ACTION\_UP): 0:(94.917336,714.0468)

:Sending Trackball (ACTION\_MOVE): 0:(2.0,-3.0)

:Sending Touch (ACTION\_DOWN): 0:(72.0,385.0)

:Sending Touch (ACTION\_UP): 0:(57.2416,366.0823)

:Sending Touch (ACTION\_DOWN): 0:(74.0,495.0)

:Sending Touch (ACTION\_UP): 0:(74.77279,492.31302)

:Sending Touch (ACTION\_DOWN): 0:(259.0,6.0)

:Sending Touch (ACTION\_UP): 0:(251.08803,11.808493)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,1.0)

:Sending Touch (ACTION\_DOWN): 0:(293.0,47.0)

:Sending Touch (ACTION\_UP): 0:(301.893,48.523914)

:Sending Touch (ACTION\_DOWN): 0:(103.0,390.0)

:Sending Touch (ACTION\_UP): 0:(95.84497,396.46426)

:Sending Touch (ACTION\_DOWN): 0:(454.0,567.0)

:Sending Touch (ACTION\_UP): 0:(470.07602,571.4698)

:Sending Touch (ACTION\_DOWN): 0:(396.0,189.0)

:Sending Touch (ACTION\_UP): 0:(386.11853,181.07321)

:Sending Touch (ACTION\_DOWN): 0:(356.0,39.0)

:Sending Touch (ACTION\_UP): 0:(344.8956,39.102985)

:Sending Touch (ACTION\_DOWN): 0:(125.0,375.0)

:Sending Touch (ACTION\_UP): 0:(118.16081,387.96326)

// Rejecting start of Intent { act=android.intent.action.MAIN cat=[android.intent.category.HOME] cmp=com.android.launcher/com.android.launcher2.Launcher } in package com.android.launcher

:Sending Touch (ACTION\_DOWN): 0:(105.0,307.0)

:Sending Touch (ACTION\_UP): 0:(104.54541,300.0185)

:Sending Trackball (ACTION\_MOVE): 0:(2.0,3.0)

//[calendar\_time:2014-12-02 21:45:31.844 system\_uptime:1672272]

// Sending event #300

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,0.0)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,1.0)

// Injection Failed

:Sending Touch (ACTION\_DOWN): 0:(460.0,788.0)

:Sending Touch (ACTION\_UP): 0:(461.02948,785.33453)

:Sending Trackball (ACTION\_MOVE): 0:(-4.0,1.0)

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

:Sending Touch (ACTION\_DOWN): 0:(162.0,91.0)

:Sending Touch (ACTION\_UP): 0:(153.61588,84.497536)

:Sending Trackball (ACTION\_MOVE): 0:(1.0,1.0)

:Sending Flip keyboardOpen=true

:Sending Trackball (ACTION\_MOVE): 0:(4.0,1.0)

:Sending Touch (ACTION\_DOWN): 0:(273.0,319.0)

:Sending Touch (ACTION\_UP): 0:(271.15094,322.27466)

:Sending Trackball (ACTION\_MOVE): 0:(1.0,0.0)

//[calendar\_time:2014-12-02 21:45:34.495 system\_uptime:1674923]

// Sending event #400

//[calendar\_time:2014-12-02 21:45:34.495 system\_uptime:1674923]

// Sending event #400

:Sending Touch (ACTION\_DOWN): 0:(80.0,669.0)

:Sending Touch (ACTION\_UP): 0:(122.95845,720.75757)

:Sending Touch (ACTION\_DOWN): 0:(276.0,550.0)

:Sending Touch (ACTION\_UP): 0:(318.21124,530.8217)

:Sending Touch (ACTION\_DOWN): 0:(405.0,42.0)

:Sending Touch (ACTION\_UP): 0:(311.36002,24.82624)

:Sending Touch (ACTION\_DOWN): 0:(175.0,132.0)

:Sending Touch (ACTION\_UP): 0:(170.24075,117.997375)

:Sending Touch (ACTION\_DOWN): 0:(103.0,750.0)

:Sending Touch (ACTION\_UP): 0:(107.92351,761.94904)

:Sending Touch (ACTION\_DOWN): 0:(214.0,206.0)

:Sending Touch (ACTION\_UP): 0:(223.72313,194.48163)

:Sending Touch (ACTION\_DOWN): 0:(264.0,504.0)

:Sending Touch (ACTION\_UP): 0:(261.37515,500.38763)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-5.0)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-2.0)

:Sending Touch (ACTION\_DOWN): 0:(359.0,145.0)

:Sending Touch (ACTION\_UP): 0:(260.74445,207.90465)

:Sending Trackball (ACTION\_MOVE): 0:(2.0,-1.0)

//[calendar\_time:2014-12-02 21:45:36.591 system\_uptime:1677018]

// Sending event #500

:Sending Touch (ACTION\_DOWN): 0:(99.0,374.0)

:Sending Touch (ACTION\_UP): 0:(96.10515,400.16168)

:Sending Touch (ACTION\_DOWN): 0:(422.0,625.0)

:Sending Touch (ACTION\_UP): 0:(404.65683,620.741)

:Sending Trackball (ACTION\_MOVE): 0:(-4.0,2.0)

:Sending Touch (ACTION\_DOWN): 0:(147.0,397.0)

:Sending Touch (ACTION\_UP): 0:(131.36229,398.7929)

:Sending Touch (ACTION\_DOWN): 0:(72.0,770.0)

:Sending Touch (ACTION\_UP): 0:(74.439674,790.7182)

:Sending Trackball (ACTION\_MOVE): 0:(2.0,-5.0)

// activityResuming(com.bottleworks.dailymoney)

:Sending Trackball (ACTION\_MOVE): 0:(3.0,-2.0)

:Sending Trackball (ACTION\_MOVE): 0:(3.0,-1.0)

:Sending Touch (ACTION\_DOWN): 0:(86.0,28.0)

//[calendar\_time:2014-12-02 21:45:38.974 system\_uptime:1679402]

// Sending event #600

:Sending Touch (ACTION\_UP): 0:(136.75208,0.0)

:Sending Touch (ACTION\_DOWN): 0:(213.0,472.0)

:Sending Touch (ACTION\_UP): 0:(198.96213,500.86276)

:Sending Touch (ACTION\_DOWN): 0:(351.0,114.0)

:Sending Touch (ACTION\_UP): 0:(355.21762,127.25969)

:Sending Trackball (ACTION\_MOVE): 0:(1.0,-4.0)

:Sending Touch (ACTION\_DOWN): 0:(199.0,99.0)

:Sending Touch (ACTION\_UP): 0:(215.03592,97.908)

:Sending Touch (ACTION\_DOWN): 0:(220.0,782.0)

:Sending Touch (ACTION\_UP): 0:(225.25154,800.0)

:Sending Touch (ACTION\_DOWN): 0:(344.0,415.0)

:Sending Touch (ACTION\_UP): 0:(340.35696,425.68976)

:Switch: #Intent;action=android.intent.action.MAIN;category=android.intent.category.LAUNCHER;launchFlags=0x10200000;component=com.bottleworks.dailymoney/.ui.DesktopActivity;end

// Allowing start of Intent { act=android.intent.action.MAIN cat=[android.intent.category.LAUNCHER] cmp=com.bottleworks.dailymoney/.ui.DesktopActivity } in package com.bottleworks.dailymoney

:Sending Touch (ACTION\_DOWN): 0:(439.0,195.0)

:Sending Touch (ACTION\_UP): 0:(438.39148,197.21771)

:Sending Touch (ACTION\_DOWN): 0:(71.0,69.0)

:Sending Touch (ACTION\_UP): 0:(67.16535,92.30434)

:Sending Trackball (ACTION\_MOVE): 0:(-4.0,-2.0)

:Sending Trackball (ACTION\_MOVE): 0:(3.0,4.0)

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

:Sending Touch (ACTION\_DOWN): 0:(254.0,192.0)

:Sending Touch (ACTION\_UP): 0:(338.339,178.63887)

:Sending Flip keyboardOpen=false

:Sending Trackball (ACTION\_MOVE): 0:(1.0,-3.0)

//[calendar\_time:2014-12-02 21:45:39.941 system\_uptime:1680369]

// Sending event #700

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

:Sending Touch (ACTION\_DOWN): 0:(1.0,577.0)

:Sending Touch (ACTION\_UP): 0:(11.040299,570.62854)

:Sending Touch (ACTION\_DOWN): 0:(417.0,126.0)

:Sending Touch (ACTION\_UP): 0:(413.37692,150.8658)

// Rejecting start of Intent { act=android.intent.action.MAIN cat=[android.intent.category.LAUNCHER] cmp=com.android.music/.MusicBrowserActivity } in package com.android.music

:Sending Trackball (ACTION\_MOVE): 0:(1.0,1.0)

:Sending Touch (ACTION\_DOWN): 0:(237.0,690.0)

:Sending Touch (ACTION\_UP): 0:(149.2402,613.8813)

:Sending Trackball (ACTION\_MOVE): 0:(-5.0,-1.0)

:Sending Touch (ACTION\_DOWN): 0:(427.0,482.0)

:Sending Touch (ACTION\_UP): 0:(441.44144,501.50232)

:Sending Trackball (ACTION\_MOVE): 0:(0.0,-5.0)

:Sending Trackball (ACTION\_MOVE): 0:(2.0,3.0)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-4.0)

:Sending Touch (ACTION\_DOWN): 0:(411.0,455.0)

:Sending Touch (ACTION\_UP): 0:(410.697,447.49582)

//[calendar\_time:2014-12-02 21:45:41.418 system\_uptime:1681846]

// Sending event #800

:Sending Touch (ACTION\_DOWN): 0:(218.0,170.0)

:Sending Touch (ACTION\_UP): 0:(224.27682,180.6093)

// Allowing start of Intent { cmp=com.bottleworks.dailymoney/.calculator2.Calculator } in package com.bottleworks.dailymoney

:Sending Touch (ACTION\_DOWN): 0:(338.0,283.0)

:Sending Touch (ACTION\_UP): 0:(397.97327,331.67902)

:Sending Trackball (ACTION\_MOVE): 0:(-1.0,1.0)

:Sending Touch (ACTION\_DOWN): 0:(412.0,138.0)

:Sending Touch (ACTION\_UP): 0:(380.30093,88.08591)

// activityResuming(com.bottleworks.dailymoney)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,-1.0)

:Sending Touch (ACTION\_DOWN): 0:(344.0,77.0)

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

:Sending Touch (ACTION\_UP): 0:(306.70425,152.43494)

// Injection Failed

:Sending Touch (ACTION\_DOWN): 0:(366.0,84.0)

// Injection Failed

:Sending Touch (ACTION\_UP): 0:(367.31506,74.11605)

// Injection Failed

:Sending Trackball (ACTION\_MOVE): 0:(0.0,1.0)

:Sending Touch (ACTION\_DOWN): 0:(33.0,93.0)

:Sending Touch (ACTION\_UP): 0:(45.124794,92.59637)

:Sending Touch (ACTION\_DOWN): 0:(426.0,54.0)

:Sending Touch (ACTION\_UP): 0:(307.76572,29.304907)

:Sending Touch (ACTION\_DOWN): 0:(331.0,558.0)

:Sending Touch (ACTION\_UP): 0:(314.25043,553.80444)

:Sending Touch (ACTION\_DOWN): 0:(145.0,108.0)

//[calendar\_time:2014-12-02 21:45:44.371 system\_uptime:1684799]

// Sending event #900

:Sending Touch (ACTION\_UP): 0:(144.86528,104.76469)

:Sending Trackball (ACTION\_MOVE): 0:(0.0,3.0)

:Sending Touch (ACTION\_DOWN): 0:(442.0,631.0)

:Sending Touch (ACTION\_UP): 0:(448.16446,625.93756)

:Sending Touch (ACTION\_DOWN): 0:(415.0,39.0)

:Sending Touch (ACTION\_UP): 0:(423.39053,20.44813)

// Rejecting start of Intent { act=android.intent.action.CALL\_BUTTON cmp=com.android.dialer/.DialtactsActivity } in package com.android.dialer

:Sending Touch (ACTION\_DOWN): 0:(478.0,589.0)

:Sending Touch (ACTION\_UP): 0:(480.0,586.75964)

:Sending Trackball (ACTION\_MOVE): 0:(0.0,1.0)

:Sending Touch (ACTION\_DOWN): 0:(129.0,326.0)

:Sending Touch (ACTION\_UP): 0:(200.25734,212.7172)

:Sending Touch (ACTION\_DOWN): 0:(242.0,725.0)

:Sending Touch (ACTION\_UP): 0:(390.73508,800.0)

:Sending Touch (ACTION\_DOWN): 0:(142.0,374.0)

:Sending Touch (ACTION\_UP): 0:(156.06212,378.08868)

:Sending Touch (ACTION\_DOWN): 0:(272.0,673.0)

:Sending Touch (ACTION\_UP): 0:(256.01367,666.3569)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,4.0)

:Sending Touch (ACTION\_DOWN): 0:(380.0,475.0)

:Sending Touch (ACTION\_UP): 0:(346.90875,502.91205)

:Sending Touch (ACTION\_DOWN): 0:(240.0,449.0)

:Sending Touch (ACTION\_UP): 0:(248.51572,463.85944)

:Sending Trackball (ACTION\_MOVE): 0:(1.0,4.0)

//[calendar\_time:2014-12-02 21:45:45.824 system\_uptime:1686252]

// Sending event #1000

:Sending Touch (ACTION\_DOWN): 0:(232.0,611.0)

:Sending Touch (ACTION\_UP): 0:(204.35352,613.7363)

:Sending Touch (ACTION\_DOWN): 0:(258.0,425.0)

:Sending Touch (ACTION\_UP): 0:(259.19202,420.11163)

:Sending Trackball (ACTION\_MOVE): 0:(0.0,2.0)

:Sending Touch (ACTION\_DOWN): 0:(171.0,9.0)

:Sending Touch (ACTION\_UP): 0:(174.28452,23.084959)

:Switch: #Intent;action=android.intent.action.MAIN;category=android.intent.category.LAUNCHER;launchFlags=0x10200000;component=com.bottleworks.dailymoney/.ui.DesktopActivity;end

// Allowing start of Intent { act=android.intent.action.MAIN cat=[android.intent.category.LAUNCHER] cmp=com.bottleworks.dailymoney/.ui.DesktopActivity } in package com.bottleworks.dailymoney

:Sending Touch (ACTION\_DOWN): 0:(466.0,465.0)

:Sending Touch (ACTION\_UP): 0:(478.558,464.43988)

:Sending Touch (ACTION\_DOWN): 0:(175.0,395.0)

:Sending Touch (ACTION\_UP): 0:(161.70067,351.01028)

:Sending Trackball (ACTION\_MOVE): 0:(3.0,3.0)

:Sending Touch (ACTION\_DOWN): 0:(47.0,96.0)

:Sending Touch (ACTION\_UP): 0:(46.074097,92.19706)

:Sending Flip keyboardOpen=true

:Sending Touch (ACTION\_DOWN): 0:(56.0,27.0)

:Sending Touch (ACTION\_UP): 0:(46.621716,34.481155)

:Sending Touch (ACTION\_DOWN): 0:(99.0,587.0)

:Sending Touch (ACTION\_UP): 0:(223.24205,696.22754)

:Sending Touch (ACTION\_DOWN): 0:(366.0,385.0)

:Sending Touch (ACTION\_UP): 0:(367.5213,385.22766)

//[calendar\_time:2014-12-02 21:45:47.335 system\_uptime:1687763]

// Sending event #1100

//[calendar\_time:2014-12-02 21:45:47.335 system\_uptime:1687763]

// Sending event #1100

:Sending Trackball (ACTION\_MOVE): 0:(3.0,1.0)

:Sending Touch (ACTION\_DOWN): 0:(55.0,409.0)

:Sending Touch (ACTION\_UP): 0:(54.31977,404.0345)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-4.0)

:Sending Touch (ACTION\_DOWN): 0:(171.0,723.0)

:Sending Touch (ACTION\_UP): 0:(157.38493,717.38654)

:Sending Trackball (ACTION\_MOVE): 0:(-1.0,-5.0)

:Sending Trackball (ACTION\_MOVE): 0:(-5.0,4.0)

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

:Sending Touch (ACTION\_DOWN): 0:(167.0,535.0)

:Sending Touch (ACTION\_UP): 0:(188.85153,531.66864)

:Sending Touch (ACTION\_DOWN): 0:(128.0,266.0)

:Sending Touch (ACTION\_UP): 0:(130.19118,276.4342)

:Sending Trackball (ACTION\_MOVE): 0:(2.0,-1.0)

:Sending Touch (ACTION\_DOWN): 0:(283.0,441.0)

:Sending Touch (ACTION\_UP): 0:(280.03326,420.43427)

:Sending Touch (ACTION\_DOWN): 0:(192.0,776.0)

:Sending Touch (ACTION\_UP): 0:(199.30765,779.95294)

:Sending Touch (ACTION\_DOWN): 0:(16.0,134.0)

:Sending Touch (ACTION\_UP): 0:(19.809105,120.24167)

:Sending Touch (ACTION\_DOWN): 0:(444.0,225.0)

:Sending Touch (ACTION\_UP): 0:(455.70676,208.3902)

:Sending Touch (ACTION\_DOWN): 0:(314.0,289.0)

:Sending Touch (ACTION\_UP): 0:(319.0291,292.17932)

:Sending Trackball (ACTION\_MOVE): 0:(2.0,-2.0)

//[calendar\_time:2014-12-02 21:45:48.639 system\_uptime:1689067]

// Sending event #1200

:Sending Trackball (ACTION\_MOVE): 0:(2.0,-4.0)

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

:Sending Touch (ACTION\_DOWN): 0:(95.0,777.0)

:Sending Touch (ACTION\_UP): 0:(95.23391,764.3622)

:Sending Touch (ACTION\_DOWN): 0:(222.0,376.0)

:Sending Touch (ACTION\_UP): 0:(203.74603,382.33273)

:Sending Trackball (ACTION\_MOVE): 0:(-5.0,-3.0)

:Sending Touch (ACTION\_DOWN): 0:(285.0,159.0)

:Sending Touch (ACTION\_UP): 0:(272.58087,148.95374)

:Sending Touch (ACTION\_DOWN): 0:(159.0,340.0)

:Sending Touch (ACTION\_UP): 0:(159.81581,354.0835)

:Sending Touch (ACTION\_DOWN): 0:(437.0,200.0)

:Sending Touch (ACTION\_UP): 0:(439.24136,199.31949)

:Sending Touch (ACTION\_DOWN): 0:(12.0,173.0)

:Sending Touch (ACTION\_UP): 0:(13.825049,173.96436)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-2.0)

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

:Sending Touch (ACTION\_DOWN): 0:(25.0,387.0)

:Sending Touch (ACTION\_UP): 0:(11.934335,389.2074)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,4.0)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-4.0)

:Sending Touch (ACTION\_DOWN): 0:(229.0,754.0)

:Sending Touch (ACTION\_UP): 0:(240.23853,737.63763)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-1.0)

//[calendar\_time:2014-12-02 21:45:50.372 system\_uptime:1690800]

// Sending event #1300

:Sending Trackball (ACTION\_MOVE): 0:(4.0,1.0)

:Sending Flip keyboardOpen=false

:Sending Trackball (ACTION\_MOVE): 0:(-1.0,-5.0)

:Sending Touch (ACTION\_DOWN): 0:(362.0,174.0)

:Sending Touch (ACTION\_UP): 0:(375.8738,227.92667)

:Sending Touch (ACTION\_DOWN): 0:(373.0,678.0)

:Sending Touch (ACTION\_UP): 0:(368.39386,683.9193)

:Sending Trackball (ACTION\_MOVE): 0:(-4.0,-2.0)

:Sending Touch (ACTION\_DOWN): 0:(456.0,50.0)

:Sending Touch (ACTION\_UP): 0:(453.79416,59.85686)

:Sending Trackball (ACTION\_MOVE): 0:(-2.0,-5.0)

:Sending Touch (ACTION\_DOWN): 0:(326.0,768.0)

:Sending Touch (ACTION\_UP): 0:(311.15176,784.05756)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,2.0)

:Sending Touch (ACTION\_DOWN): 0:(160.0,465.0)

:Sending Touch (ACTION\_UP): 0:(172.64836,458.32196)

//[calendar\_time:2014-12-02 21:45:51.720 system\_uptime:1692147]

// Sending event #1400

:Sending Touch (ACTION\_DOWN): 0:(78.0,496.0)

:Sending Touch (ACTION\_UP): 0:(83.91027,498.52966)

:Sending Trackball (ACTION\_MOVE): 0:(-2.0,-3.0)

:Sending Trackball (ACTION\_MOVE): 0:(3.0,1.0)

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

:Sending Trackball (ACTION\_MOVE): 0:(-5.0,-1.0)

:Sending Trackball (ACTION\_MOVE): 0:(-5.0,4.0)

:Sending Trackball (ACTION\_MOVE): 0:(-2.0,-4.0)

:Sending Touch (ACTION\_DOWN): 0:(63.0,791.0)

:Sending Touch (ACTION\_UP): 0:(69.420975,790.7702)

:Sending Touch (ACTION\_DOWN): 0:(262.0,592.0)

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

:Sending Touch (ACTION\_UP): 0:(259.40247,721.65076)

// Injection Failed

:Sending Touch (ACTION\_DOWN): 0:(32.0,433.0)

:Sending Touch (ACTION\_UP): 0:(21.930546,430.3656)

:Sending Trackball (ACTION\_MOVE): 0:(2.0,-5.0)

//[calendar\_time:2014-12-02 21:45:52.531 system\_uptime:1692958]

// Sending event #1500

:Sending Touch (ACTION\_DOWN): 0:(307.0,427.0)

:Sending Touch (ACTION\_UP): 0:(311.7175,438.86035)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,4.0)

:Sending Touch (ACTION\_DOWN): 0:(209.0,635.0)

:Sending Touch (ACTION\_UP): 0:(217.22083,630.9688)

:Sending Touch (ACTION\_DOWN): 0:(398.0,594.0)

:Sending Touch (ACTION\_UP): 0:(415.92856,594.0632)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-3.0)

:Sending Trackball (ACTION\_MOVE): 0:(-2.0,-1.0)

:Sending Touch (ACTION\_DOWN): 0:(477.0,317.0)

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

:Sending Touch (ACTION\_UP): 0:(480.0,354.63788)

// Injection Failed

:Sending Touch (ACTION\_DOWN): 0:(16.0,422.0)

:Sending Touch (ACTION\_UP): 0:(10.37995,413.9453)

:Sending Touch (ACTION\_DOWN): 0:(293.0,709.0)

:Sending Touch (ACTION\_UP): 0:(293.70837,708.6146)

// activityResuming(com.bottleworks.dailymoney)

:Sending Touch (ACTION\_DOWN): 0:(29.0,126.0)

:Sending Touch (ACTION\_UP): 0:(43.64413,115.11917)

:Sending Touch (ACTION\_DOWN): 0:(28.0,0.0)

:Sending Touch (ACTION\_UP): 0:(8.516743,0.0)

:Sending Trackball (ACTION\_MOVE): 0:(-5.0,2.0)

:Sending Trackball (ACTION\_MOVE): 0:(3.0,4.0)

//[calendar\_time:2014-12-02 21:45:54.224 system\_uptime:1694652]

// Sending event #1600

:Sending Trackball (ACTION\_MOVE): 0:(0.0,0.0)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-4.0)

// Rejecting start of Intent { act=com.android.systemui.recents.SHOW\_RECENTS cmp=com.android.systemui/.recents.RecentsActivity } in package com.android.systemui

// Injection Failed

:Sending Trackball (ACTION\_MOVE): 0:(4.0,3.0)

:Sending Touch (ACTION\_DOWN): 0:(206.0,620.0)

:Sending Touch (ACTION\_UP): 0:(252.82248,607.3079)

:Sending Trackball (ACTION\_MOVE): 0:(-4.0,-3.0)

:Sending Touch (ACTION\_DOWN): 0:(96.0,103.0)

:Sending Touch (ACTION\_UP): 0:(60.33735,87.1775)

:Sending Touch (ACTION\_DOWN): 0:(84.0,438.0)

:Sending Touch (ACTION\_UP): 0:(154.16078,393.4754)

:Sending Touch (ACTION\_DOWN): 0:(155.0,209.0)

:Sending Touch (ACTION\_UP): 0:(160.029,214.28029)

:Sending Trackball (ACTION\_MOVE): 0:(4.0,0.0)

:Sending Trackball (ACTION\_MOVE): 0:(-3.0,-1.0)

//[calendar\_time:2014-12-02 21:45:56.070 system\_uptime:1696498]

// Sending event #1700

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

:Sending Touch (ACTION\_DOWN): 0:(280.0,665.0)

:Sending Touch (ACTION\_UP): 0:(282.44626,669.78955)

:Sending Touch (ACTION\_DOWN): 0:(261.0,448.0)

:Sending Touch (ACTION\_UP): 0:(260.18585,454.3629)

:Sending Touch (ACTION\_DOWN): 0:(240.0,50.0)

:Sending Touch (ACTION\_UP): 0:(232.77727,54.296215)

:Sending Flip keyboardOpen=true

:Sending Touch (ACTION\_DOWN): 0:(248.0,721.0)

:Sending Touch (ACTION\_UP): 0:(244.36902,726.9534)

// activityResuming(com.bottleworks.dailymoney)

:Sending Touch (ACTION\_DOWN): 0:(196.0,428.0)

// Injection Failed

:Sending Touch (ACTION\_UP): 0:(207.69485,432.09152)

// Injection Failed

:Sending Touch (ACTION\_DOWN): 0:(200.0,643.0)

// Injection Failed

:Sending Touch (ACTION\_UP): 0:(200.4051,653.7732)

// Injection Failed

:Sending Touch (ACTION\_DOWN): 0:(54.0,775.0)

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

// Injection Failed

:Sending Touch (ACTION\_UP): 0:(5.46968,793.9879)

// Injection Failed

:Sending Flip keyboardOpen=false

:Sending Touch (ACTION\_DOWN): 0:(352.0,81.0)

:Sending Touch (ACTION\_UP): 0:(350.5348,94.46428)

:Sending Touch (ACTION\_DOWN): 0:(146.0,743.0)

:Sending Touch (ACTION\_UP): 0:(150.27815,743.18396)

:Sending Touch (ACTION\_DOWN): 0:(433.0,277.0)

:Sending Touch (ACTION\_UP): 0:(430.22137,276.96643)

// Rejecting start of Intent { act=android.intent.action.CALL\_BUTTON cmp=com.android.dialer/.DialtactsActivity } in package com.android.dialer

:Sending Touch (ACTION\_DOWN): 0:(454.0,469.0)

:Sending Touch (ACTION\_UP): 0:(419.6628,433.3157)

:Sending Touch (ACTION\_DOWN): 0:(212.0,373.0)

:Sending Touch (ACTION\_UP): 0:(194.60449,369.50906)

:Sending Touch (ACTION\_DOWN): 0:(3.0,148.0)

:Sending Touch (ACTION\_UP): 0:(2.5601842,164.07745)

:Sending Touch (ACTION\_DOWN): 0:(91.0,39.0)

:Sending Touch (ACTION\_UP): 0:(58.63062,38.746086)

:Sending Touch (ACTION\_DOWN): 0:(69.0,295.0)

:Sending Touch (ACTION\_UP): 0:(87.48613,312.0077)

:Sending Touch (ACTION\_DOWN): 0:(433.0,258.0)

:Sending Touch (ACTION\_UP): 0:(438.33493,260.00037)

//[calendar\_time:2014-12-02 21:45:58.599 system\_uptime:1699027]

// Sending event #1800

//[calendar\_time:2014-12-02 21:45:58.599 system\_uptime:1699027]

// Sending event #1800

:Sending Trackball (ACTION\_MOVE): 0:(0.0,-3.0)

:Sending Trackball (ACTION\_UP): 0:(0.0,0.0)

// activityResuming(com.bottleworks.dailymoney)

:Sending Flip keyboardOpen=true

:Switch: #Intent;action=android.intent.action.MAIN;category=android.intent.category.LAUNCHER;launchFlags=0x10200000;component=com.bottleworks.dailymoney/.ui.DesktopActivity;end

// Allowing start of Intent { act=android.intent.action.MAIN cat=[android.intent.category.LAUNCHER] cmp=com.bottleworks.dailymoney/.ui.DesktopActivity } in package com.bottleworks.dailymoney

:Sending Touch (ACTION\_DOWN): 0:(71.0,316.0)

:Sending Touch (ACTION\_UP): 0:(71.12037,321.49326)

// CRASH: com.bottleworks.dailymoney (pid 1725)

// Short Msg: java.lang.IllegalStateException

// Long Msg: java.lang.IllegalStateException: The content of the adapter has changed but ListView did not receive a notification. Make sure the content of your adapter is not modified from a background thread, but only from the UI thread. Make sure your adapter calls notifyDataSetChanged() when its content changes. [in ListView(2131361917, class android.widget.ListView) with Adapter(class android.widget.SimpleAdapter)]

// Build Label: generic\_x86/sdk\_phone\_x86/generic\_x86:5.0/LRX09D/1504858:eng/test-keys

// Build Changelist: 1504858

// Build Time: 1412902691000

// java.lang.IllegalStateException: The content of the adapter has changed but ListView did not receive a notification. Make sure the content of your adapter is not modified from a background thread, but only from the UI thread. Make sure your adapter calls notifyDataSetChanged() when its content changes. [in ListView(2131361917, class android.widget.ListView) with Adapter(class android.widget.SimpleAdapter)]

// at android.widget.ListView.layoutChildren(ListView.java:1562)

// at android.widget.AbsListView.onTouchModeChanged(AbsListView.java:3545)

// at android.view.ViewTreeObserver.dispatchOnTouchModeChanged(ViewTreeObserver.java:879)

// at android.view.ViewRootImpl.ensureTouchModeLocally(ViewRootImpl.java:3340)

// at android.view.ViewRootImpl.ensureTouchMode(ViewRootImpl.java:3324)

// at android.view.ViewRootImpl$EarlyPostImeInputStage.processPointerEvent(ViewRootImpl.java:3823)

// at android.view.ViewRootImpl$EarlyPostImeInputStage.onProcess(ViewRootImpl.java:3791)

// at android.view.ViewRootImpl$InputStage.deliver(ViewRootImpl.java:3449)

// at android.view.ViewRootImpl.deliverInputEvent(ViewRootImpl.java:5701)

// at android.view.ViewRootImpl.doProcessInputEvents(ViewRootImpl.java:5675)

// at android.view.ViewRootImpl.enqueueInputEvent(ViewRootImpl.java:5646)

// at android.view.ViewRootImpl$WindowInputEventReceiver.onInputEvent(ViewRootImpl.java:5791)

// at android.view.InputEventReceiver.dispatchInputEvent(InputEventReceiver.java:185)

// at android.os.MessageQueue.nativePollOnce(Native Method)

// at android.os.MessageQueue.next(MessageQueue.java:143)

// at android.os.Looper.loop(Looper.java:122)

// at android.app.ActivityThread.main(ActivityThread.java:5221)

// at java.lang.reflect.Method.invoke(Native Method)

// at java.lang.reflect.Method.invoke(Method.java:372)

// at com.android.internal.os.ZygoteInit$MethodAndArgsCaller.run(ZygoteInit.java:899)

// at com.android.internal.os.ZygoteInit.main(ZygoteInit.java:694)

//

\*\* Monkey aborted due to error.

Events injected: 1824

:Sending rotation degree=0, persist=false

:Dropped: keys=2 pointers=40 trackballs=0 flips=0 rotations=0

## Network stats: elapsed time=31884ms (0ms mobile, 0ms wifi, 31884ms not connected)

\*\* System appears to have crashed at event 1824 of 2000 using seed 1418445526894