SortIt for iPhone & iPad

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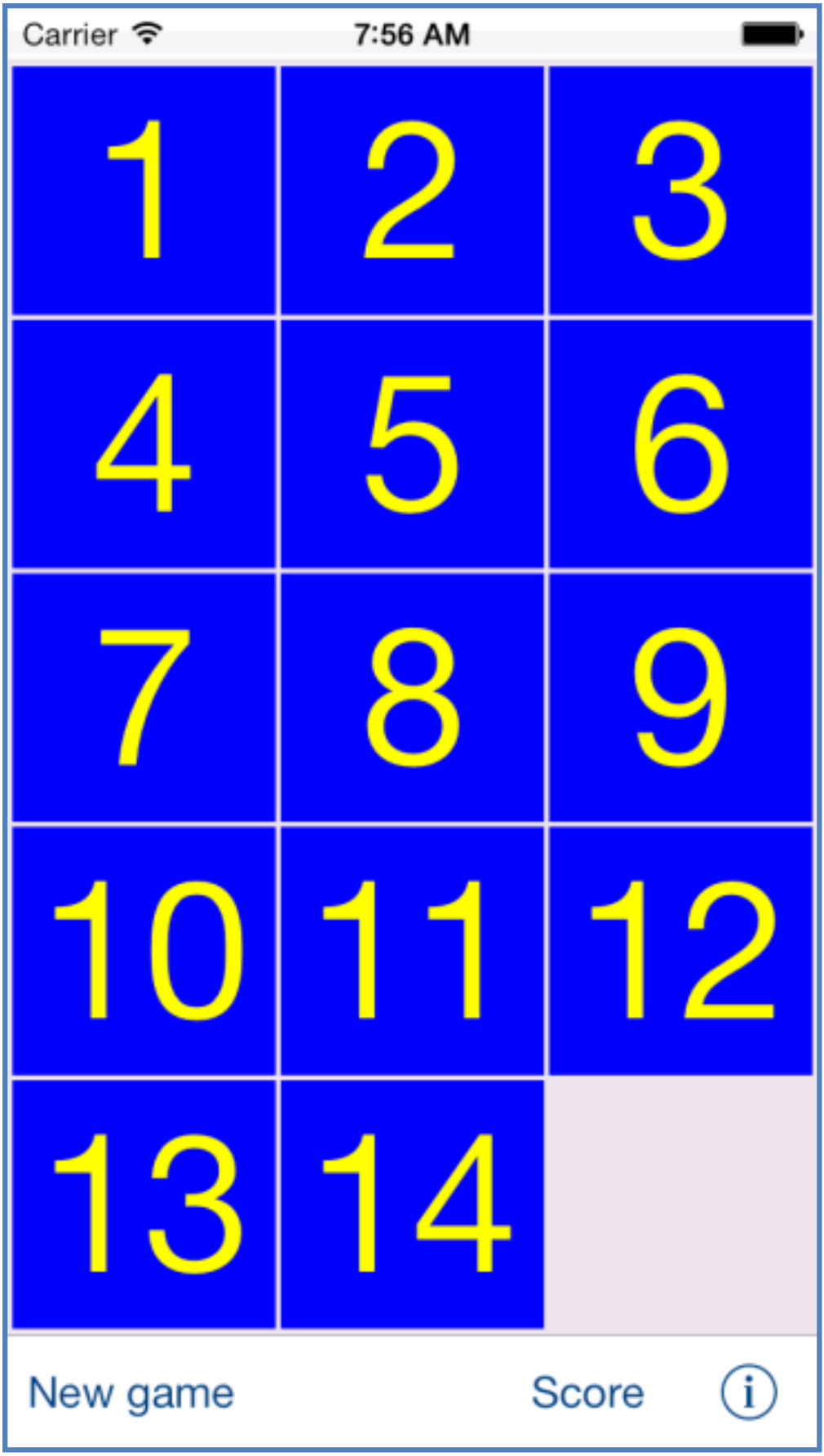
1. Introduction

SortIt is digital version of the classic combinatorial game 15-Puzzle, invented 1874.

Game is also called Gem Puzzle, Boss Puzzle, Game of Fifteen, Mystic Square, 16-puzzle.

The famous chess player Bobby Fischer “was an expert at solving the 15-Puzzle. He had been timed to be able to solve it within 25 seconds” [WikipediA].


Carrier
7:56 AM
1
2
3
4
5
6
7
8
9
10
11
12
13
14
New game
Score

Classic version of game was extended from size “4 x 4” to everything between “2 x 2” and:

- “5 x 7” on iPhone 4.
- “5 x 8” on iPhone 5, iPhone 5s, iPhone 5c,
- “9 x 11” on iPad, iPad mini.

The goal of game is to sort the buttons from the upper left to lower right corner. At the end of the game the bottom right corner should be empty and all buttons should be ordered in numerically: 1, 2, 3, ..., left to right, top to bottom.

Game result can be saved in score database.

You can customize the app functionality by using "Settings-function". It is possible to adjust almost everything:

- Game dimension.
- Colors.
- Shape and size of buttons.
- Way of counting of score.
- Sound.

App "Help-function" available in the app or on WWW contains detailed description of all functions and options.

All app activities and events are recorded in the system log. Statistics about the app usage are accumulated.

In the app has been implemented total saving/restoration of state – it

means that app might be interrupted at any time (by phone call, pressing one of device buttons, screen lock) and your data will not be lost. When app is activated next time all not saved data will be restored.

App is optimized for iOS 7.

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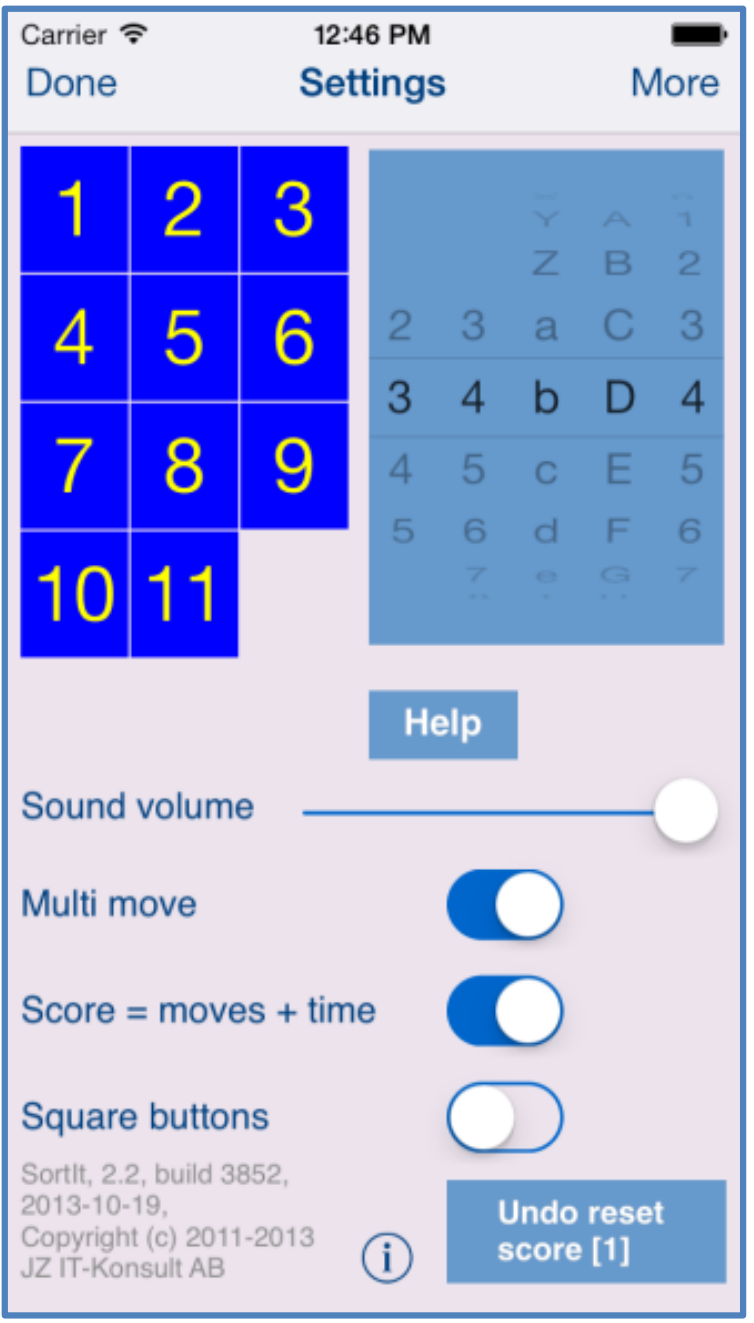
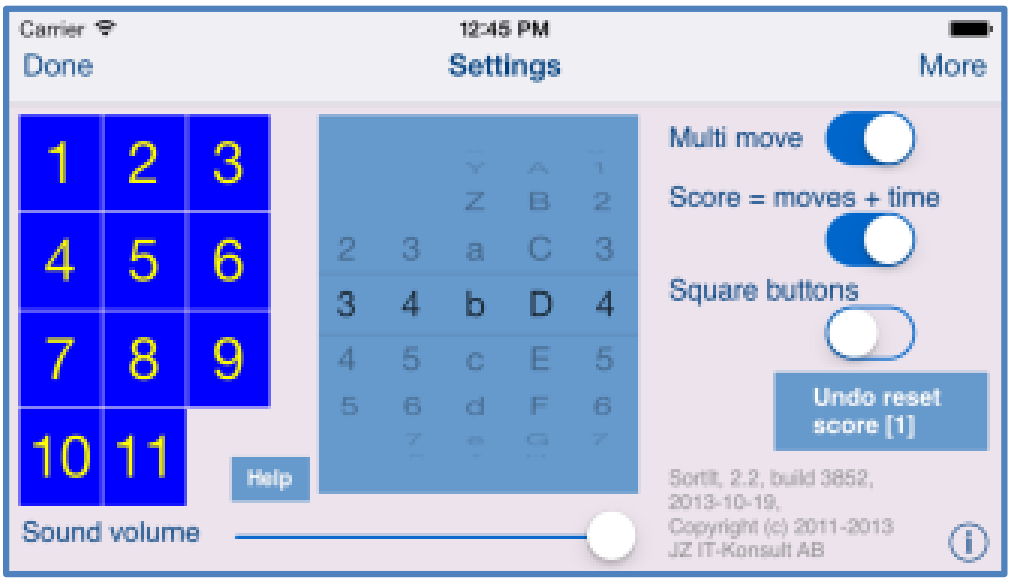
2. View orientation

All app views works in portrait and landscape orientation:



Portrait orientation

or



Landscape orientation

Just select orientation, which is most convenient for you. View orientation can be change at any time.

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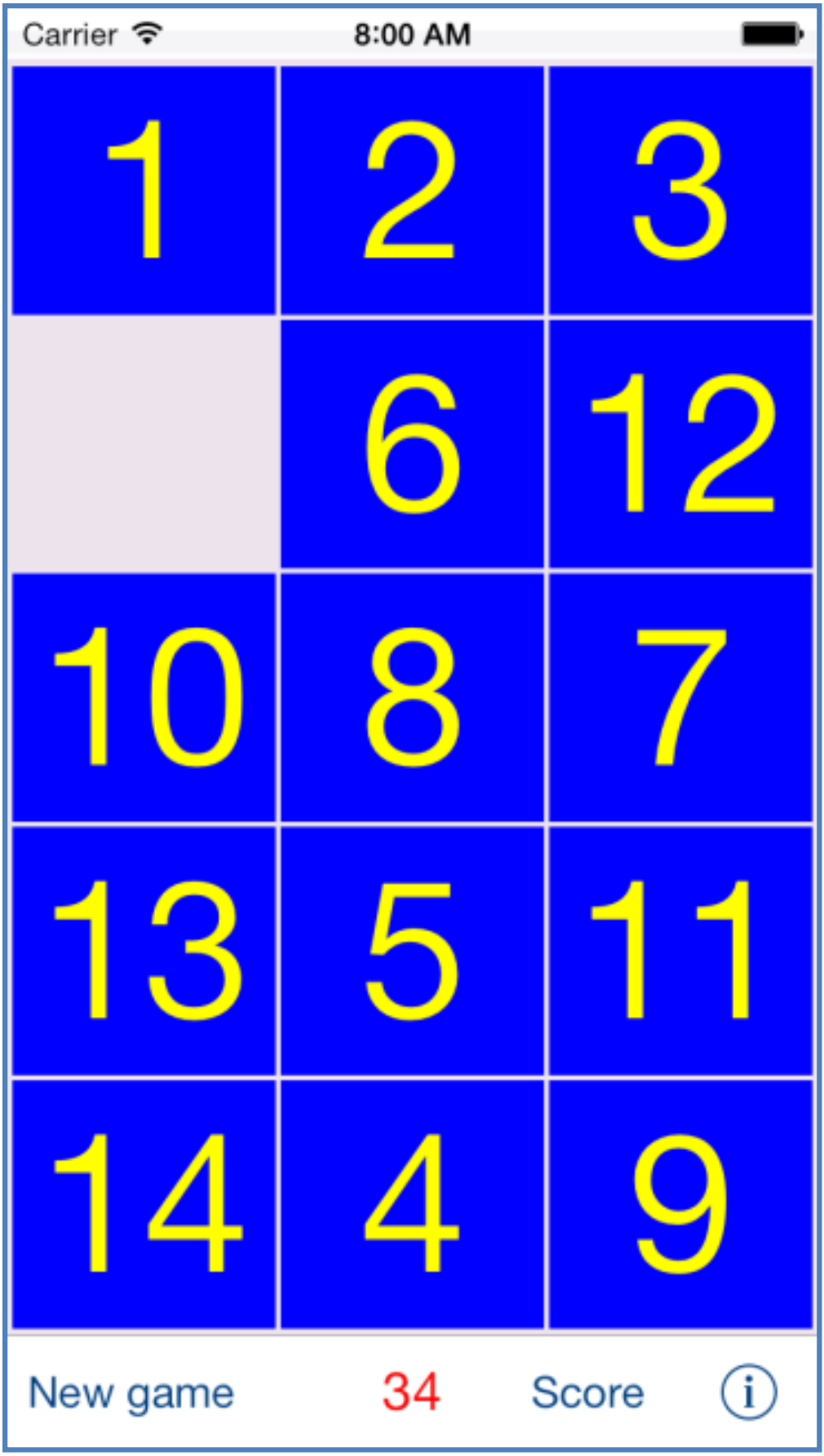
3. Main view

It is view you will usually see when you start the app. When app was terminated in another view, next time you start app you will be directed to that view.

View contains:

- Game desktop with button to sort.
- Game score.
- Controls to start new game and allow access to Settings view and Score view.


Carrier
8:00 AM
1
2
3
6
12
10
8
7
13
5
11
14
4
9
New game
34
Score



Button used to start new game



Game score, calculated as sum of:

- Number of times buttons were moved. Tapping on button without move do not counts. When “Multi move” is activated – moving of many buttons in one row column counts as one move.
- Time in seconds from first game move divided by “Seconds per score point”. For example: when “1 second” is selected extra score point will be added for every game second. When

“10 seconds” is chosen you will get extra score point every ten seconds.



Button used to open Score view.

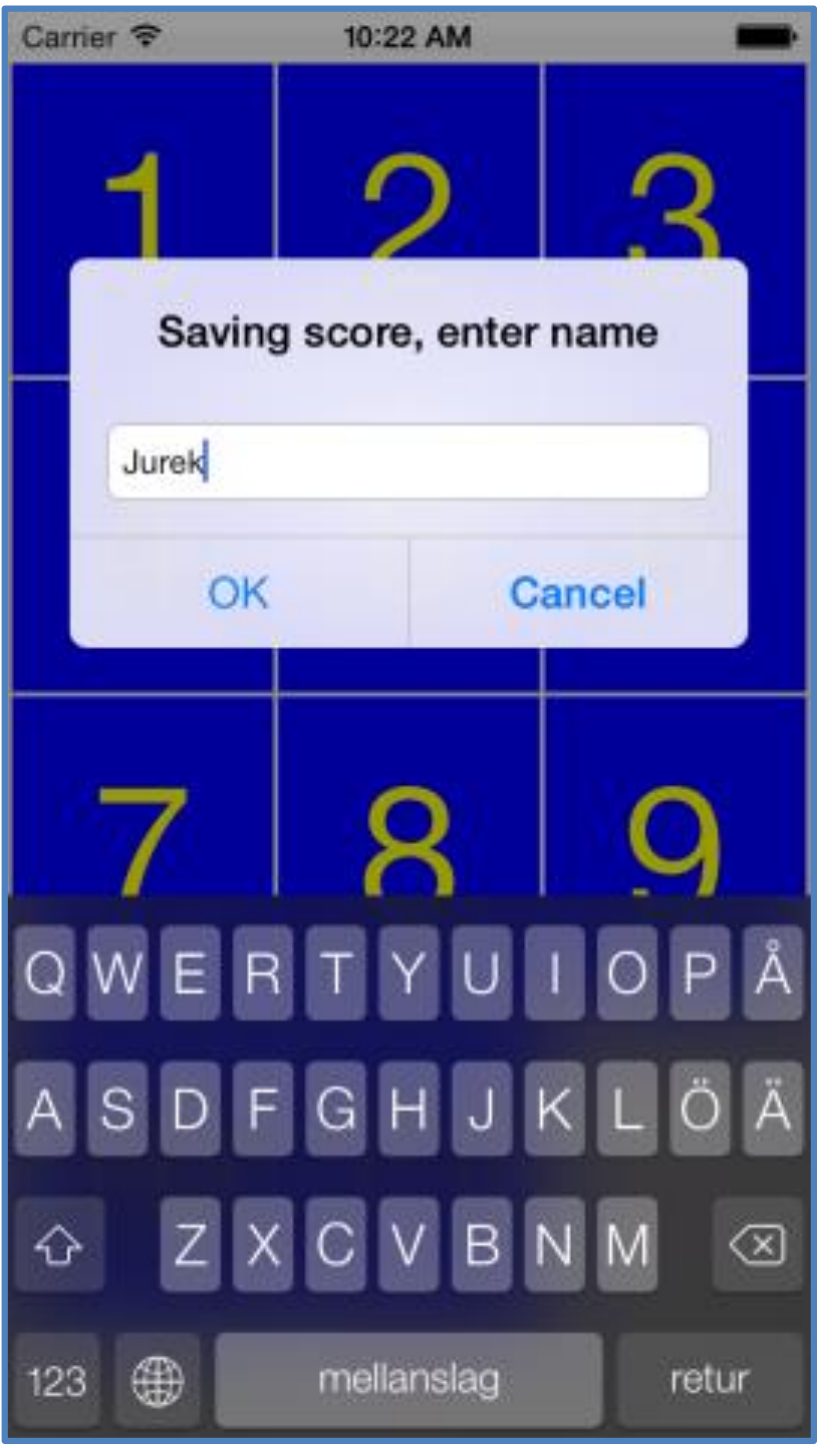


Button used to open Settings view.

When game is terminated - the following will be shown:


Carrier
10:21 AM
1
2
3
Congratulation!
All buttons are in sequence!!!
Do You want to start a new game?
Yes
No
10
11
New game
73
Score

When you answer “Yes” the new game will be started directly after that.
Next you will get opportunity to save score in score-database:



When new game has not been started and you are tapping on any game-button you will see:



When you tap on “New game” button and game is not terminated you will see warning/question:



When you change orientation of your device after starting game and game has different number of buttons on height and width you will see warning/question:



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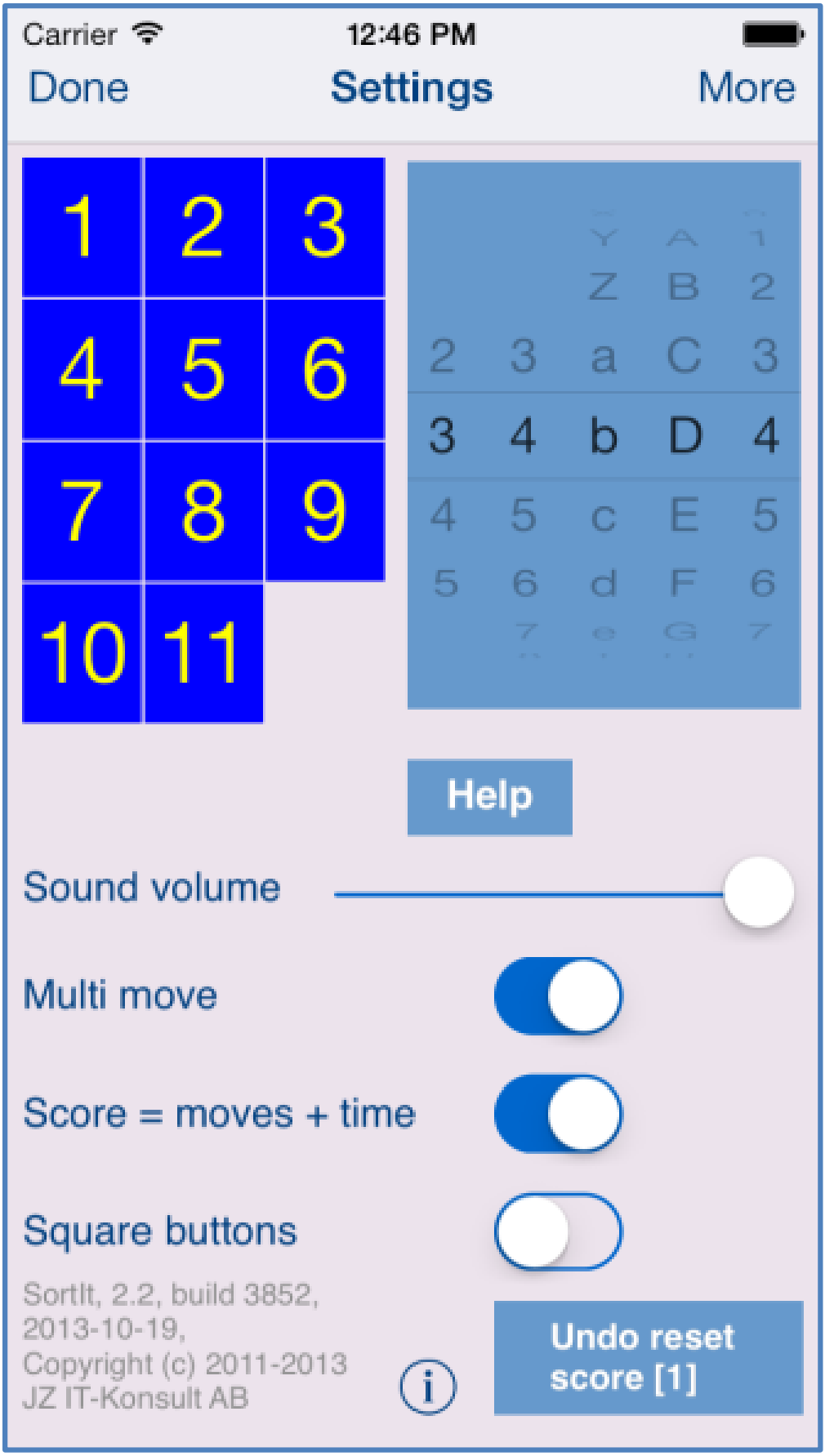
4. Settings view

This view allows you to configure system parameters and settings. From this view you have also access to Help view and Statistics view:


Carrier
12:46 PM
Done
Settings
More
1 2 3
4 5 6
7 8 9
10 11
Help
Sound volume
Multi move
Score = moves + time
Square buttons
SortIt, 2.2, build 3852,
2013-10-19,
Copyright (c) 2011-2013
JZ IT-Konsult AB
Undo reset score [1]

Here is detailed description of controls available from this view:



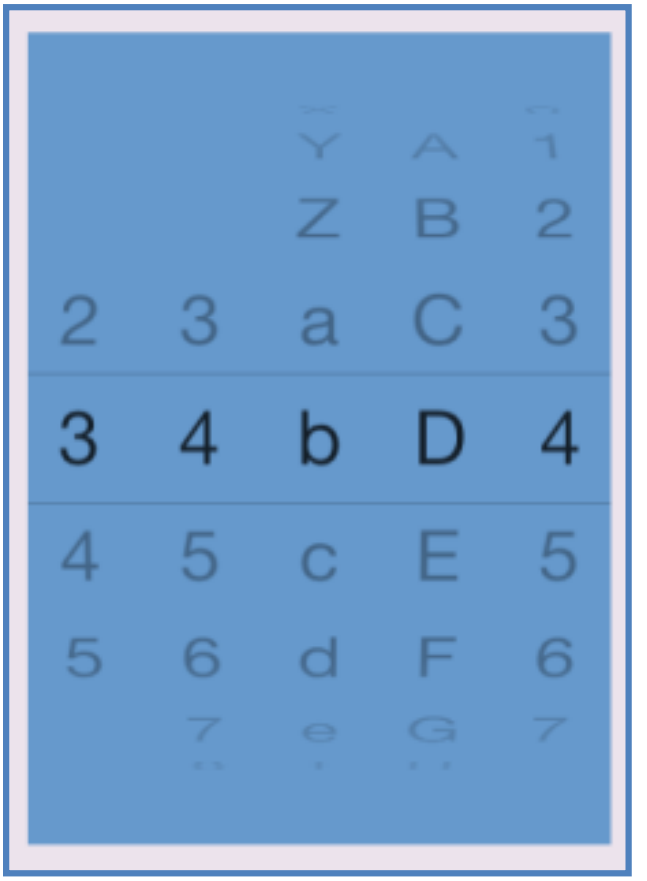
Terminate view and save changes. Instead tapping on button you can use gesture - swipe to the right.



Terminate view, save changes and go to More settings view.



Visualization of game surface.

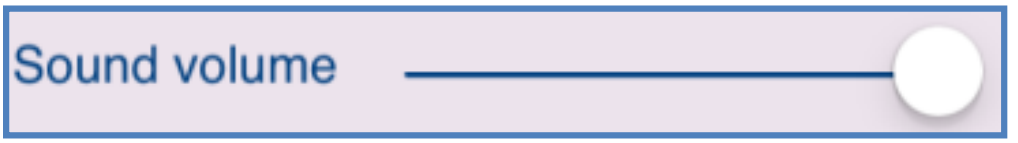


Picker for selection of:

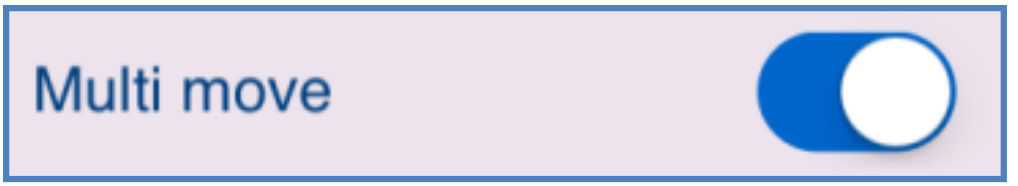
- Game dimensions (first and second selector from left)
- Desktop color (third selector)
- Button surface color (forth selector)
- Button text color (last selector)



Show Help view.



Volume of sound effects in app.



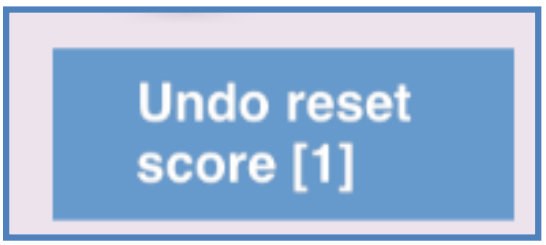
Determines if it is allowed to move several buttons with one button-touch.



Determines if time will be counted as score.



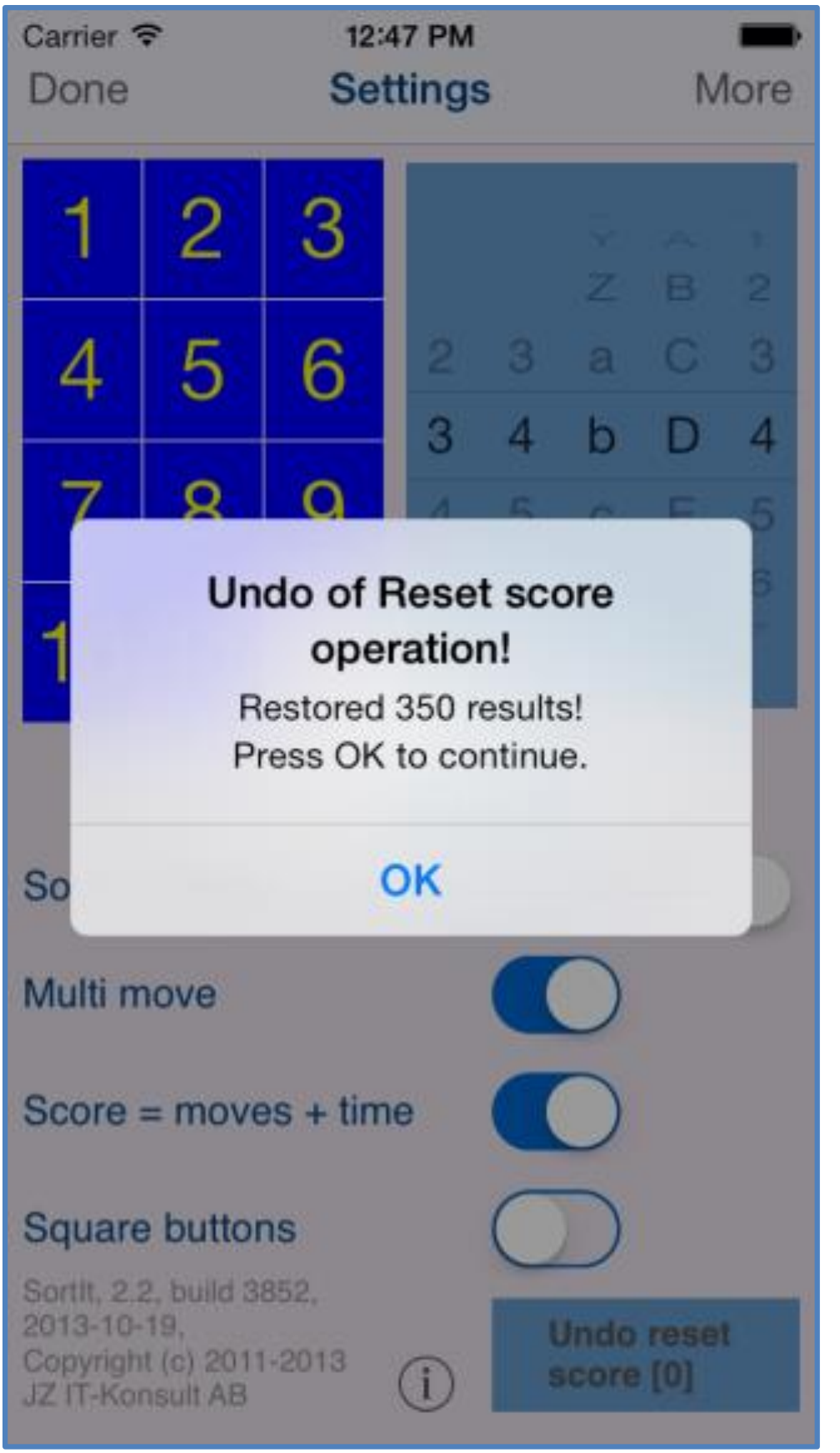
Shape of game buttons: square or rectangular to fill whole game surface.



Undo resetting of score - number in brackets shows number of undo levels. When tapped the following will be shown:


Carrier
12:46 PM
Done
Settings
More
1 2 3
4 5 6
7 8 9
Undo of Reset score operation!!!
Do You want to continue?
Yes
No
Multi move
Score = moves + time
Square buttons
SortIt, 2.2, build 3852,
2013-10-19,
Copyright (c) 2011-2013
JZ IT-Konsult AB
Undo reset score [1]

When you answer “Yes” game results removed during previous reset operation will be restored back and information about number of restored scores will be shown:


Carrier
12:47 PM
Done
Settings
More
1 2 3
4 5 6
Undo of Reset score operation!
Restored 350 results!
Press OK to continue.
OK
Multi move
Score = moves + time
Square buttons
SortIt, 2.2, build 3852,
2013-10-19,
Copyright (c) 2011-2013
JZ IT-Konsult AB
Undo reset score [0]

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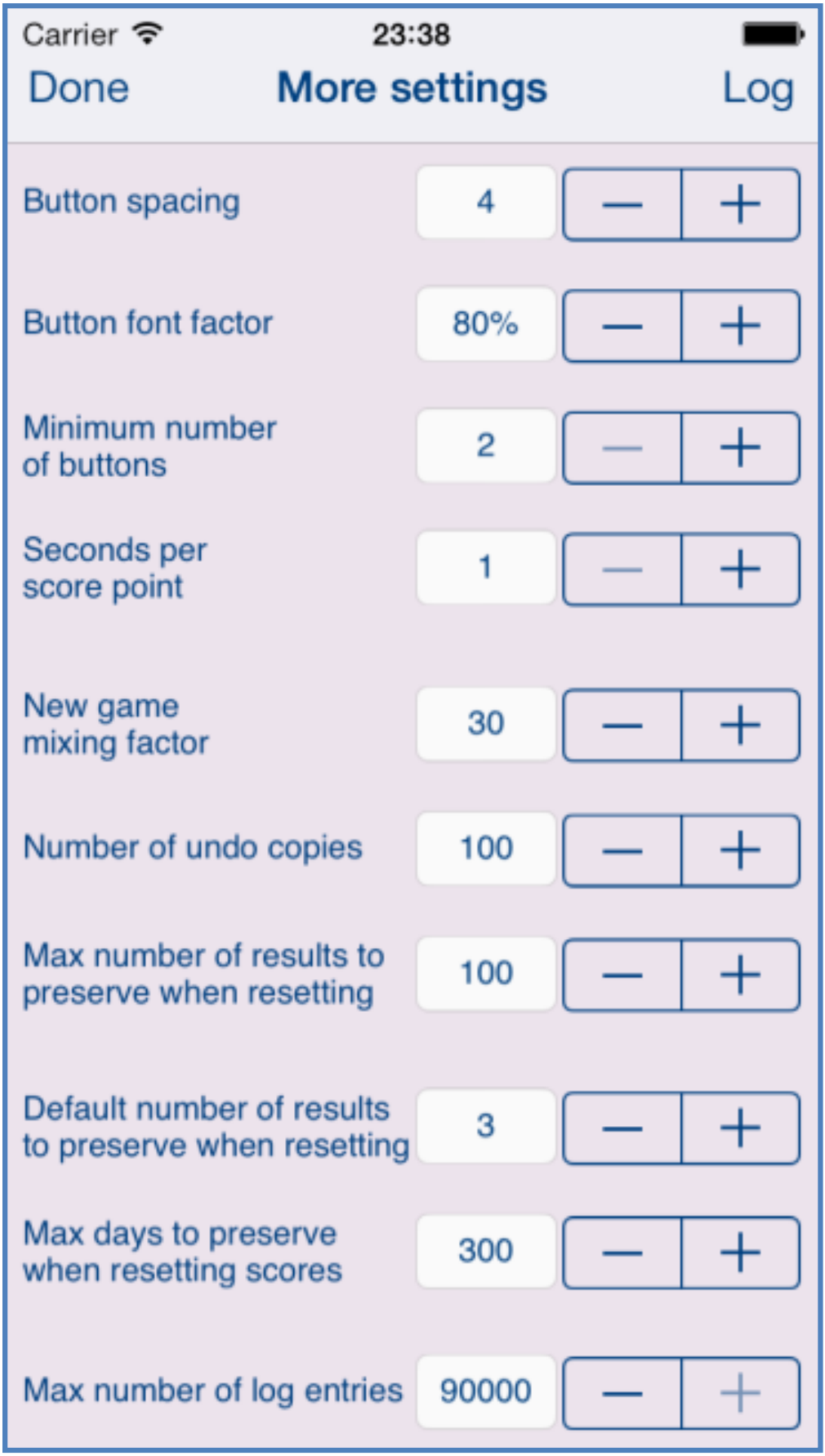
5. More settings view

This view is used to configure additional app parameters and allows access to some additional views.


Carrier
23:38
Done
More settings
Log
Button spacing
4
Button font factor
80%
Minimum number of buttons
2
Seconds per score point
1
New game mixing factor
30
Number of undo copies
100
Max number of results to preserve when resetting
100
Default number of results to preserve when resetting
3
Max days to preserve when resetting scores
300
Max number of log entries
90000

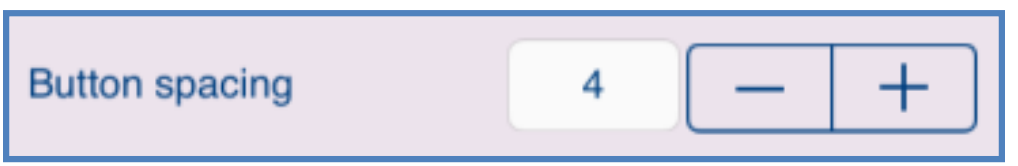
Here is detailed description of controls available from this settings view:



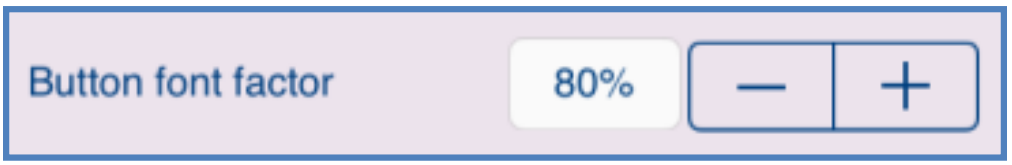
Terminate view and save changes. Instead tapping on button you can use gesture - swipe to the right.



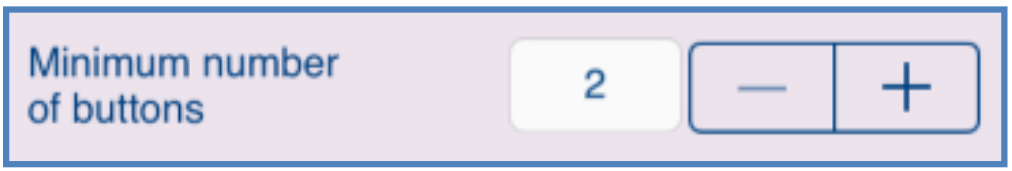
Terminate view, save changes and go to Log view.



Determines space between buttons.



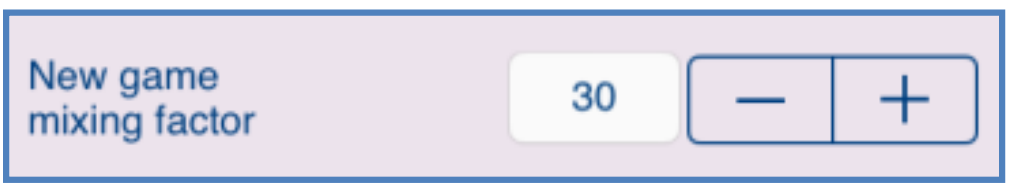
Determines size of font used for text on game buttons. The greater percentage the bigger font.



Minimum size of game surface.

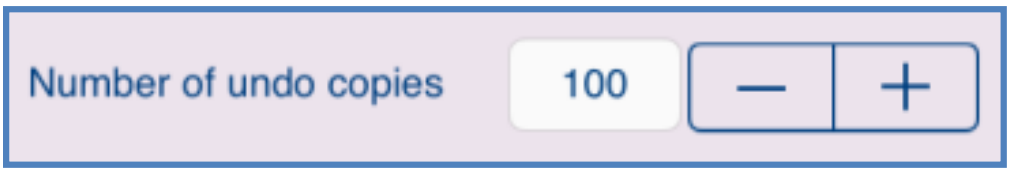


How many points per seconds is used for scoring game, when setting “Score = moves + time” is active.

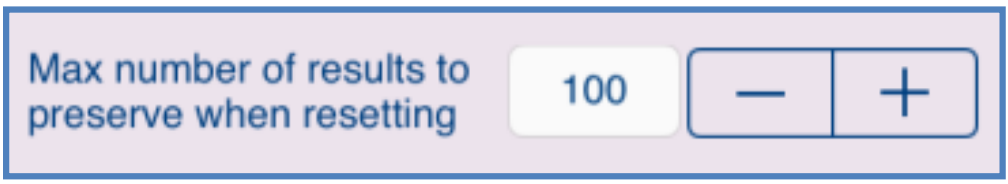


Intensity of mixing buttons when New game is started. When you

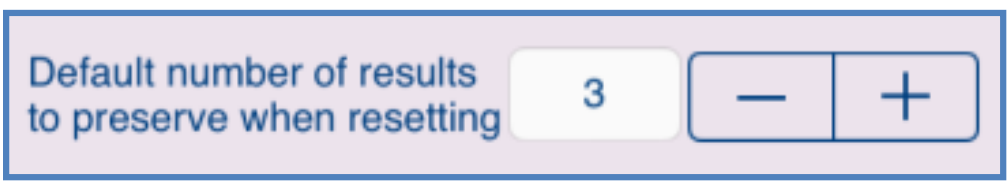
are not satisfied with quality of mixing increase this setting.



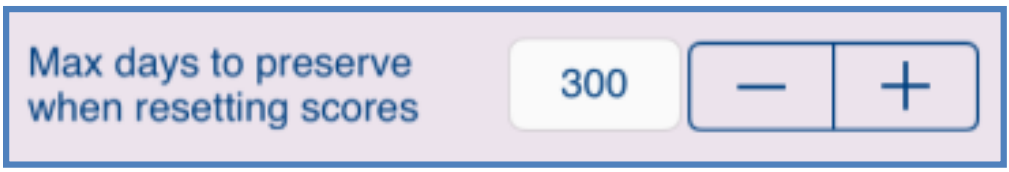
Number of undo copies of score database. Determines how many levels of game results removed by reset might be taken back by undo operation.



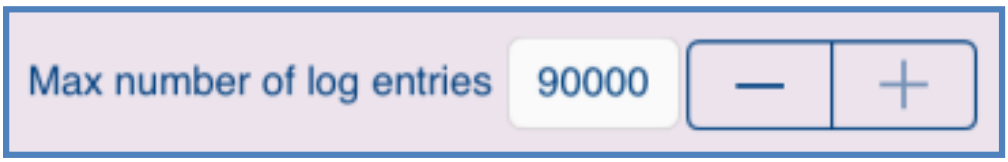
Maximum number of score results, which will be preserved during “Reset score” operation.



Default value of “Results to preserve” in Reset score view.



Default value of “Older than” in Reset score view.



Sets number of log entries used to log game events. When number of log entries reaches this limit, the oldest entries will be removed automatically.

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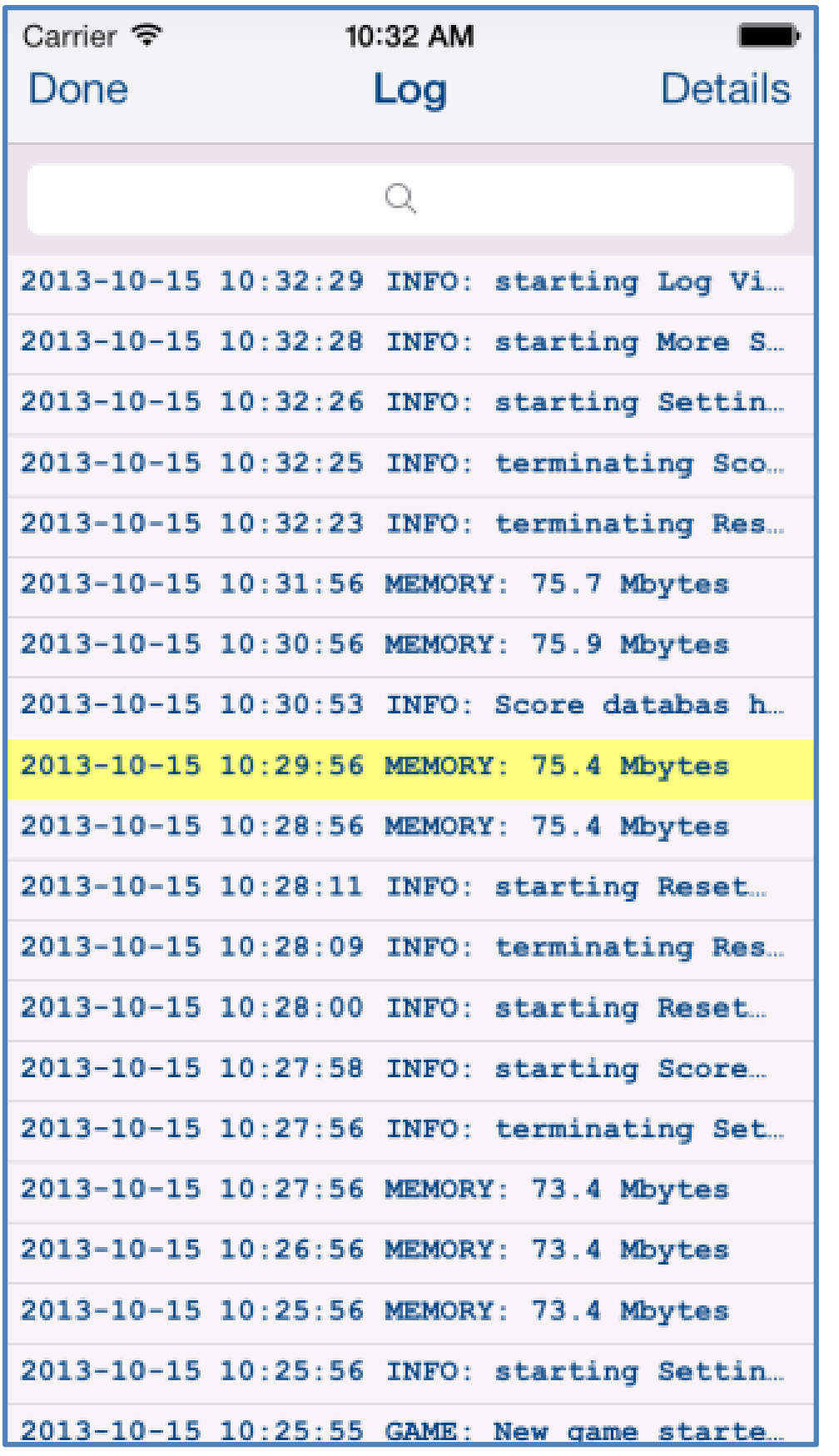
6. Log view

Log view contains list of all system events. Every event might be investigated by activating Log details view.


Carrier
10:32 AM
Done
Log
Details
2013-10-15 10:32:29 INFO: starting Log Vi…
2013-10-15 10:32:28 INFO: starting More S…
2013-10-15 10:32:26 INFO: starting Settin…
2013-10-15 10:32:25 INFO: terminating Sco…
2013-10-15 10:32:23 INFO: terminating Res…
2013-10-15 10:31:56 MEMORY: 75.7 Mbytes
2013-10-15 10:30:56 MEMORY: 75.9 Mbytes
2013-10-15 10:30:53 INFO: Score databas h…
2013-10-15 10:29:56 MEMORY: 75.4 Mbytes
2013-10-15 10:28:56 MEMORY: 75.4 Mbytes
2013-10-15 10:28:11 INFO: starting Reset…
2013-10-15 10:28:09 INFO: terminating Res…
2013-10-15 10:28:00 INFO: starting Reset…
2013-10-15 10:27:58 INFO: starting Score…
2013-10-15 10:27:56 INFO: terminating Set…
2013-10-15 10:27:56 MEMORY: 73.4 Mbytes
2013-10-15 10:26:56 MEMORY: 73.4 Mbytes
2013-10-15 10:25:56 MEMORY: 73.4 Mbytes
2013-10-15 10:25:56 INFO: starting Settin…
2013-10-15 10:25:55 GAME: New game starte…

View shows program events, such like:

- Start of game,
- Termination of game,
- Memory used, errors, etc.
- To refresh data from this view use gesture – shake device.

Controls available from this settings view:



Terminate view. Instead tapping on button you can use gesture - swipe to the right.



Terminate view and go to Log details view.

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7. Log details view

View shows details of log event.



Controls available from this view:



Terminate view. Instead tapping on button you can use gesture - swipe to the right.

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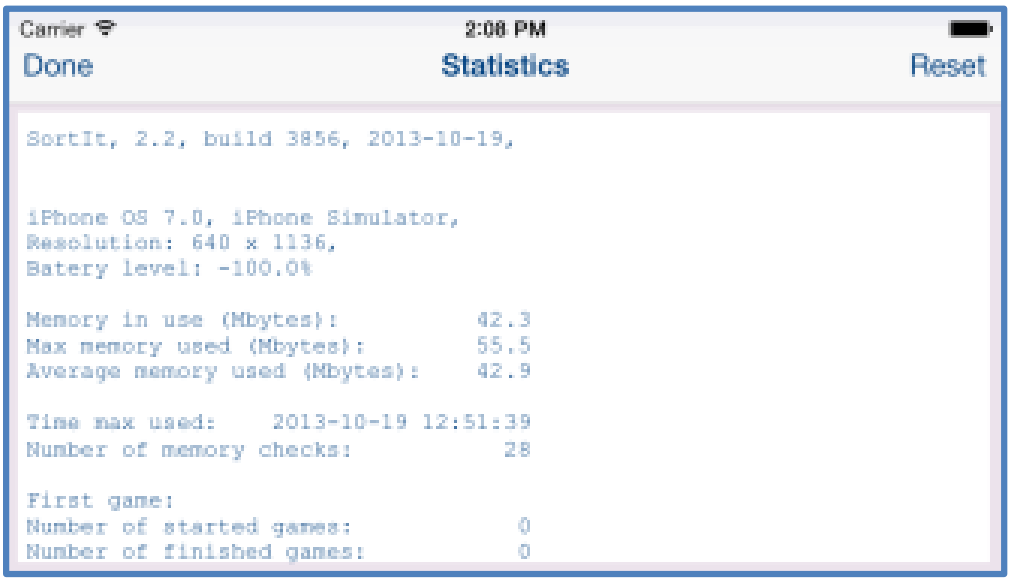
8. Statistics view

This view just shows some statistics about usage of app:



1) Version, build information:

```
SortIt, 1.0, build 6462, 2013-09-21
```

2) Type of device:

```
iPhone OS 7.0, iPhone,
Resolution: 640 x 1136,
Batery level: 100.0%
```

3) Memory statistics:

```
Memory in use (Mbytes):          34.9
Max memory used (Mbytes):        97.5
Average memory used (Mbytes):    64.9
```

```
Time max used:    2013-09-20 22:26:02
Number of memory checks:          160
```

4) Statistics about app usage:

```
First game:       2013-09-20 21:47:47
Number of started games:            11
Number of finished games:            0
Total number of moves:               0
Total play time:                0:00:00
```

5) App database statistics:

```
Number of log entries:            1105
Entries in score DB:               210
Game types in score DB:             70
Users in score DB:                   3
```

6) List of app files:

```
List of files in document directory:
SortIt.Version.1.0         :         0
SortIt.log                 :    122880
SortIt.status              :       962
SortIt.statistics          :       635
SortIt.setup               :       999
SortIt.log                 :     28672
SortIt.db.20130920_213309  :     32768
SortIt.db                  :     32768
-------------------------------------
Total bytes:                    219684
Total Mbytes:                      0.2
```

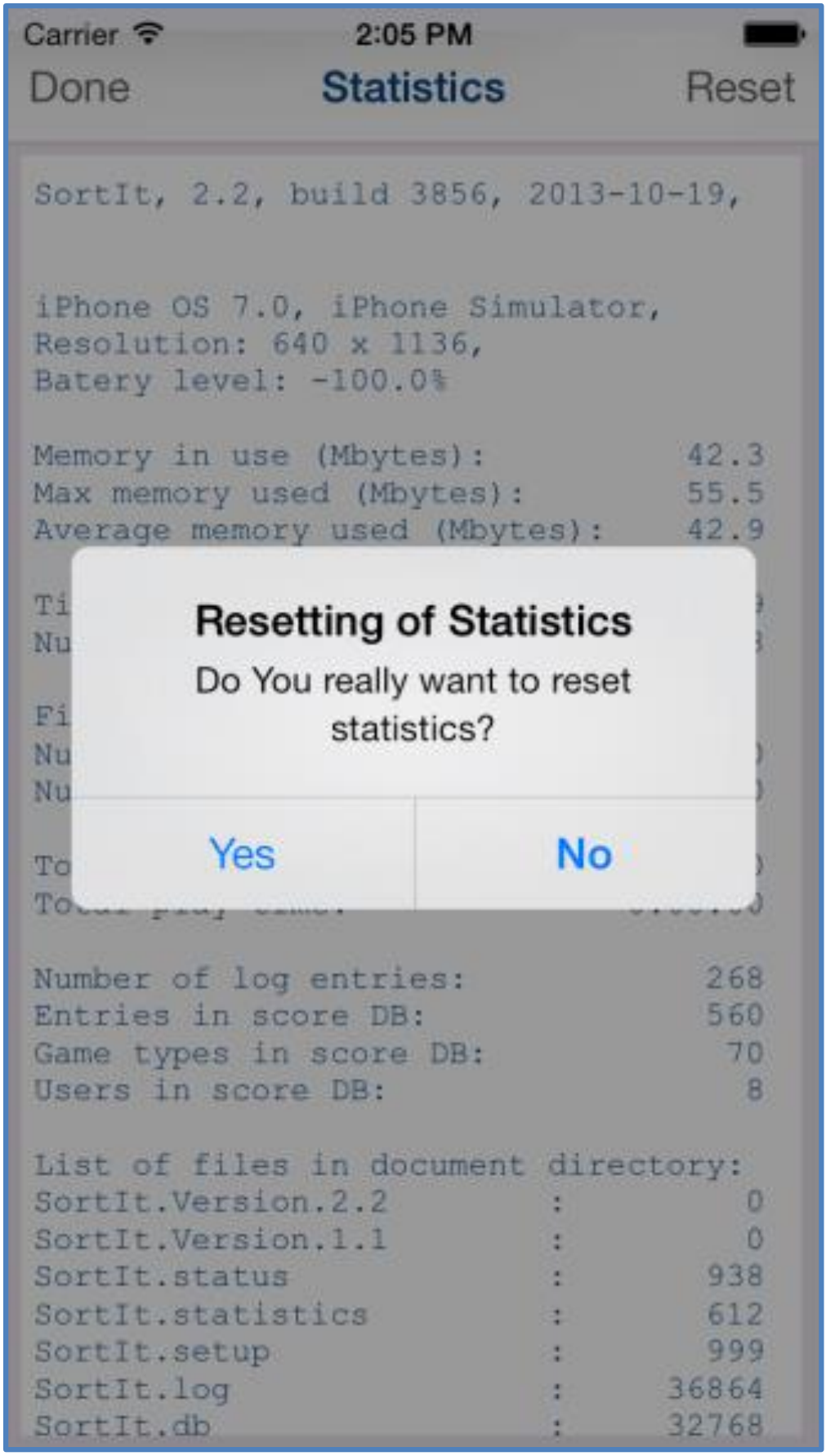
Here is detailed description of controls available from this view:



Terminate view. Instead tapping on button you can use gesture - swipe to the right.



Reset statistics. When tapped the following will be shown:


Carrier
2:05 PM
Done
Statistics
Reset
SortIt, 2.2, build 3856, 2013-10-19,
iPhone OS 7.0, iPhone Simulator,
Resolution: 640 x 1136,
Batery level: -100.0%
Memory in use (Mbytes): 42.3
Max memory used (Mbytes): 55.5
Average memory used (Mbytes): 42.9
Resetting of Statistics
Do You really want to reset statistics?
Yes
No
Number of log entries: 268
Entries in score DB: 560
Game types in score DB: 70
Users in score DB: 8
List of files in document directory:
SortIt.Version.2.2 : 0
SortIt.Version.1.1 : 0
SortIt.status : 938
SortIt.statistics : 612
SortIt.setup : 999
SortIt.log : 36864
SortIt.db : 32768

Reset statistics - clears accumulated statistics and sets to zero system-counters. To reset statistics you must answer “Yes” on alert question.

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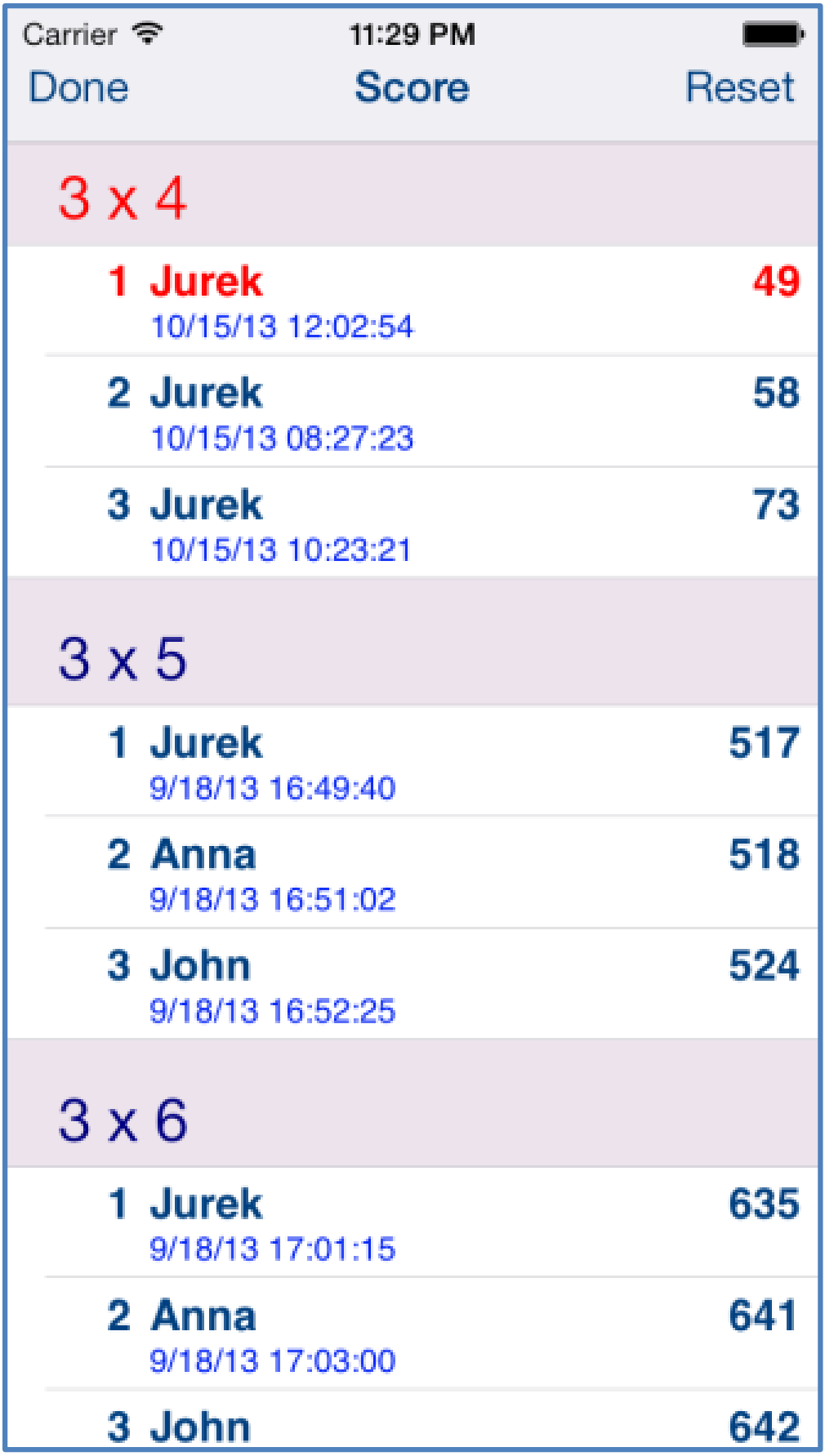
9. Score view

Show contents of score database, game results are sorted by game dimension and score. Date and time of game, player name and score is shown. Latest game type and result is shown in red color.


Carrier
11:29 PM
Done
Score
Reset
3 x 4
1 Jurek 49
10/15/13 12:02:54
2 Jurek 58
10/15/13 08:27:23
3 Jurek 73
10/15/13 10:23:21
3 x 5
1 Jurek 517
9/18/13 16:49:40
2 Anna 518
9/18/13 16:51:02
3 John 524
9/18/13 16:52:25
3 x 6
1 Jurek 635
9/18/13 17:01:15
2 Anna 641
9/18/13 17:03:00
3 John 642

Here is detailed description of controls available from statistics view:



Terminate view. Instead tapping on button you can use gesture - swipe to the right.



Opens “Reset score view”.

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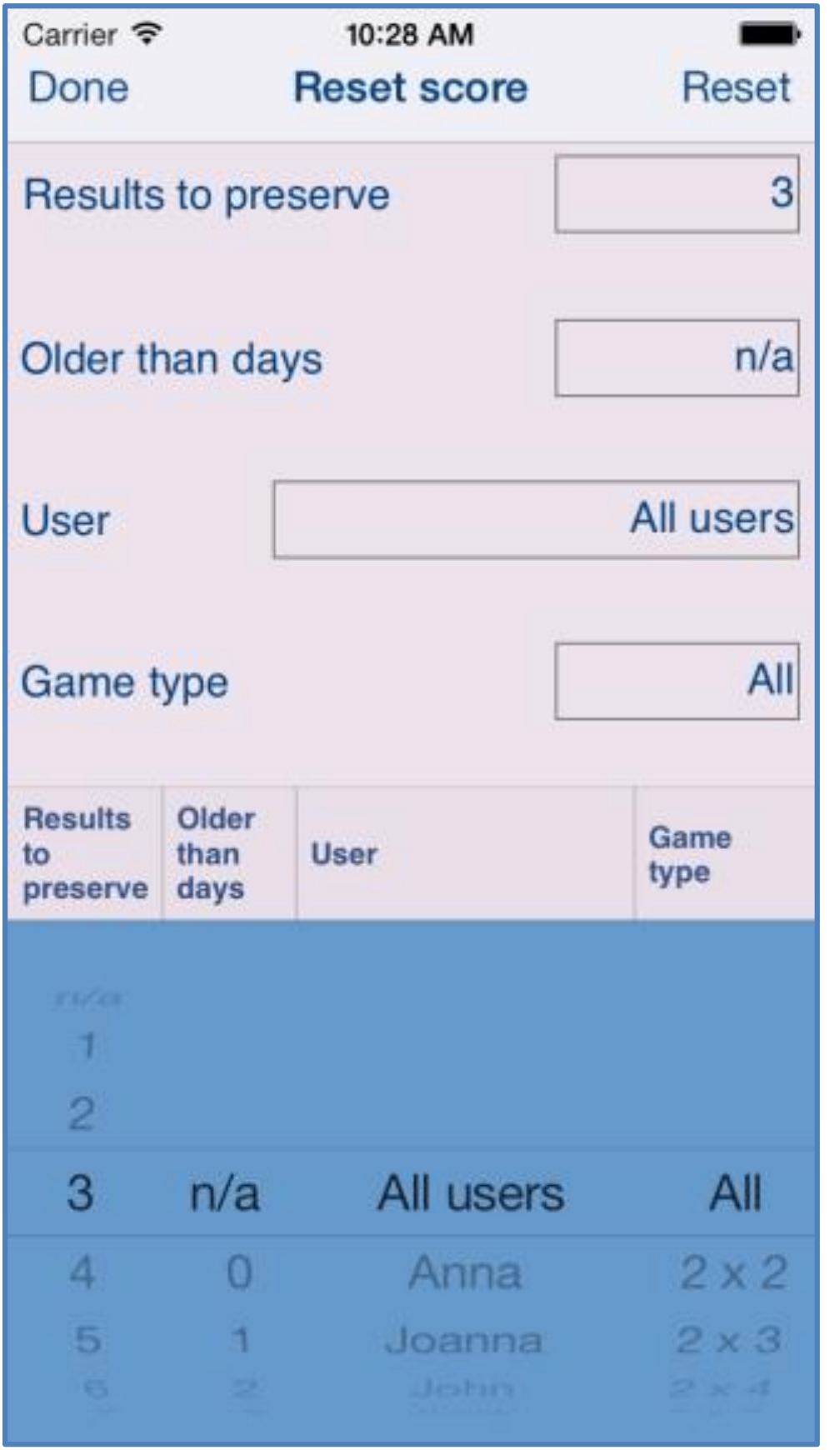
10. Reset score view

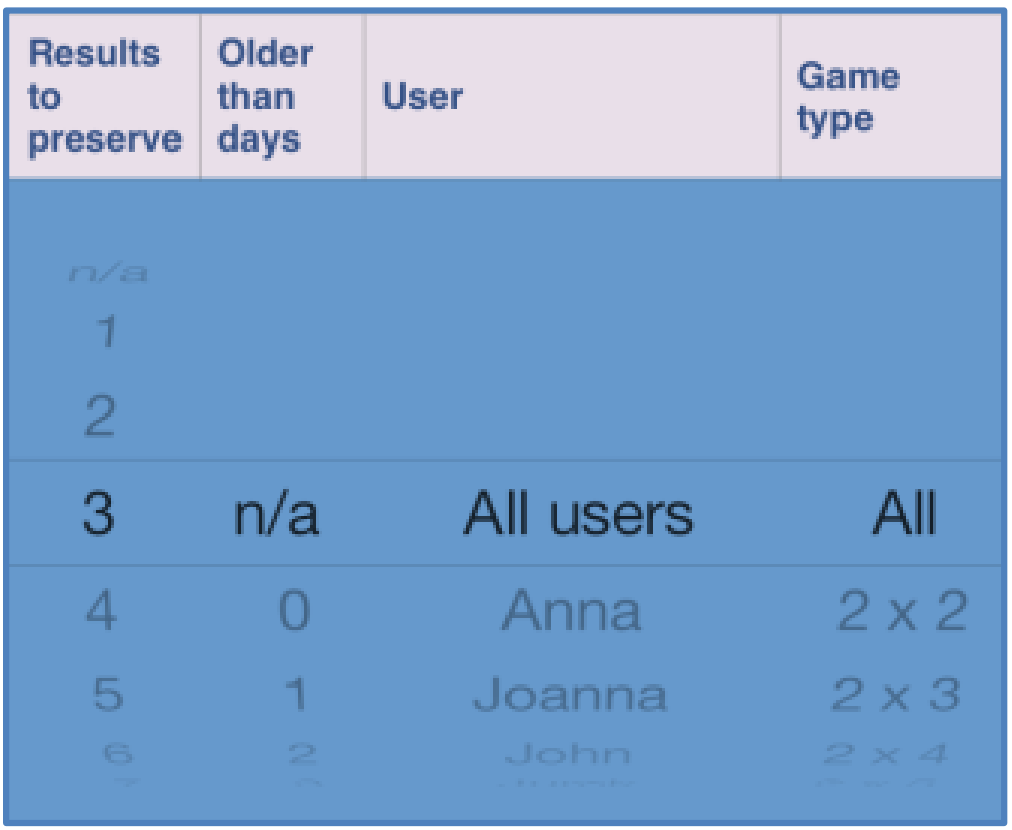
This view allows to cleanup of score database by deleting of some scores.


Carrier
10:28 AM
Done
Reset score
Reset
Results to preserve
3
Older than days
n/a
User
All users
Game type
All
Results to preserve
Older than days
User
Game type
n/a
1
2
3
n/a
All users
All
4
0
Anna
2 x 2
5
1
Joanna
2 x 3
6
2
John
2 x 4

Here is detailed description of controls available from statistics view:



Terminate view. Instead tapping on button you can use gesture - swipe to the right.



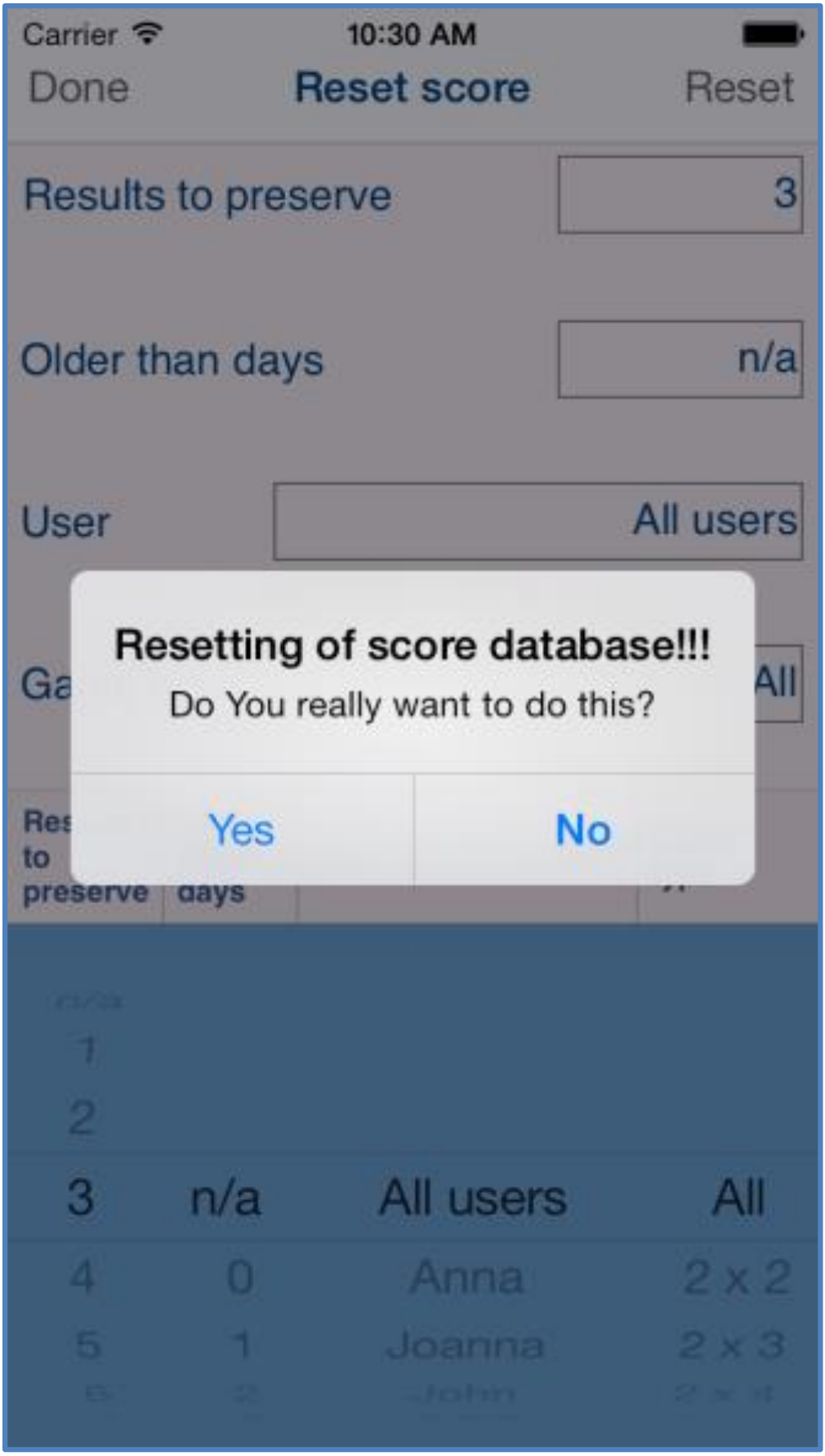
Picker for defining what should be deleted during resetting:

- “Results to preserve” – number of results for game type to preserve – not delete.
- “Older than days” – remove results older than selected number of days
- “User” – remove results for all users or only for selected user.

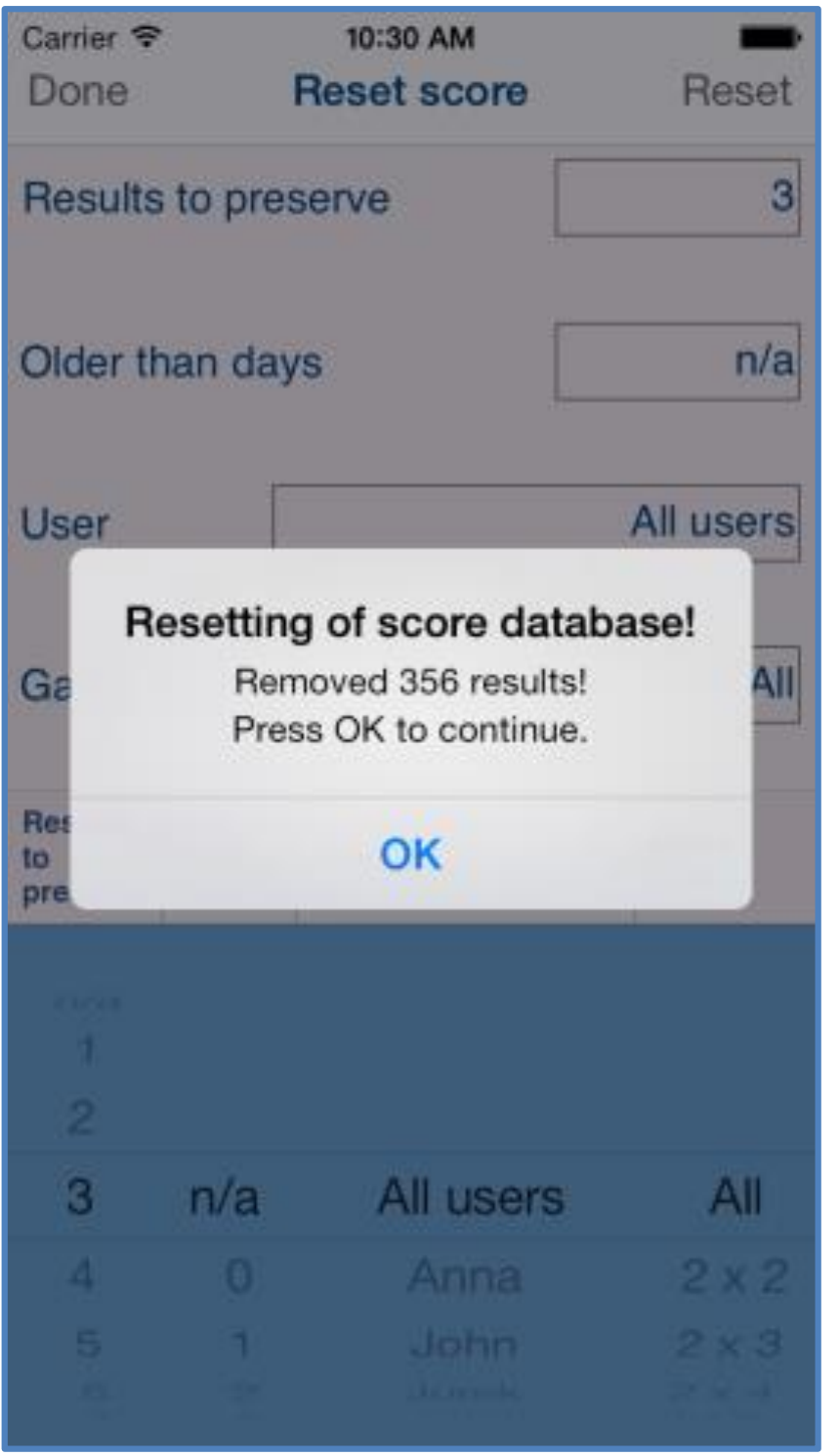
“Game type” – remove results for all game types or only for selected type.



Performs resetting of scores according to selection from picker. When tapped the following will be shown:


Carrier
10:30 AM
Done
Reset score
Reset
Results to preserve
3
Older than days
n/a
User
All users
Resetting of score database!!!
Do You really want to do this?
Yes
No
3
n/a
All users
All
4
0
Anna
2 x 2
5
1
Joanna
2 x 3

When you confirm resetting by selecting “Yes” the following information will be shown:



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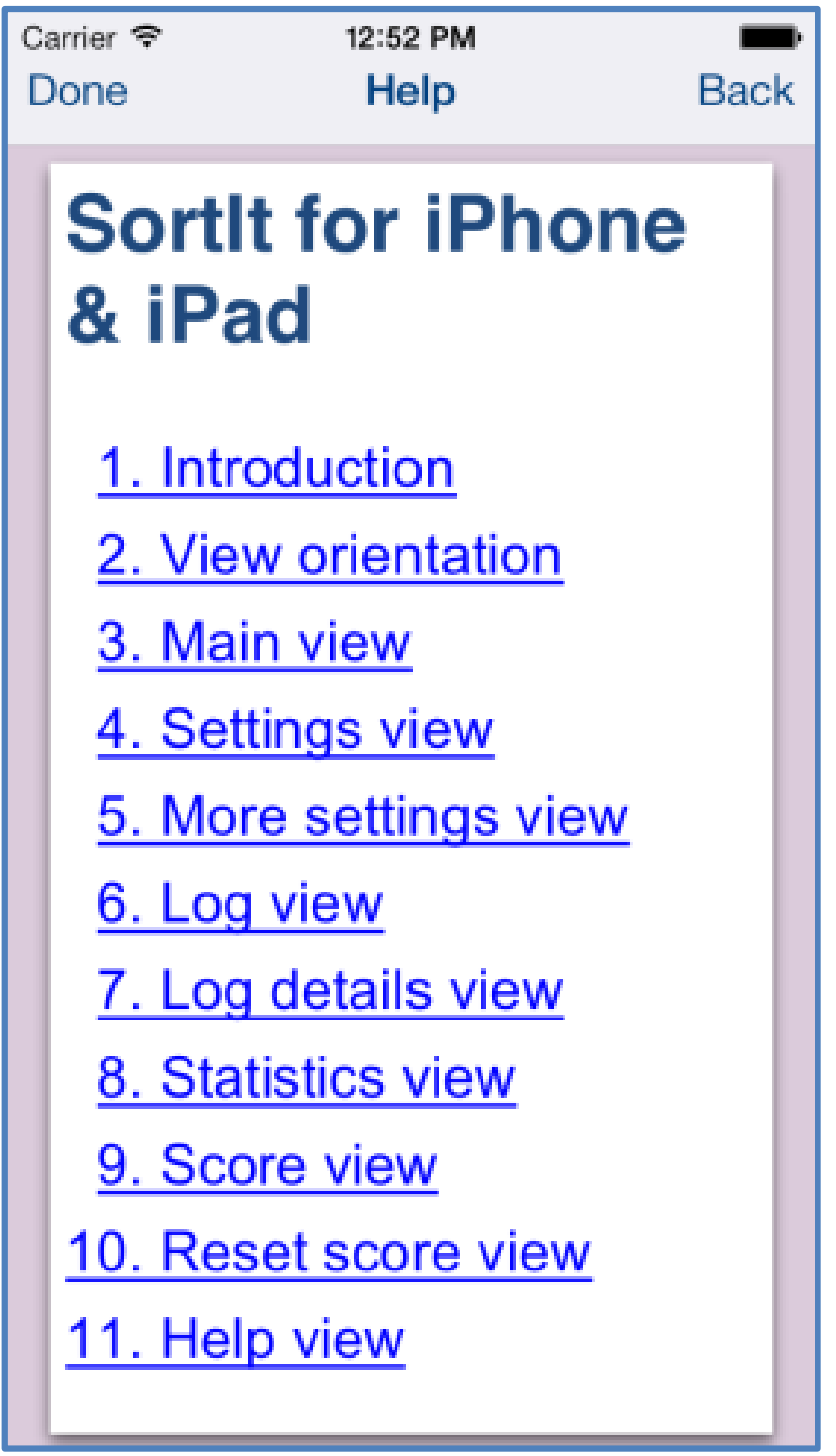
11. Help view

This view shows user guide for app.



The only control available here is:



Terminate view. Instead tapping on button you can use gesture - swipe to the right, when you navigate in help.
When you navigate to external links, swipe to right has same effect as taping “Back” button.
Tapping “Done” button will always terminate Help view.



Navigate to previous page in help or external web pages accessed through links. When you navigate to external links, swipe to right has same effect as taping “Back” button.

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