

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” [\[Wikipedia\]](#).



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,
- “6 x 10” on iPhone 6, iPhone 6 s,
- “7 x 11” on iPhone 6 Plus,
- “9 x 11” on iPad, iPad mini,
- “12 x 15” on iPad Pro

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.

Starting from version 3.0 app supports iCloud data synchronization - data on all iOS devices with same iCloud account will be synchronized. By using “[Sync settings](#)” you can determine what kind of data will be synchronized (saved in iCloud); rest of data is saved locally.

You can customize the app functionality by using “[Settings](#)”. It is possible to adjust almost everything:

- Game dimension.
- Colors.
- Shape and size of buttons.
- Way of counting of score.
- Sound.
- Data which will be synchronized.

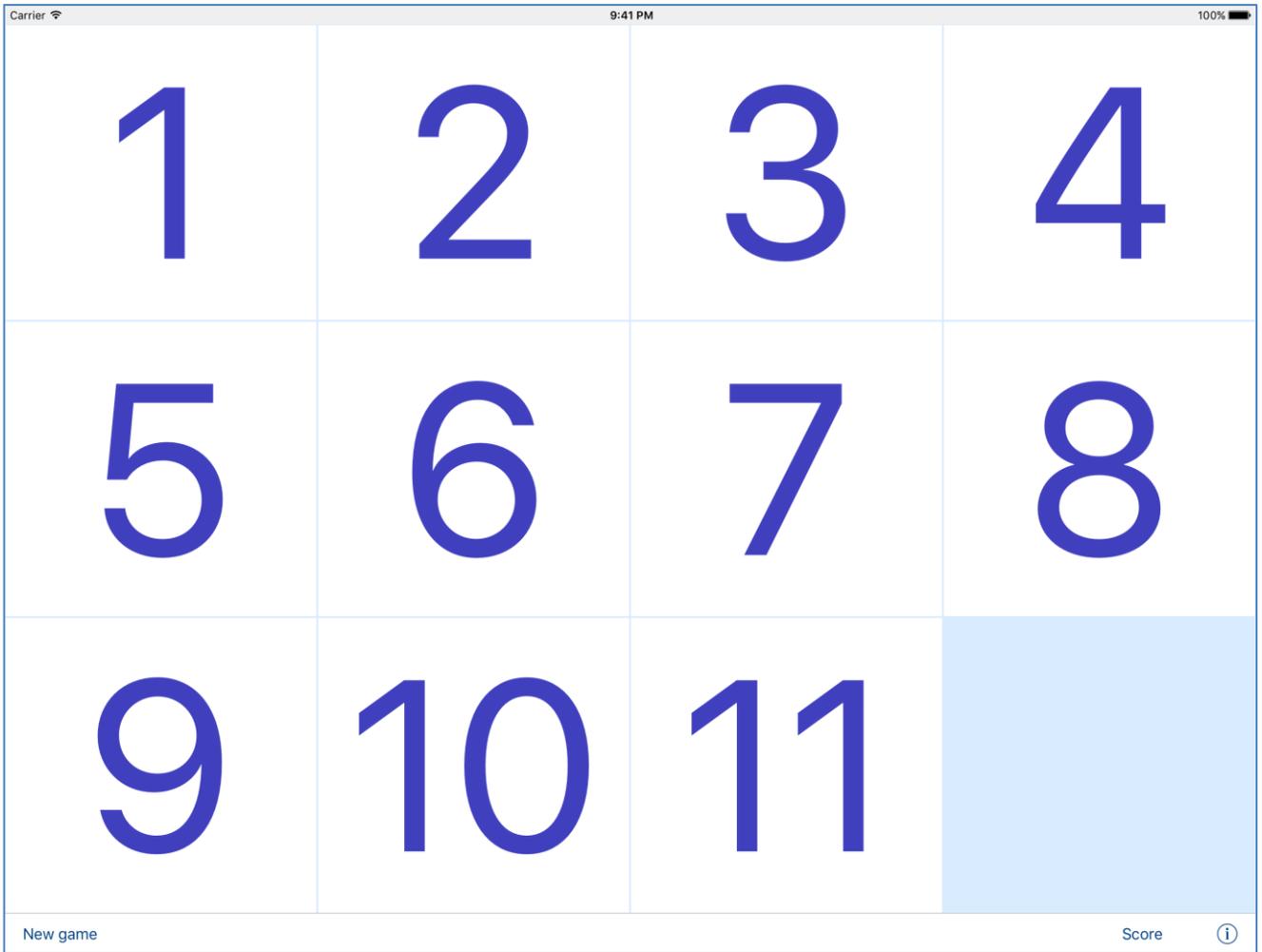
App “[Help](#)” available in the app or on WWW contains detailed description of all functions and options.

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 iOS9, iOS8, iOS7, iOS6.

Pro-version does not contain advertisement banner in main game view.



Pictures in current documentation are taken from iOS8.x and iOS7.x version of SortIt. On devices, which are running older versions of iOS (6.x and 5.x) some controls will look slightly different. Following table contains couple of examples of such differences.

Button

iOS6.x



iOS9.x, iOS8.x, iOS7.x



Picker

iOS6.x



iOS9.x, iOS8.x, iOS7.x



Stepper

iOS6.x



iOS9.x, iOS8.x, iOS7.x



Slider

iOS6.x



iOS9.x, iOS8.x, iOS7.x



Text field

iOS6.x



iOS9.x, iOS8.x, iOS7.x

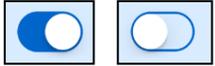


Switch

iOS6.x



iOS9.x, iOS8.x, iOS7.x



Alert

iOS6.x

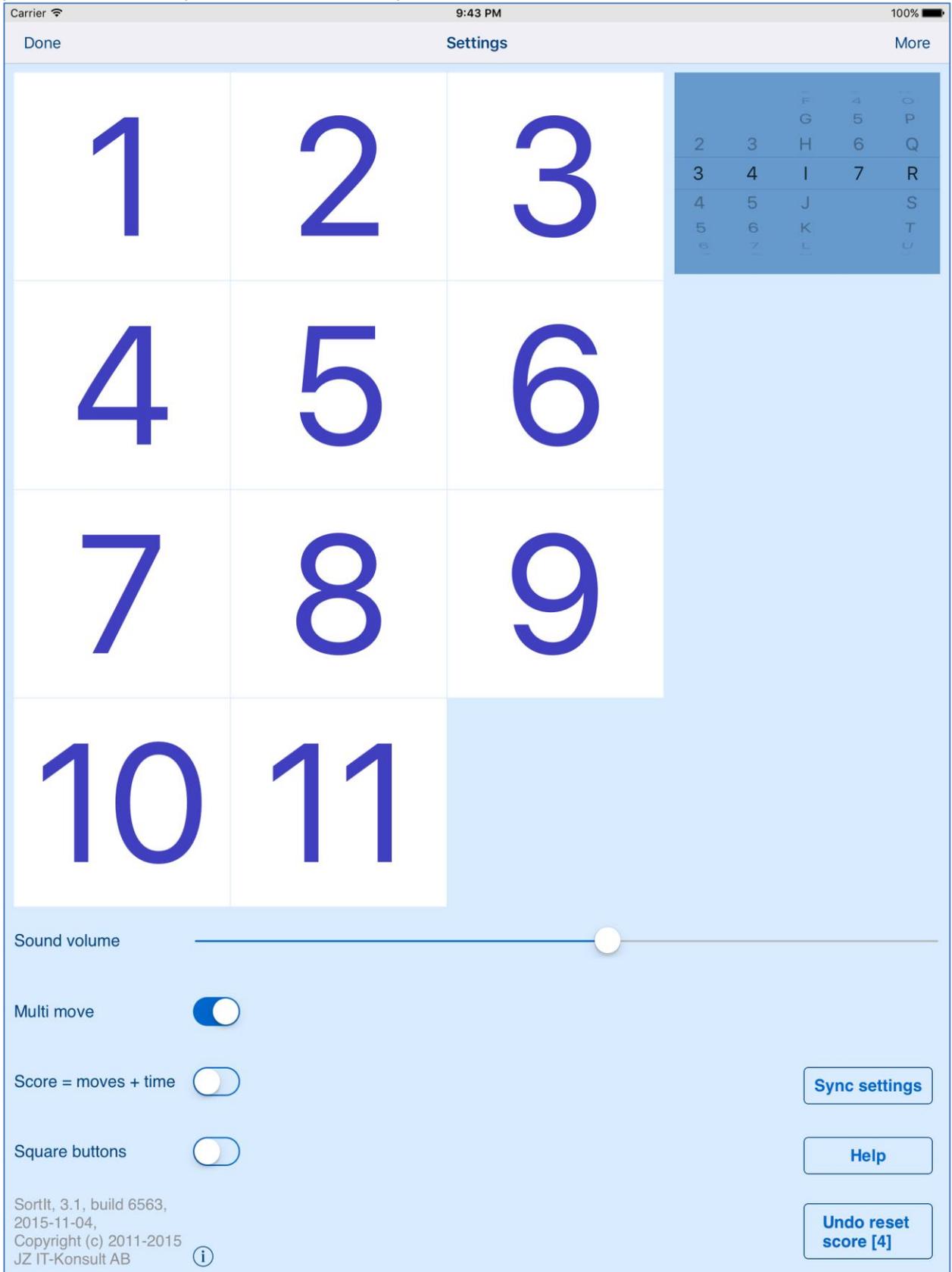


iOS9.x, iOS8.x, iOS7.x



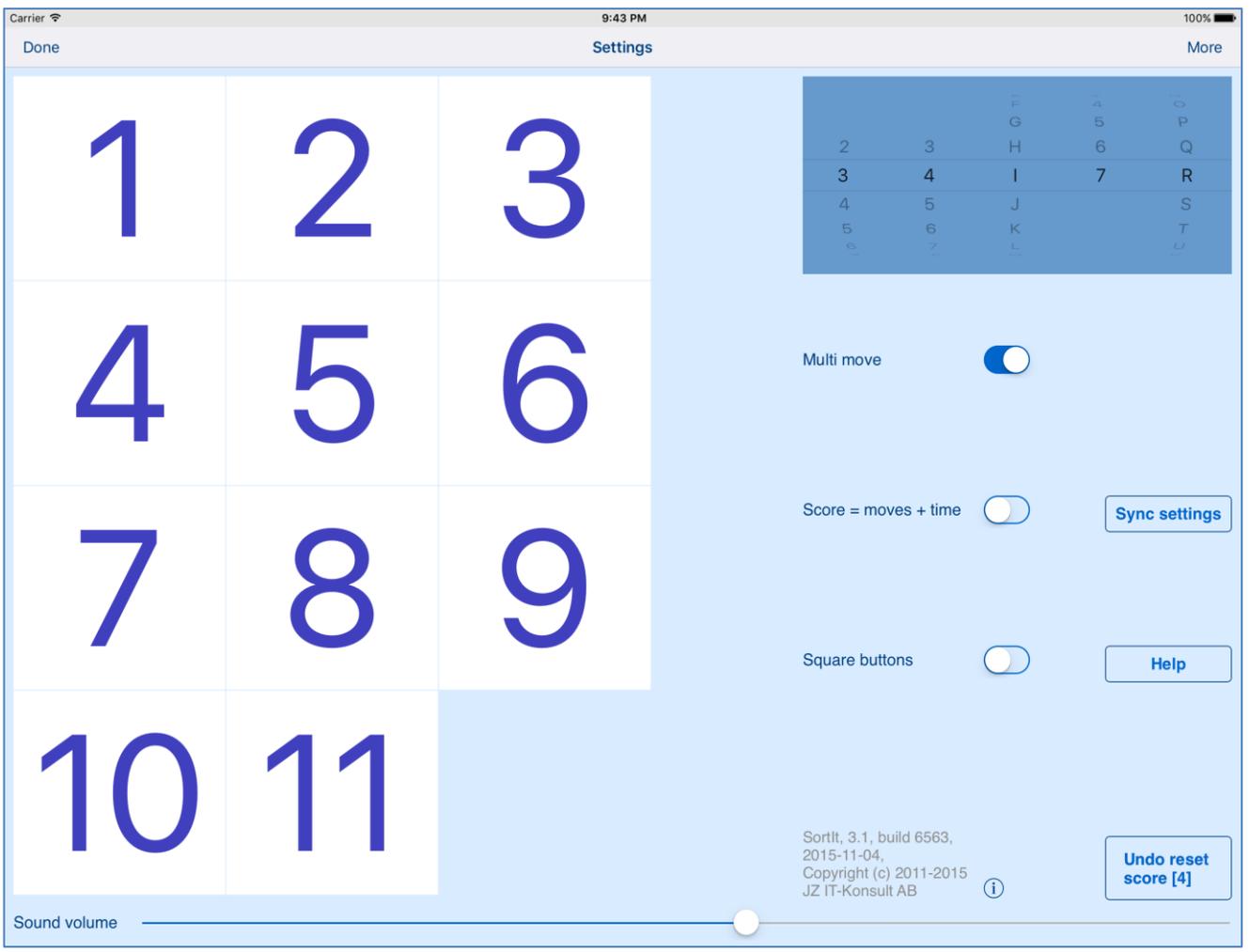
2. View orientation

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.

[\[Back to top\]](#)

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.

The screenshot shows an iOS app interface with a 5x3 grid of numbers. The numbers are arranged as follows:

1	2	3
	5	7
4	6	8
10	9	11

The top status bar shows "Carrier", "9:47 PM", and "100%". The bottom bar contains a "New game" button, a score of "34", a "Score" label, and an information icon.

View contains:

- Game desktop with button to sort.
- Game score.
- Controls to start new game and allow access to [Settings view](#) and [Score view](#).

New game
Button used to start new game

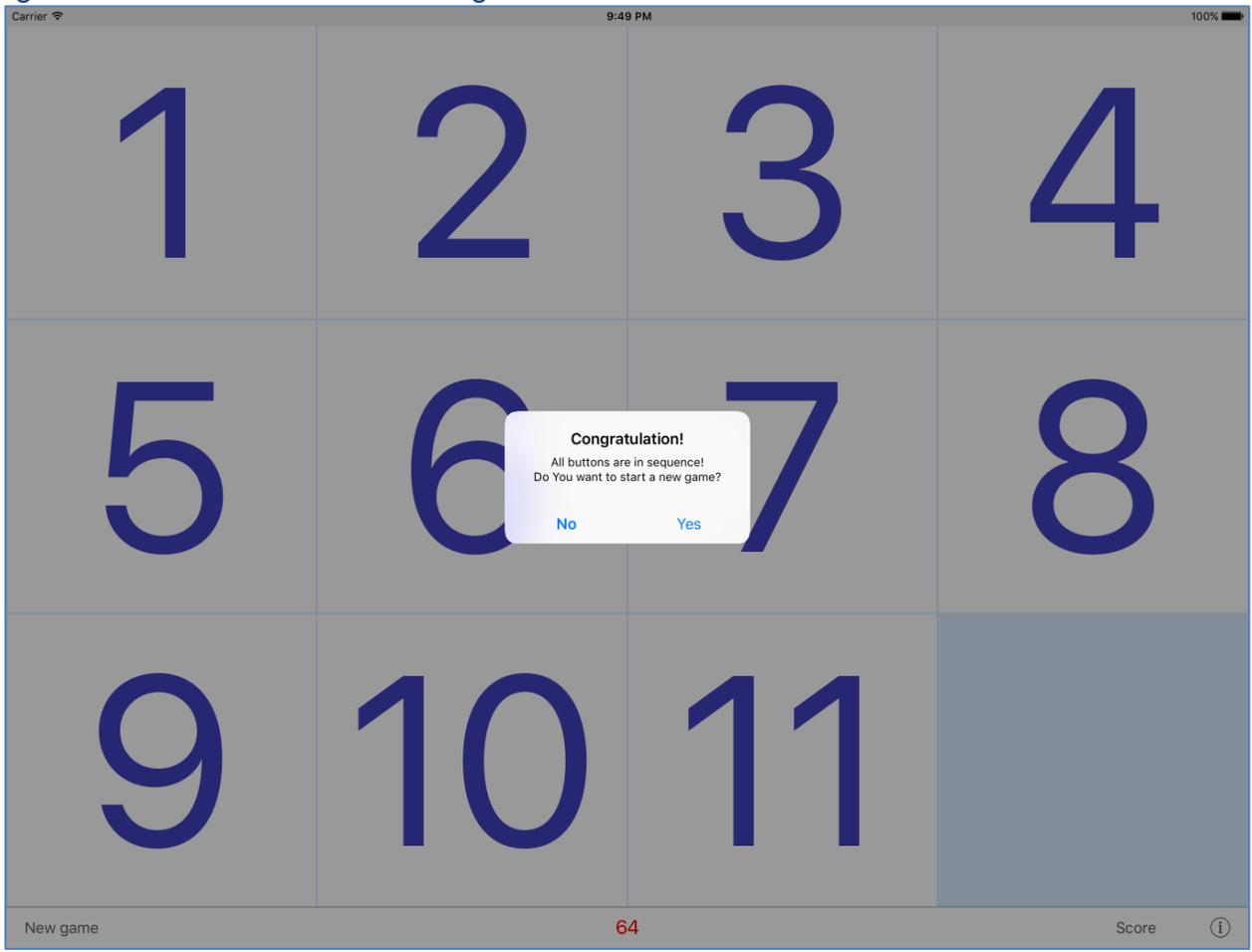
34
Game score, calculated as sum of:

- 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.

Score
Button used to open [Score view](#).

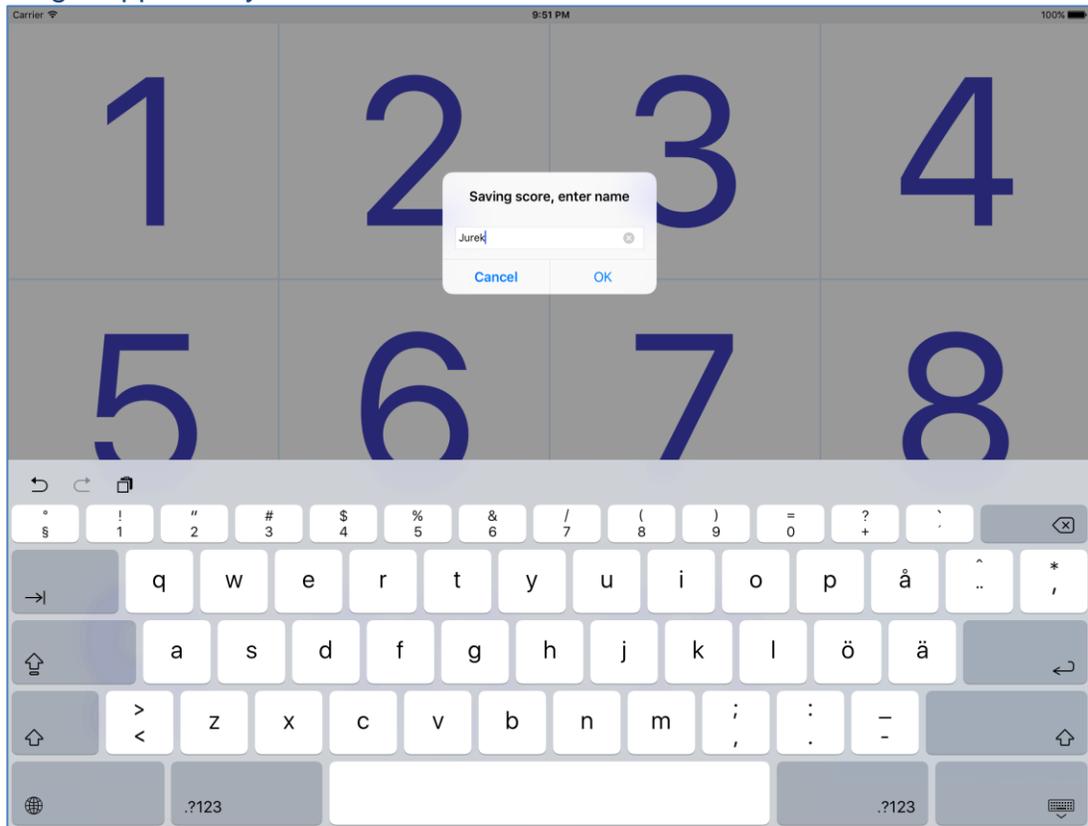
i
Button used to open [Settings view](#).

When game is terminated - the following will be shown:

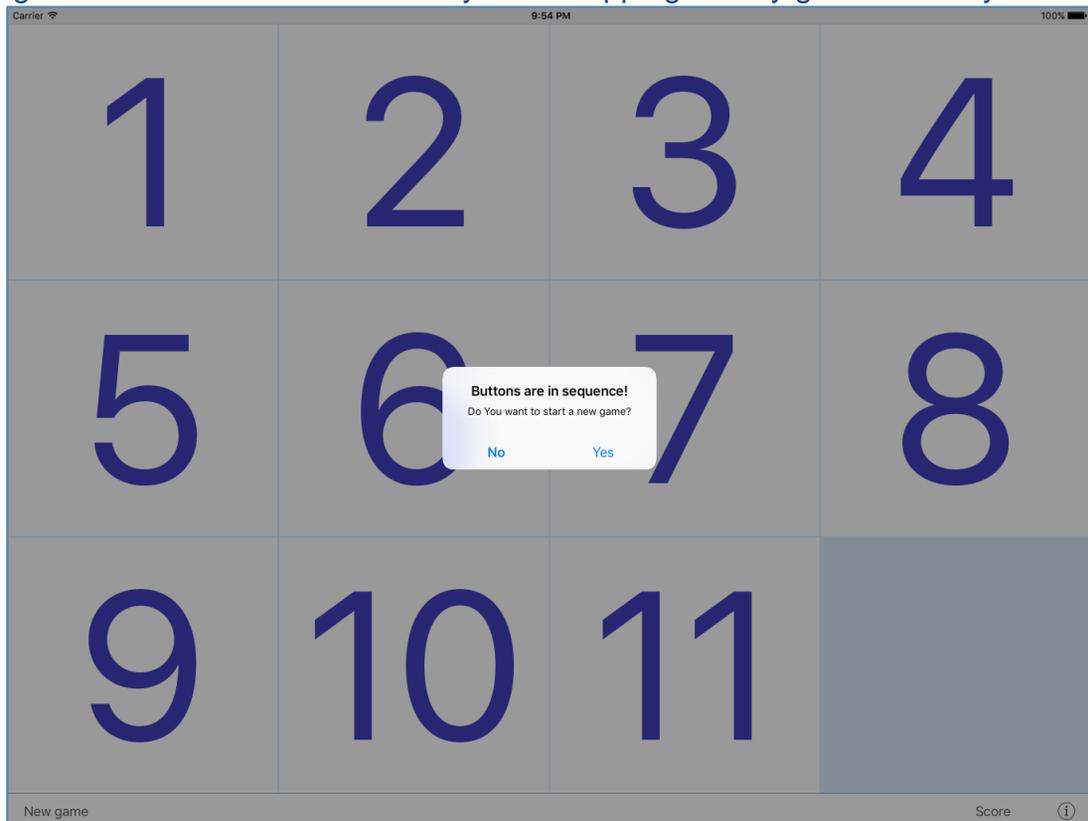


When you answer “Yes” the new game will be started directly after that.

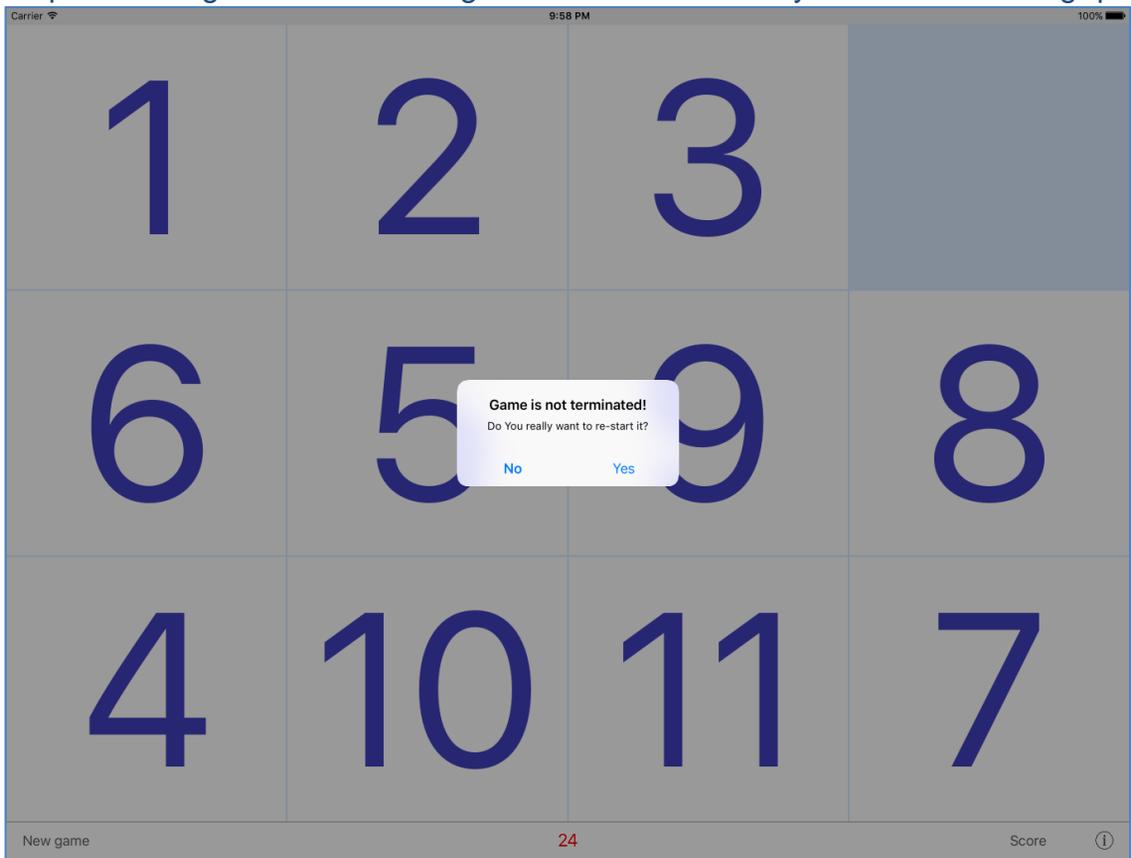
Next you will get opportunity to save score in score-database:



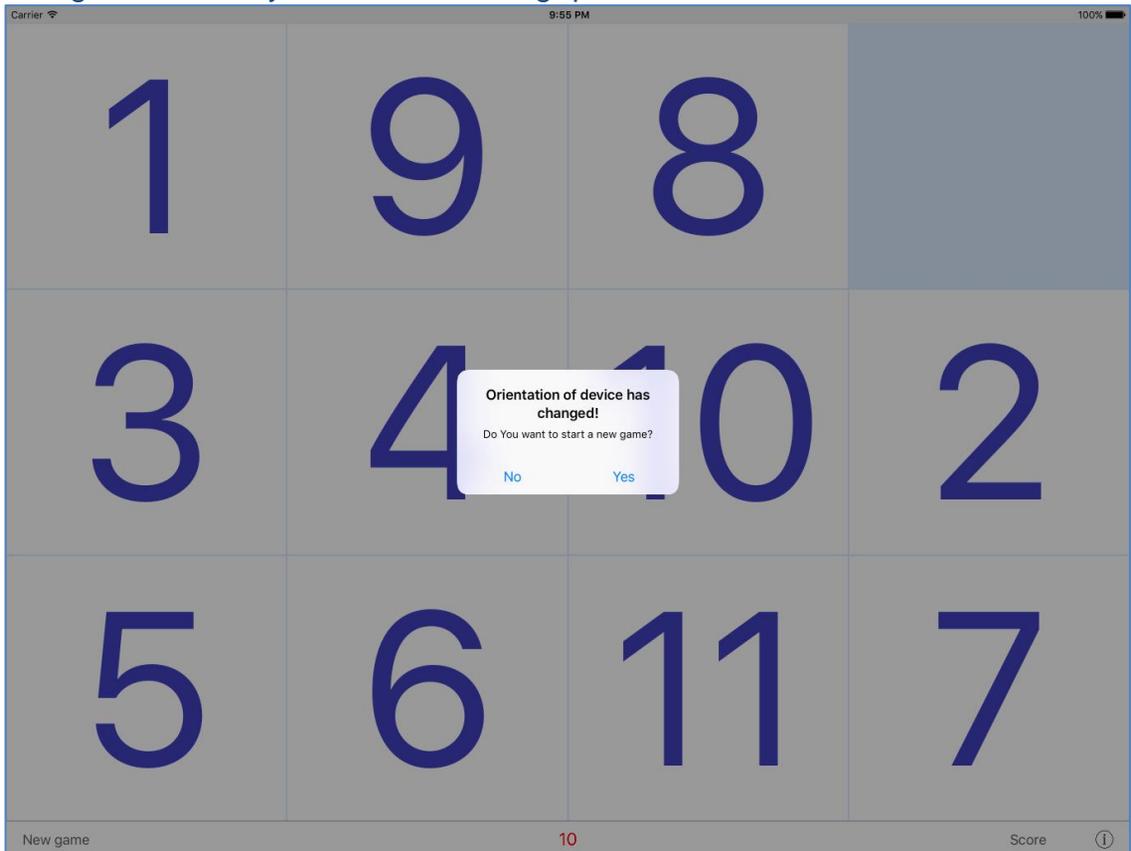
When new game has not been started and you are tapping on any game-button you will see:



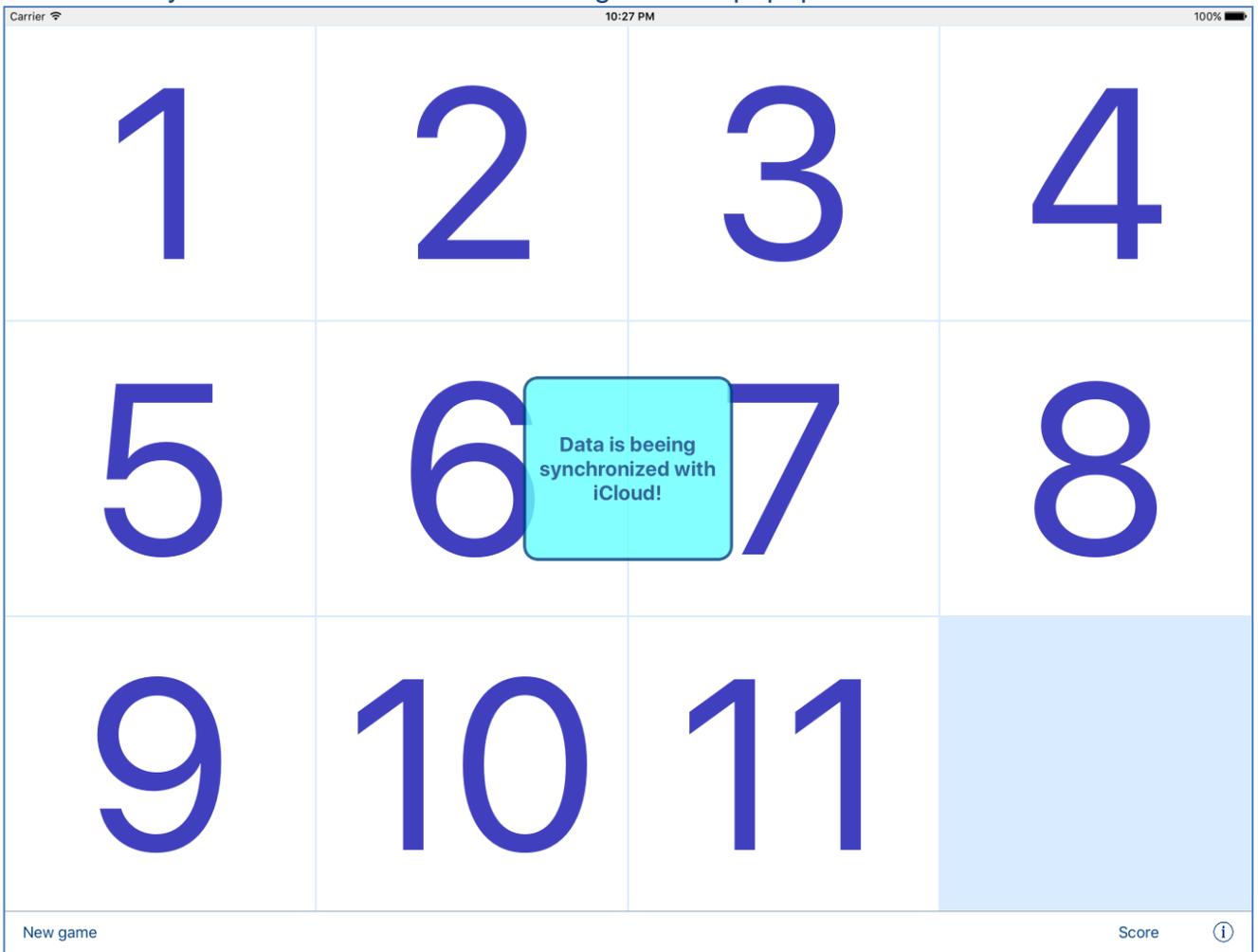
When you tap on "New game" button and game is not terminated you will see warning/question:



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:



When data is synchronized with iCloud following info box popups:

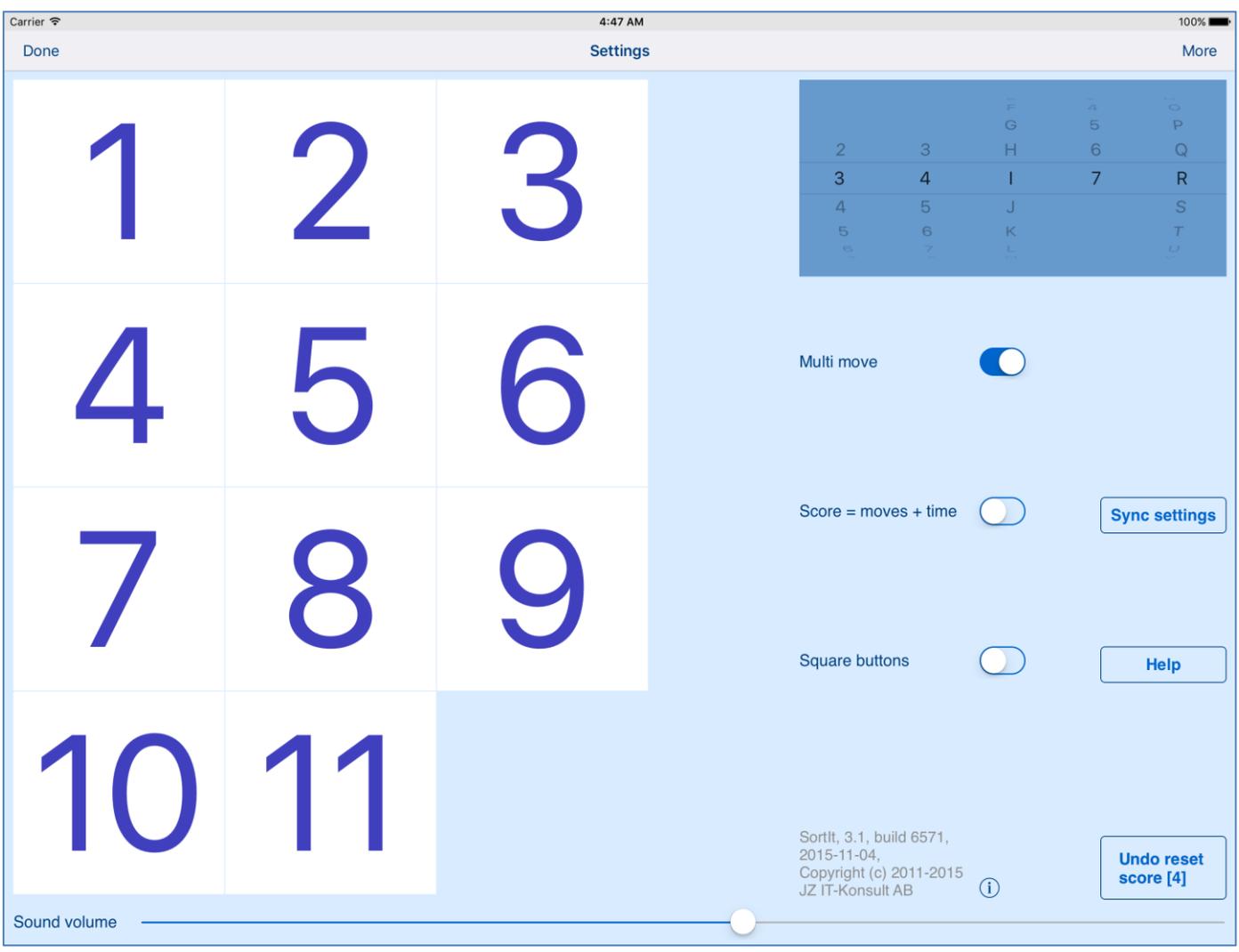


When it is impossible to synchronize game dimensions with dimensions from iCloud you will see following alert:



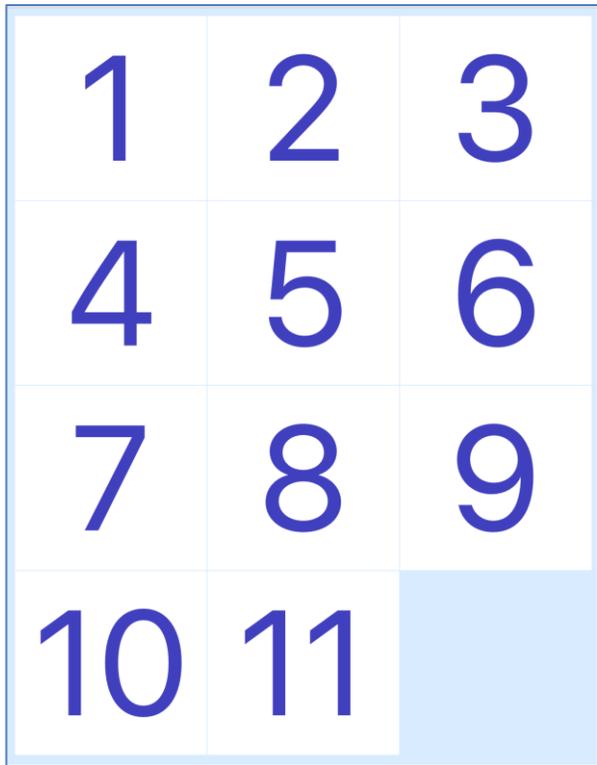
4. Settings view

This view allows you to configure system parameters and settings. From this view you have also access to: [Sync settings view](#), [Help view](#) and [Statistics view](#):

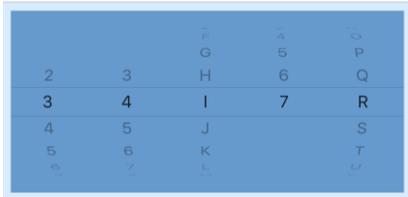


Here is detailed description of controls available from this view:

- Done**
Terminate view and save changes. Instead tapping on button you can use gesture - swipe to the right.
- More**
Terminate view, save changes and go to [More settings view](#).



Visualization of game surface.



Picker for selection of:

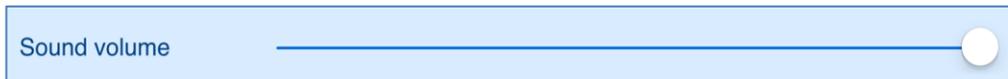
- Game dimensions (first and second selector from left)
- Desktop color (third selector)
- Button surface color (forth selector)
- Button text color (last selector)



Show [Help view](#).



Show [Sync settings view](#)



Volume of sound effects in app.



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

Score = moves + time

Determines if time will be counted as score.

Square buttons

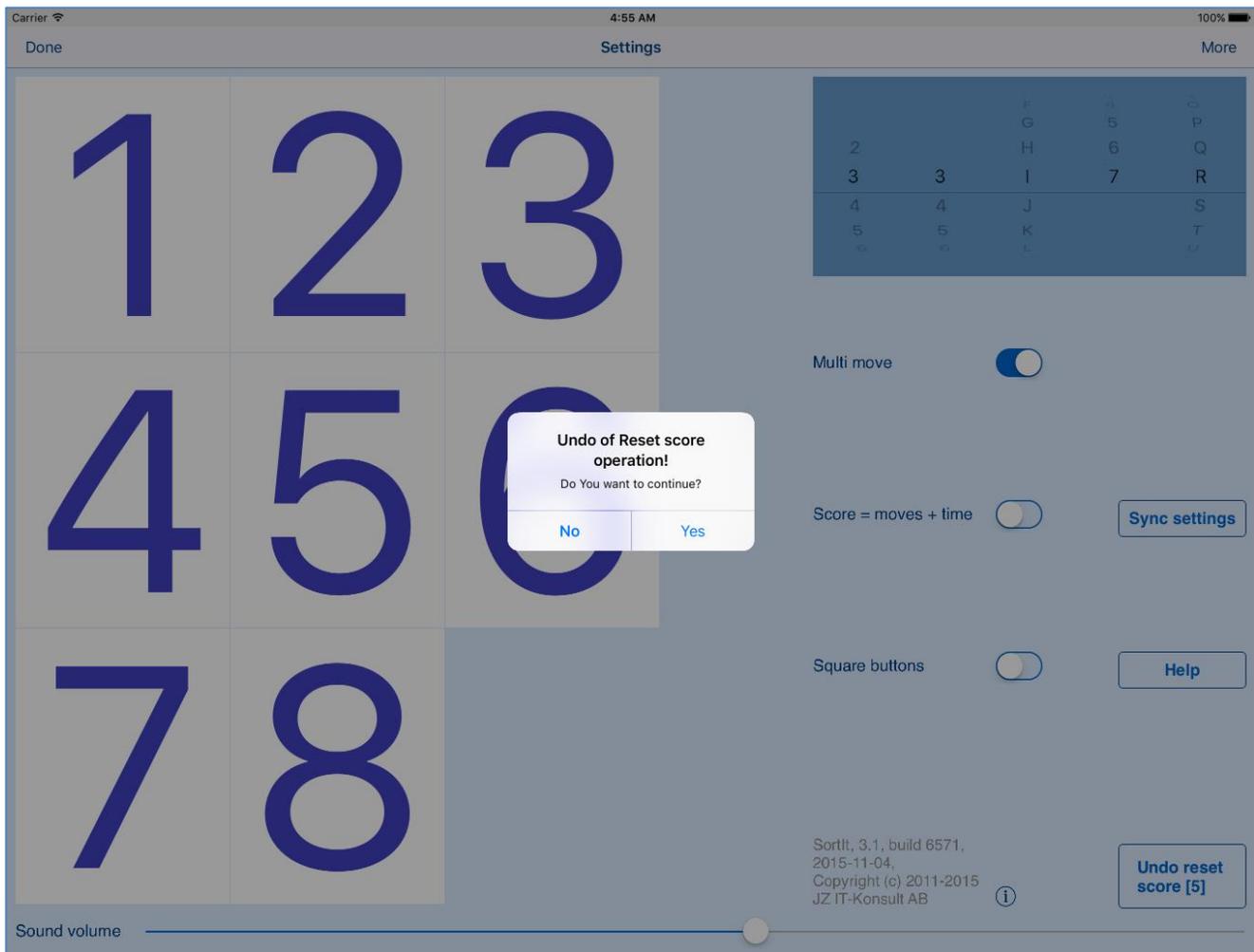
Shape of game buttons: square or rectangular to fill whole game surface.



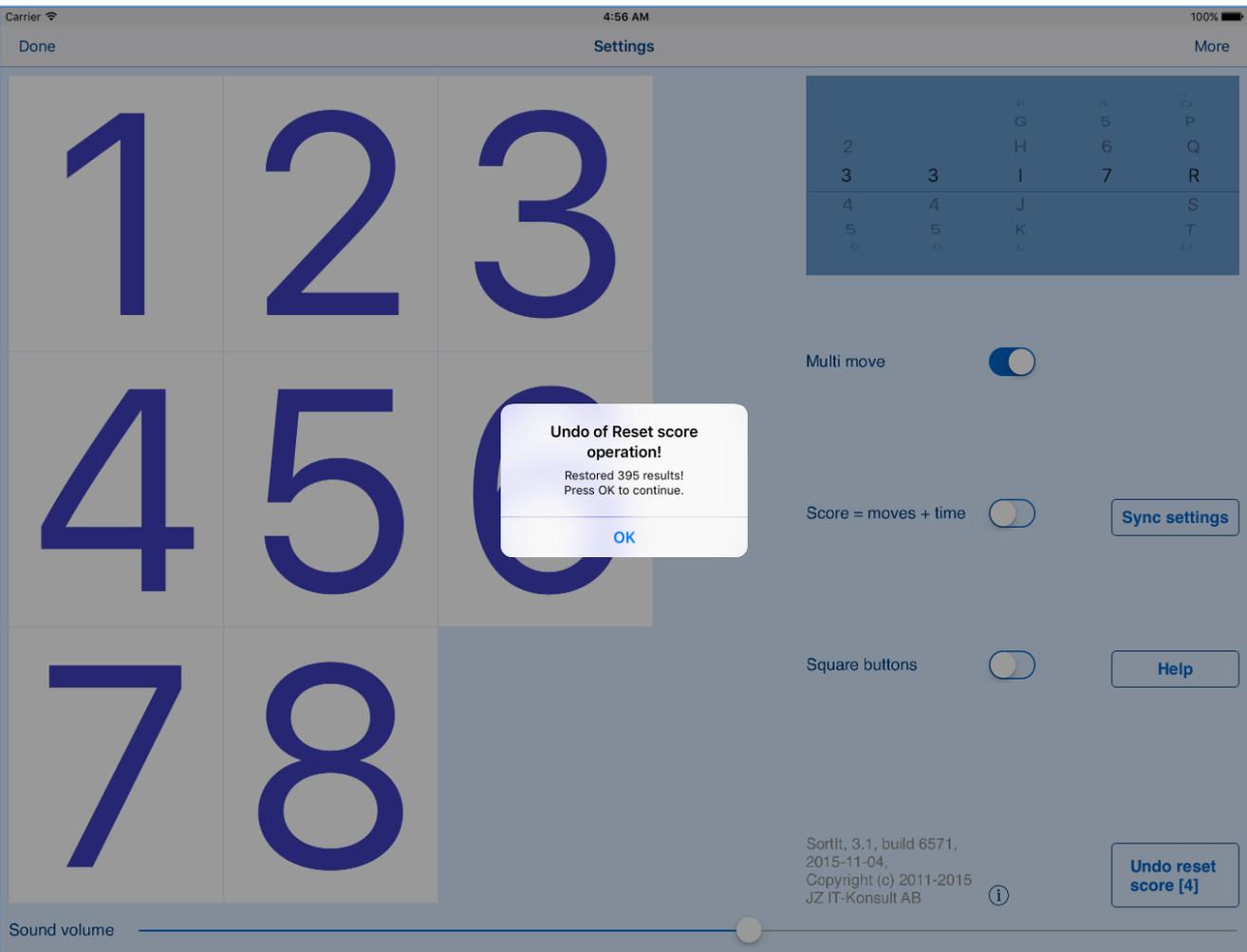
Show [Statistics View](#)

Undo reset score [5]

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



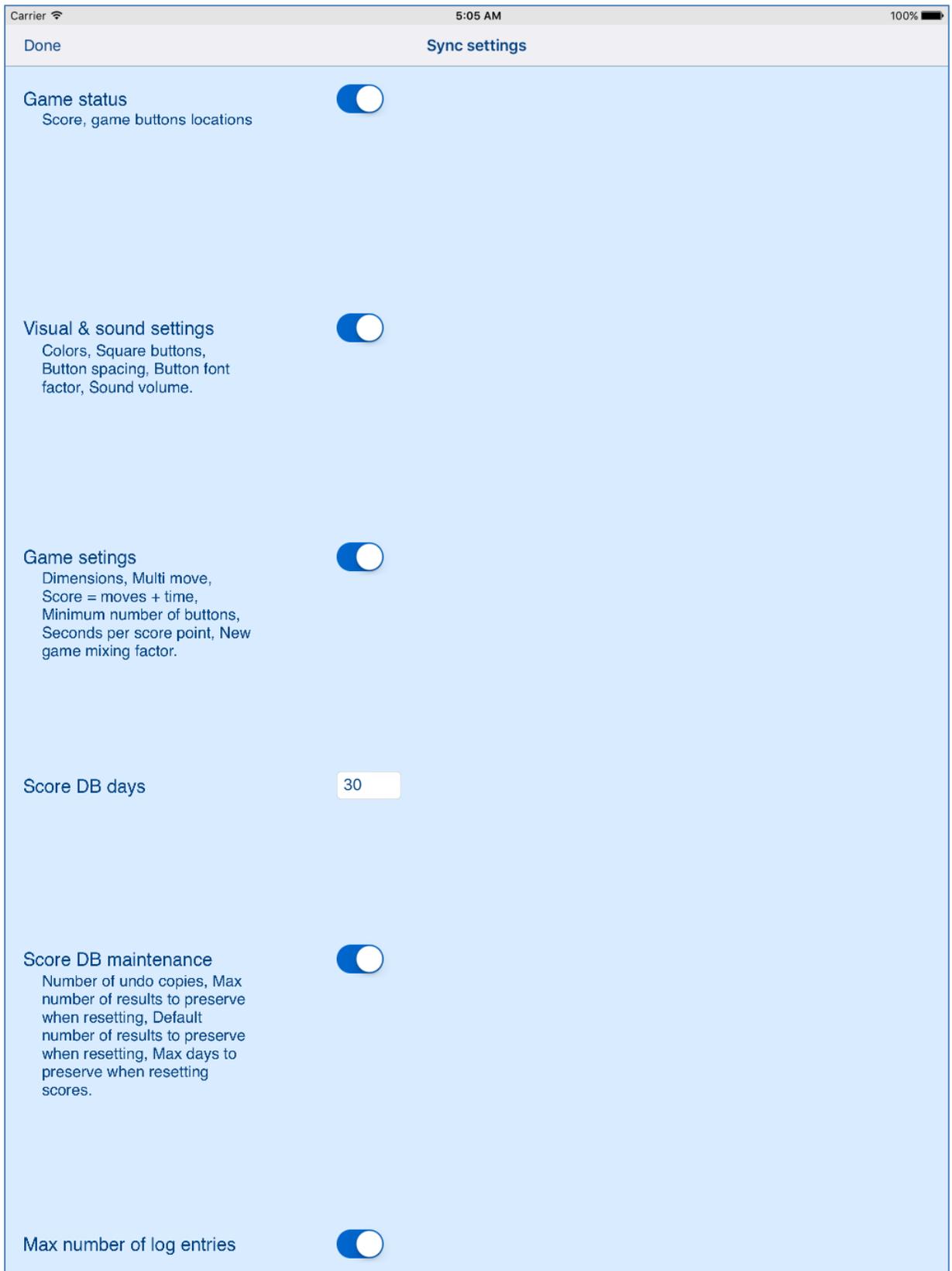
When you answer "Yes" game results removed during previous reset operation will be restored back and information about number of restored scores will be shown:



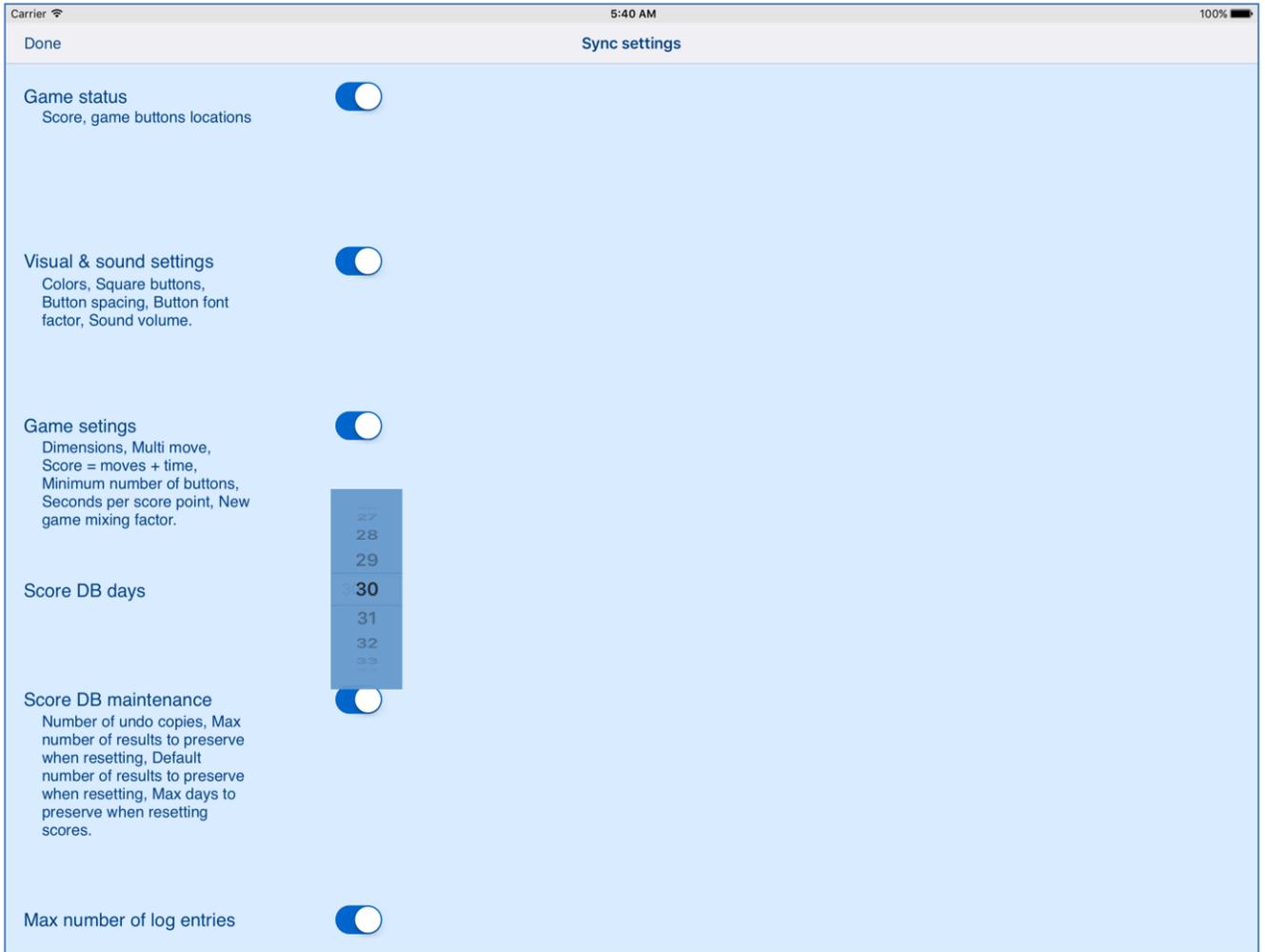
5. Sync settings view

This view is used to configure what data should be synchronized with iCloud.

View looks like this:



or



Here is detailed description of controls available from this view:



Determines if games status:

- Score
- Game buttons locations

will be synchronized with iCloud and restored on all your iOS devices with same iCloud account.

Visual & sound settings
Colors, Square buttons, Button spacing, Button font factor, Sound volume.



Determines if game visual and sound settings:

- Colors
- “Square buttons” setting
- Button spacing
- Button font factor
- Sound volume

will be synchronized with iCloud and restored on all your iOS devices with same iCloud account.

Game settings
Dimensions, Multi move, Score = moves + time, Minimum number of buttons, Seconds per score point, New game mixing factor.



Determines if game settings:

- Dimensions
- “Multi move” setting
- “Moves + time” setting
- Minimum number of buttons
- Sound volume

will be synchronized with iCloud and restored on all your iOS devices with same iCloud account.

Score DB days

31

Dimensions, Multi move, Score = moves + time, Minimum number of buttons, Seconds per score point, New game mixing factor.

28

29

30

Score DB days

31

32

33

Score DB maintenance
Number of undo copies, Max

34

Determines number of “score days” which will be synchronized with iCloud on all devices with same iCloud account:

- “0” – means no synchronization at all
- 31 or other number – determines number of latest days of score which will be synchronized.

To change value - just tap on field and pick new value and tap somewhere.

Score DB maintenance



Number of undo copies, Max number of results to preserve when resetting, Default number of results to preserve when resetting, Max days to preserve when resetting scores.

Determines which DB maintenance settings:

- Number of undo copies
- Max number of results to preserve when resetting
- Default number of results to preserve when resetting
- Max days to preserve when resetting scores

will be synchronized with iCloud and restored on all your iOS devices with same iCloud account.

Max number of log entries



Determines if setting:

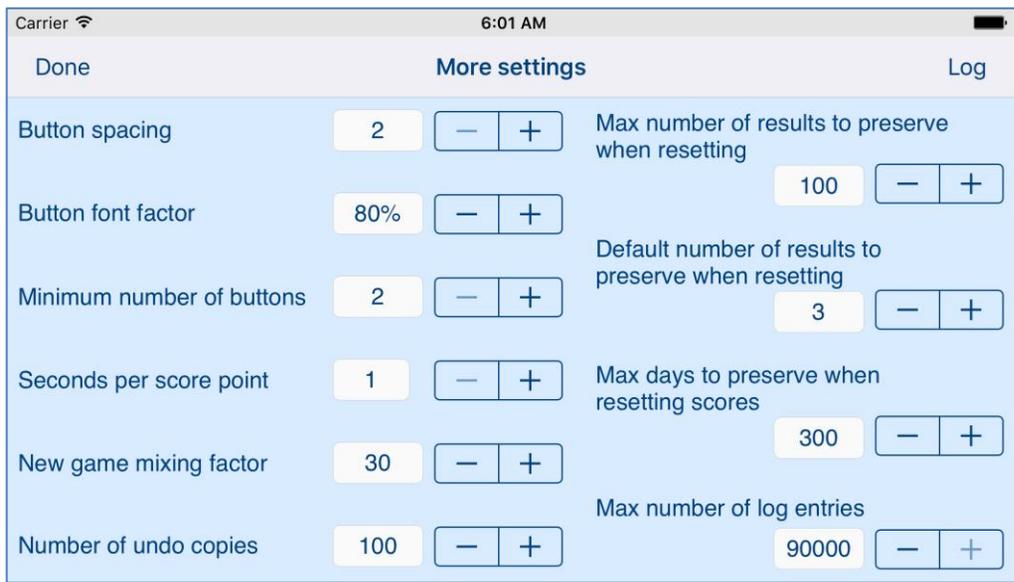
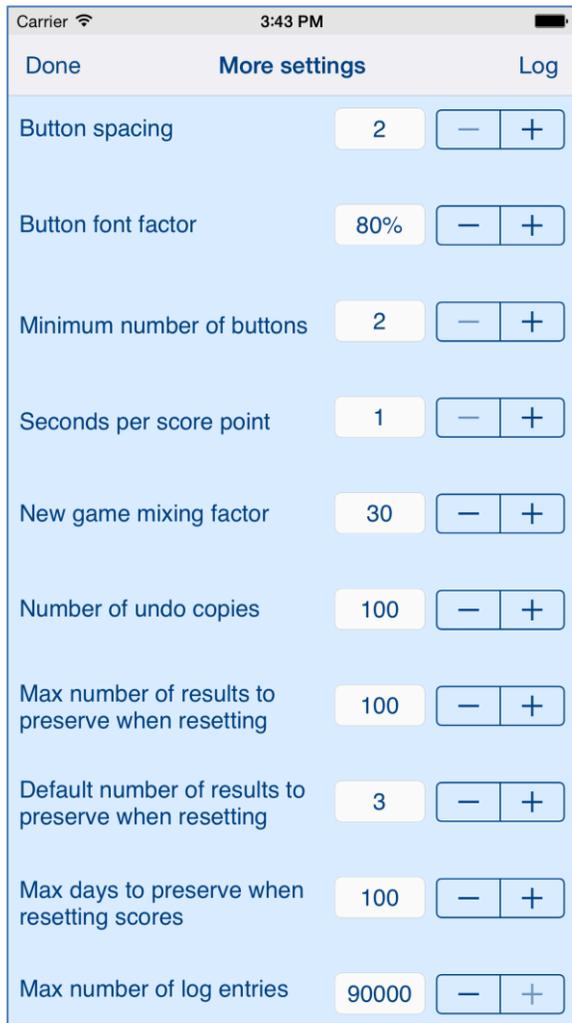
- Max number of log entries

will be synchronized with iCloud and restored on all your iOS devices with same iCloud account.

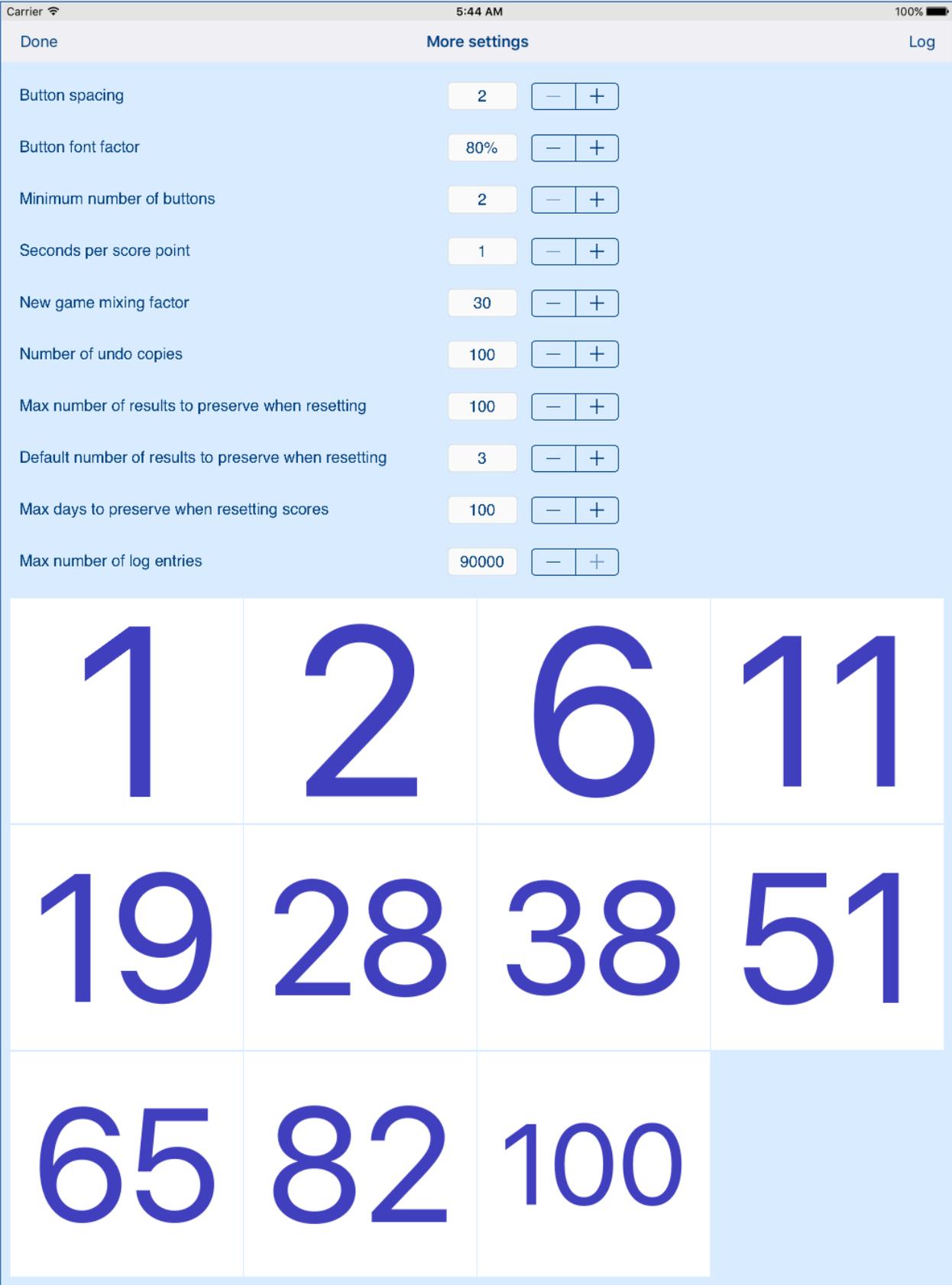
6. More settings view

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

On iPhone view looks like this:



On iPad there is additional part – visualization of game buttons:



Here is detailed description of controls available from this view:

Done

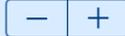
Terminate view and save changes. Instead tapping on button you can use gesture - swipe to the right.

Log

Terminate view, save changes and go to [Log view](#).

Button spacing

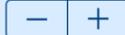
4



Determines space between buttons.

Button font factor

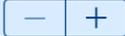
80%



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

Minimum number of buttons

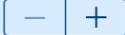
2



Minimum size of game surface.

Seconds per score point

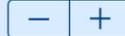
1



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

New game mixing factor

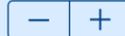
30



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

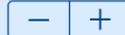
100



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

Max number of results to preserve when resetting

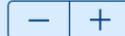
100



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

Default number of results to preserve when resetting

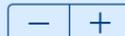
3



Default value of "Results to preserve" in [Reset score view](#).

Max days to preserve when resetting scores

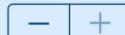
100



Default value of "Older than" in [Reset score view](#).

Max number of log entries

90000



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.

1	2	6	11
19	28	38	51
65	82	100	

Visualization of:

- Button spacing.
- Button font factor

7. Log view

Log view contains list of all system events. Every event might be investigated by activating [Log details view](#).

Carrier	5:47 AM	100%
Done	Log	Details
Q Enter search text		
2015-11-05 05:45:42	INFO: starting Log View	
2015-11-05 05:44:38	INFO: orientation changed to: 'Portrait Upside Down'	
2015-11-05 05:43:23	INFO: orientation changed to: 'Landscape Left'	
2015-11-05 05:43:20	INFO: orientation changed to: 'Portrait'	
2015-11-05 05:43:17	INFO: starting More Settings View	
2015-11-05 05:43:06	INFO: terminating Sync Settings View	
2015-11-05 05:40:07	INFO: orientation changed to: 'Landscape Right'	
2015-11-05 05:40:06	INFO: starting Sync Settings View	
2015-11-05 05:40:02	INFO: starting Settings View	
2015-11-05 05:39:56	INFO: orientation changed to: 'Portrait'	
2015-11-05 05:39:56	INFO: Starting program	
2015-11-05 05:39:55	INFO: Data has been synchronized with iCloud - initial synchronizatuin	
2015-11-05 05:39:55	INFO: openLogDB: OK, database opened:	
2015-11-05 05:39:55	ERROR: Abnormal program termination discovered, resetting status data.	
2015-11-05 05:39:55	ICLOUD-save data:: numberOfButtonsDimension2: 3	
2015-11-05 05:39:55	ICLOUD-save data:: numberOfButtonsDimension1: 3	
2015-11-05 05:39:55	ICLOUD-save data:: numberOfButtonsDimension2: 3	
2015-11-05 05:39:55	ICLOUD-save data:: numberOfButtonsDimension1: 3	
2015-11-05 05:39:55	ICLOUD-restored data::	
2015-11-05 05:39:55	WARNING: LogDB is not opened. Opening LogDB:	
2015-11-05 05:39:55	INFO: openLogDB: OK, database opened:	
2015-11-05 05:06:57	INFO: orientation changed to: 'Portrait'	
2015-11-05 05:06:39	INFO: orientation changed to: 'Landscape Right'	
2015-11-05 05:05:28	INFO: starting Sync Settings View	
2015-11-05 05:05:26	INFO: starting Settings View	
2015-11-05 05:05:25	INFO: terminating Score View	
2015-11-05 05:05:23	INFO: orientation changed to: 'Portrait'	
2015-11-05 05:05:22	INFO: terminating Reset Score View	
2015-11-05 04:59:53	INFO: Score databas has been reseted:	
2015-11-05 04:59:53	ICLOUD-save data:: gameScoresArray.count: 3	
2015-11-05 04:57:39	INFO: starting Reset Score View	
2015-11-05 04:57:36	INFO: starting Score View	
2015-11-05 04:57:34	INFO: terminating Setting View	
2015-11-05 04:57:32	INFO: terminating Sync Settings View	
2015-11-05 04:57:32	ICLOUD-save data:: numberOfButtonsDimension2: 3	
2015-11-05 04:57:32	ICLOUD-save data:: numberOfButtonsDimension1: 3	
2015-11-05 04:57:32	ICLOUD-save data:: numberOfButtonsDimension2: 3	
2015-11-05 04:57:32	ICLOUD-save data:: numberOfButtonsDimension1: 3	
2015-11-05 04:57:32	INFO: 'SyncSettings' saved successfully:	
2015-11-05 04:57:14	INFO: starting Sync Settings View	
2015-11-05 04:56:14	INFO: Undo of Reset score terminated sucessfully:	
2015-11-05 04:56:14	ICLOUD-save data:: gameScoresArray.count: 8	
2015-11-05 04:55:13	INFO: starting Settings View	
2015-11-05 04:54:49	INFO: buttons are re-initialized due to dimension/orientation changes	
2015-11-05 04:54:48	INFO: Data has been synchronized with iCloud - synchronizatiom requested by iCloud	
2015-11-05 04:54:48	ICLOUD-restored data::	
2015-11-05 04:54:47	INFO: terminating Score View	
2015-11-05 04:54:45	INFO: terminating Reset Score View	
2015-11-05 04:53:50	INFO: orientation changed to: 'Landscape Right'	
2015-11-05 04:53:29	INFO: Score databas has been reseted:	
2015-11-05 04:53:29	ICLOUD-save data:: gameScoresArray.count: 3	
2015-11-05 04:52:05	INFO: orientation changed to: 'Portrait'	
2015-11-05 04:51:00	INFO: starting Reset Score View	

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:

Done

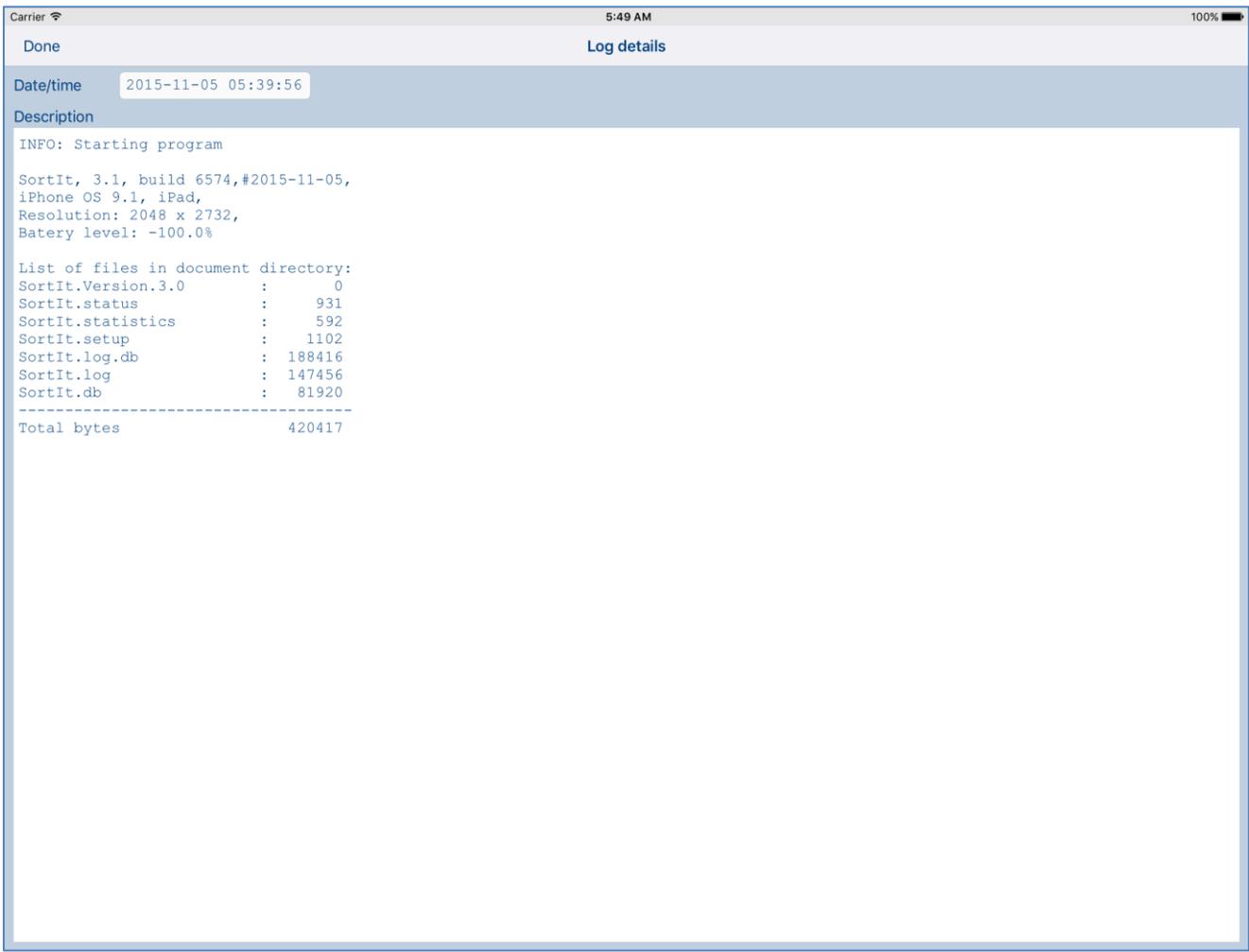
Terminate view. Instead tapping on button you can use gesture - swipe to the right.

Details

Terminate view and go to [Log details view](#).

8. Log details view

View shows details of log event.

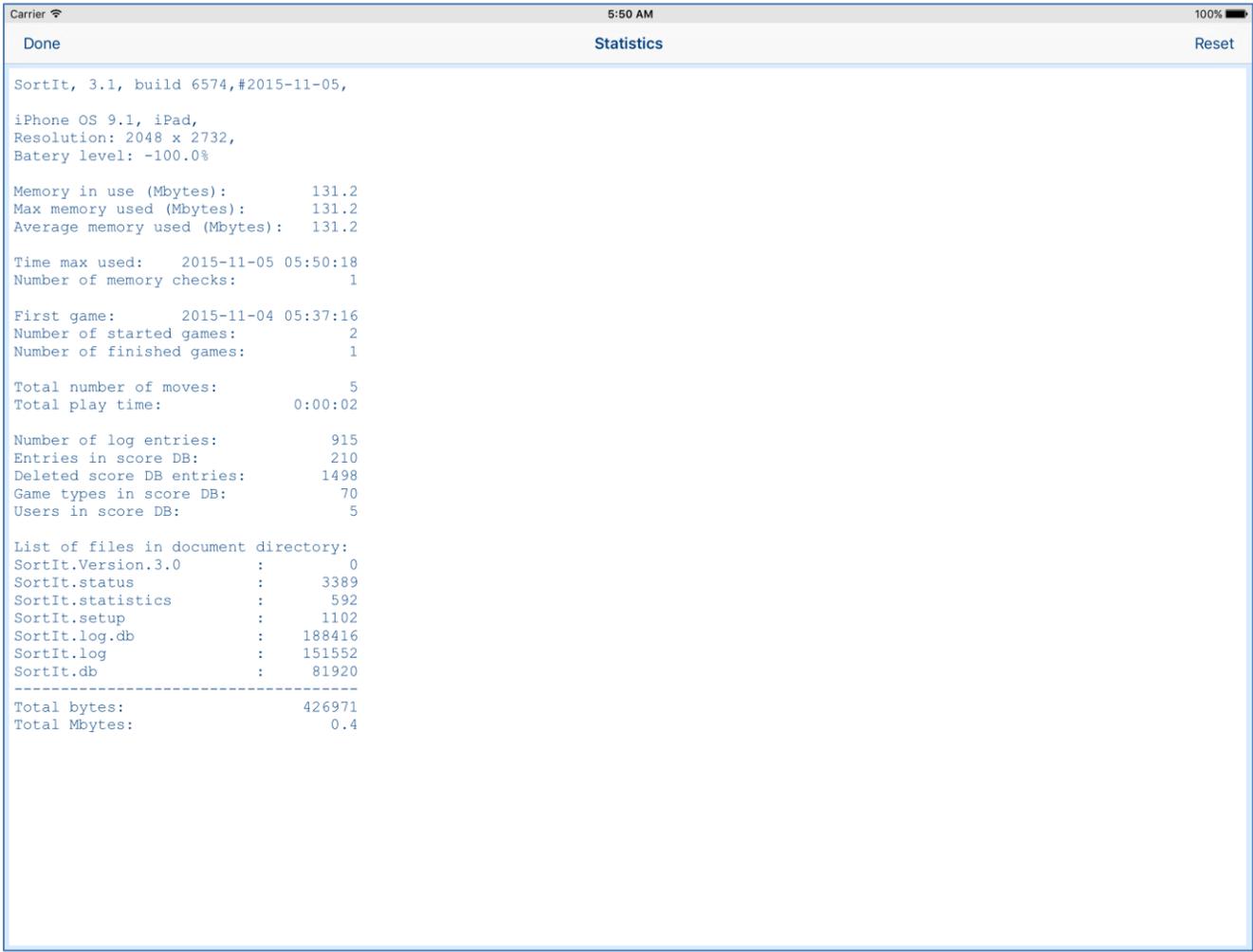


Controls available from this view:

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

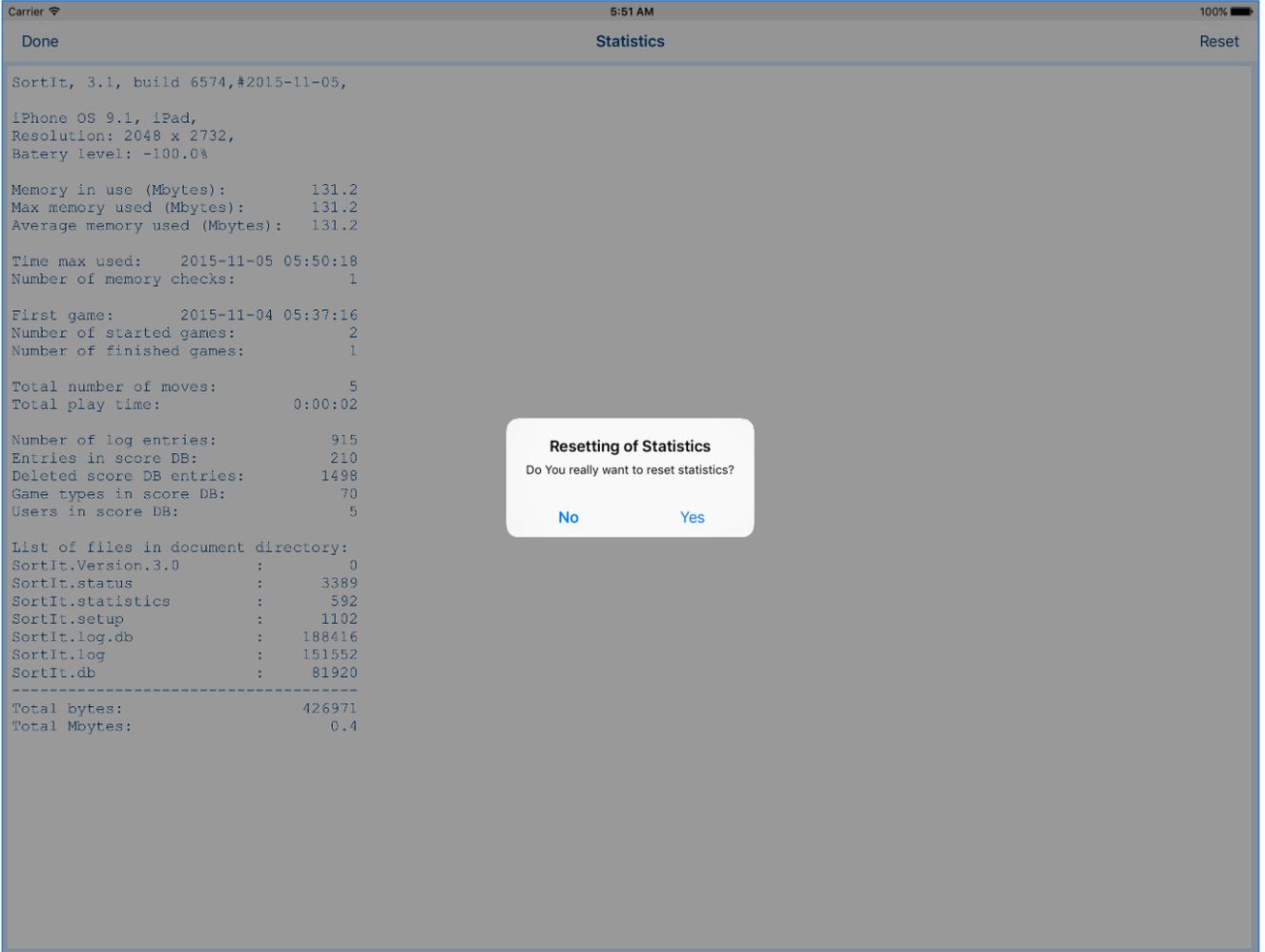
9. Statistics view

This view shows some statistics about usage of app:



Here is detailed description of controls available from this view:

Done
Terminate view. Instead tapping on button you can use gesture - swipe to the right.
Reset
Reset statistics. When tapped the following will be shown:



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

10. 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.

Done	Score	Reset
2013-09-18 15:44:45		
3 John		501
2013-09-18 15:46:08		
3 x 2		
1 George		228
2013-09-18 15:53:55		
2 Anna		229
2013-09-18 15:54:22		
3 John		230
2013-09-18 15:54:49		
3 x 3		
1 Paula		11
2013-11-08 21:35:50		
2 Paula		11
2013-11-08 21:20:00		
3 Paula		11
2013-11-08 20:44:42		
4 Sofie		29
2015-11-05 05:55:33		
3 x 4		
1 George		63
2013-03-20 23:17:53		
2 George		63
2013-03-20 23:01:47		
3 George		63
2013-03-20 22:26:33		
3 x 5		
1 George		171
2013-04-14 18:06:55		
2 George		171
2013-04-14 17:15:43		
3 George		210
2013-03-20 22:22:39		

Here is detailed description of controls available from statistics view:

Done

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

Reset

Opens "[Reset score view](#)".

11. Reset score view

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

Carrier 4:52 AM 100%

Done **Reset score** Reset

Results to preserve

Older than days

User

Game type

Results to preserve	Older than days	User	Game type
1			
2			
3	n/a	All users	All
4	0	Anna	2 x 2
5	1	Benjamin	2 x 3
6	2	Eva	2 x 1

Here is detailed description of controls available from statistics view:

Done

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

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	Eva	2 x 3
6	2	George	2 x 4

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.

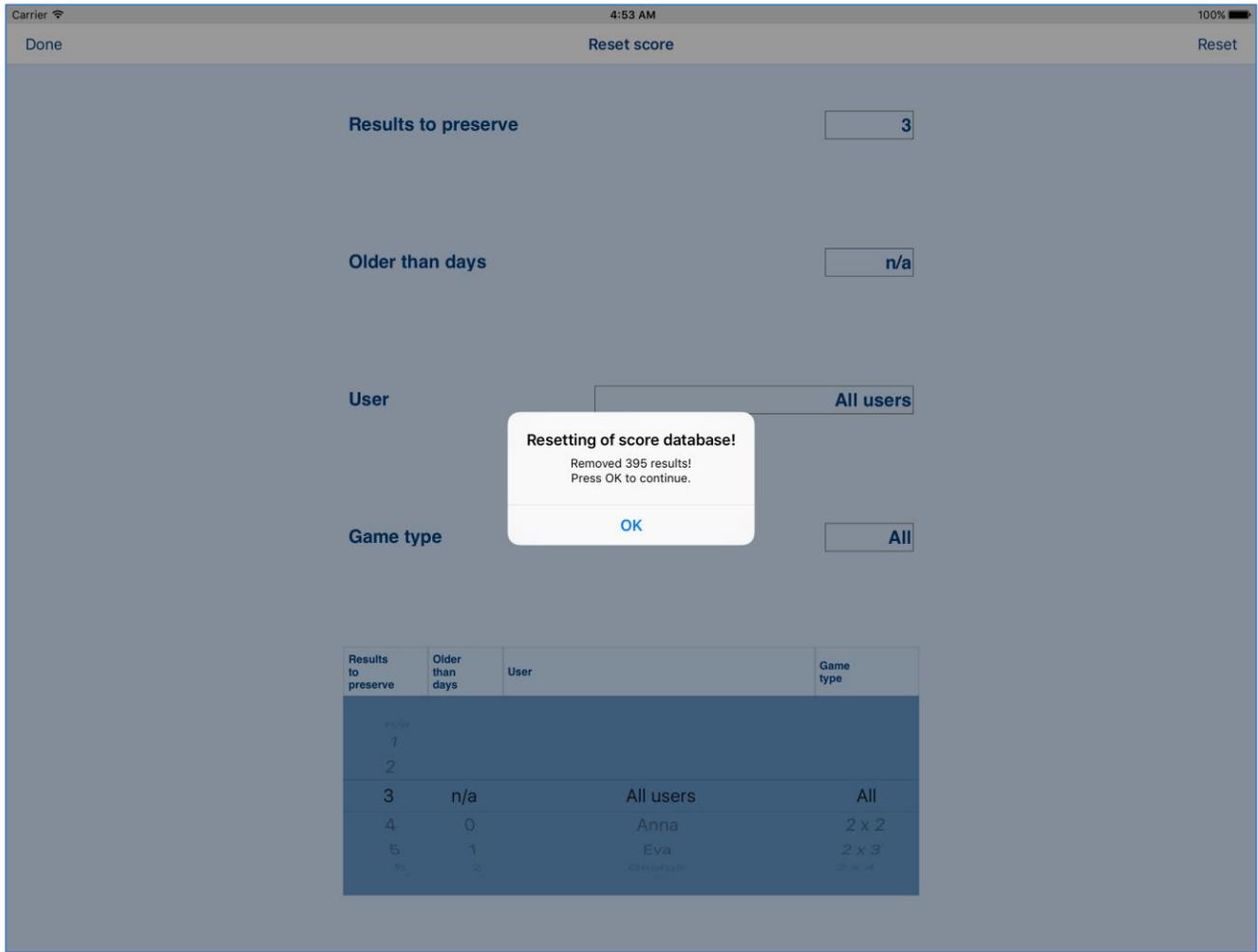
“Game type” – remove results for all game types or only for selected type.

Reset

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

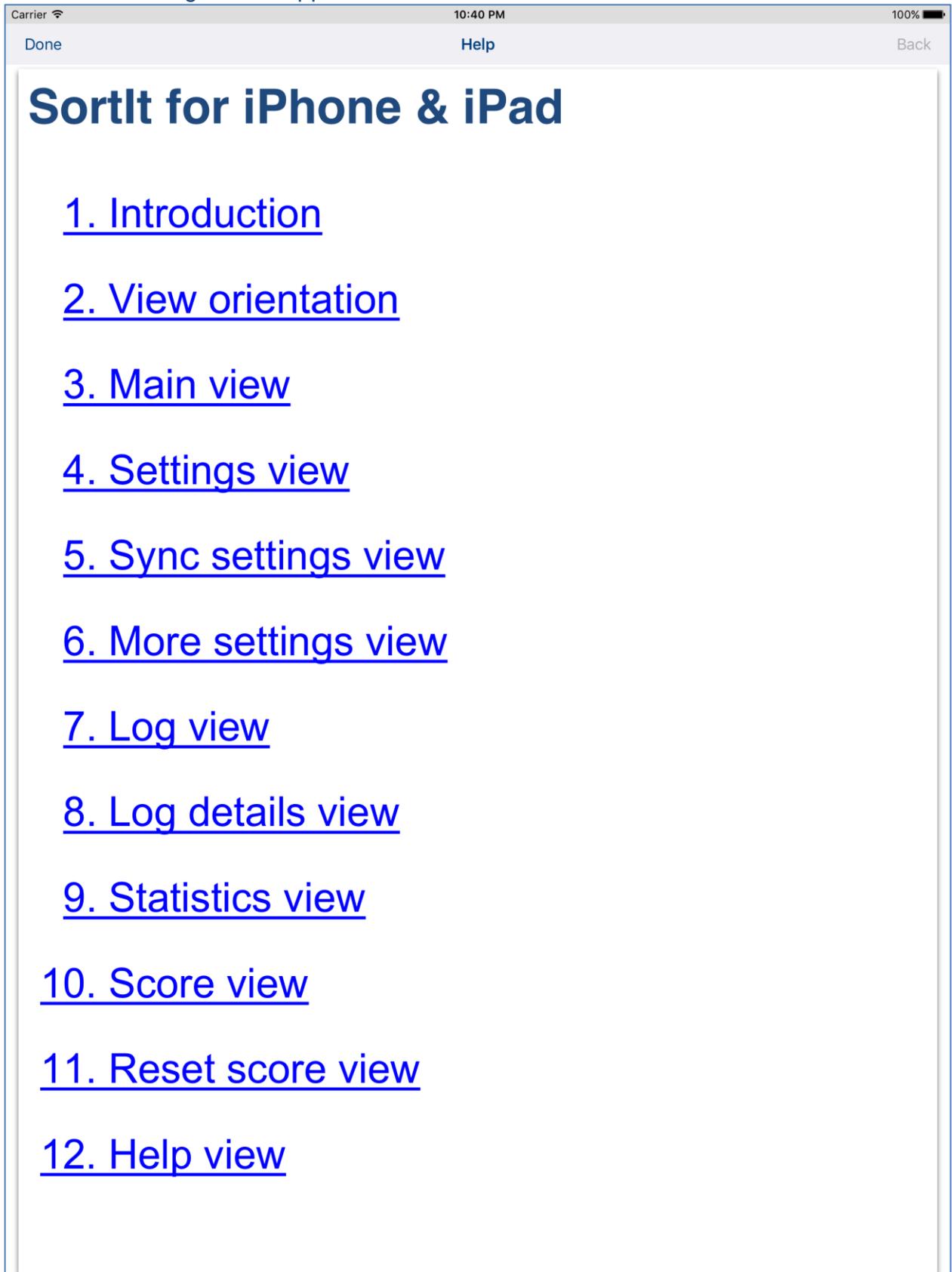
The screenshot shows an iOS app interface with a title bar 'Reset score' and a 'Done' button on the left and a 'Reset' button on the right. The main content area contains a picker with four sections: 'Results to preserve' (set to 3), 'Older than days' (set to n/a), 'User' (set to All users), and 'Game type' (set to All). A white modal dialog is displayed in the center, titled 'Resetting of score database!' with the question 'Do You really want to do this?' and two buttons: 'No' and 'Yes'. At the bottom of the screen, a table is visible, which is a duplicate of the table shown in the first image, but with the 'User' column containing 'Benjamin' for the row with 'Game type' '2 x 3'.

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



12. Help view

This view shows user guide for app.



The only controls available here are:

Done

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 tapping "Back" button.

Tapping "Done" button will always terminate Help view.

Back

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 tapping "Back" button.