

Test cases

Test case 1

Test Execution date: 14/02/2013

Description

To check whether the app can play notes when click hexagonal tiles.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Open the application	Should display the hexagon grid.			Pass	
2	Click on a hexagonal tile	Should play a note	The node is (10,7)Note =60		Pass	Note =60 is Note C Octave 5
3	Click on another hexagonal tile	Should play a different note	The node is (10,5)Note =74		Pass	Note =74 is Note D Octave 6

Test case 2

Test Execution date: 18/02/2013

Description

To check whether the app has successfully implemented the Harmonic Table

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Click on a hexagonal tile	Should play a note	The node is (1,7) Note =52		Pass	Note =52 is Note E Octave 4
2	Click the above hexagonal tile	Should play a different note which increases the pitch by a 5th of the previous tile.	The node is (1,6) Note =59		Pass	Note =59 is Note B Octave 4

						Compared the MIDI notes with Harmonic Table Note Map The note B4 is a 5th above the note E4
3	Click on the next hexagonal tile above.	Should play a different note which increases the pitch by a 5th of the second note	The node is (1,5) Note =66		Pass	Note =66 is Note F# Octave 5 The note F#5 is a 5th above the note B4
4	Click on a hexagonal tile north east of the previous tile.	Should play a different note which is a major third above the starting note	The node is (2,5) Note =70		Pass	Note =70 is Note A# Octave 5 The note A#5 is a major third above the note F#5
5	Click on a hexagonal tile south east of the previous tile.	Should play a different note which increases the pitch by a semitone of the horizontal left one	The node is (3,5) Note =67		Pass	Note =67 is Note G Octave 5 The note G5 raises in pitch by one semitone of the note F#5

Reference: 1.Note Layout: Coloured Octave Map http://www.c-thru-music.com/cgi/?page=layout_octaves

2. MIDI Note Numbers for Different Octaves http://www.midimountain.com/midi/midi_note_numbers.html

Test case 3

Test Execution date: 16/02/2013

Description

To check whether the play tile can start the sequencer and send a pulse in a certain direction.

Pre-conditions for the test case

The application can be implemented. The global 'start' button can start the playhead.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Click the blue "play" tile and then place	Should display a grey "play" tile on top of	The node is (9,4)		Pass	

	on a hexagonal tile.	the hexagonal tile				
2	Click the “start” button.	Should play a note and display a blue light from the hexagonal tile to the top of the grid.	Note =77 The direction is 0 The node is (9,3) The node is (9,2) The node is (9,1) The node is (9,0)		Pass	Note =77 is Note F Octave 6 The blue light indicates a pulse
3	Click the orange “play” tile and then place on a hexagonal tile.	Should display a dark grey “play” tile on the hexagonal tile	The node is (11,5)		Pass	The orange ‘Operator tiles’ won’t play any notes.
4	Click the “start” button.	Should display blue light above the hexagonal tile.	The direction is 0 The node is (11,5) The node is (11,4) The node is (11,3) The node is (11,2) The node is (11,1) The node is (11,0)		Pass	

Test case 4

Test Execution date: 17/02/2013

Description

To check whether *the “stop” tile can stop the sequence in that direction.*

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Click the blue “play” tile and then place on a hexagonal tile.	Should display a grey “play” tile on the hexagonal tile	The node is (12,4)		Pass	
2	Click the blue “stop” tile and then place on a hexagonal tile making sure it is in the same direction as the first tile.	Should display a grey “stop” tile on the second hexagonal tile	The node is (12,2)		Pass	
3	Click the “start” button.	Should play a note on the first tile, display a blue light from it to the second tile and then play another note on the second tile.	Note = 82 The direction is 0		Pass	Note =82 is Note A# Octave 6

			The node is (12,4) The node is (12,3) Note = 96 The node is (12,2)			
4	Click the orange “play” tile and then place on a hexagonal tile.	Should display a dark grey “play” on the hexagonal tile		The node is (9,6)	Pass	
5	Click the orange “stop” tile and then place it in a hexagonal tile on the same path as the previous tile.	Should display a dark grey “stop” tile on the hexagonal tile		The node is (9,4)	Pass	
6	Click the “start” button.	Should display a blue light from the dark grey play tile to the dark grey stop tile		The direction is 0 The node is (9,6) The node is (9,5) The node is (9,4)		

Test case 5

Test Execution date: 16/02/2013

Description

To check whether the “rotate” button can change the direction of the “play” and “change” tiles in the hexagonal grid.

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Click the blue “play” tile and then place on a hexagonal tile.	Should display a grey “play” button on the hexagonal tile which points upwards	The node is (10,6)		Pass	The default direction of the operator tiles is upwards

						(which direction=0)
2	Click the "start" button.	Should play a note and display a blue light from the hexagonal tile to the top of the grid.	Note=104 Note = 67 The direction is 0 The node is (10,6) The node is (10,5) The node is (10,4) The node is (10,3) The node is (10,2) The node is (10,1) The node is (10,0)		Pass	Note =104 is Note G# Octave 8
3	Click on the "rotate" button and then click three times on the previous tile. Finally, click the "rotate" button again to finish rotating.	The grey "play" button points downwards	The node is (10,6)		Pass	
4	Click "start" button.	Should play a note and display blue light from the hexagonal tile to the bottom	Note = 67 The direction is 3 The node is (10,6) The node is (10,7)		Pass	Note =67 is Note G Octave 5 The "change" tile's direction can also be changed successfully. The tests are quite similar and would not be shown here.

Test case 6

Test Execution date: 20/02/2013

Description

To check whether the "change" tile can change the direction of the pulse

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Click the blue "play" tile and then place on a hexagonal tile.	Should display a grey "play" button on the hexagonal tile	The node is (12,4)		Pass	
2	Click the blue "change" tile and then click a hexagonal tile which is in the same path as the first tile	Should display a grey "change" tile which points upwards on the second hexagonal tile	The node is (12,2)		Pass	The "change" tile looks like an arrow
3	Click on the "rotate" button and then click once on the previous hexagonal tile. Click the "rotate" button again to finish rotating.	The hexagonal tile with a grey "change" should point north east	The node is (12,2)		Pass	
4	Click "start" button.	Should play a note at the first tile, display a blue light from it to the second tile and play another note at the second tile. Then display a blue light to the upper right. The blue light should disappear when it reaches the edge of the hexagonal grid.	Note =82 The direction is 0 The node is (12,4) Now the direction is 0 The node is (12,3) Note =96 The direction is 1 The node is (12,2) Now the direction is 1 The node is (13,1) Now the direction is 1 The node is (14,1) Now the direction is 1 The node is (15,0) Now the direction is 1 The node is (16,0)		Pass	Note =82 is Note A# Octave 6 Note = 96 is Note C Octave 8

Test case 7

Test Execution date: 20/02/2013

Description

To check whether the "explode" tile can split the pulse and expand it in every direction

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Pass/Failed	Comments
1	Click the blue “play” tile and then place on a hexagonal tile.	Should display a grey “play” tile on the hexagonal tile	The node is (10,6)	Pass	
2	Click the blue “explode” tile and then place on a hexagonal tile in the same path as the previous tile	Should display a grey “explode” tile on the second hexagonal tile	The node is (10,3)	Pass	
3	Click “start” button.	Should play a note and display blue light from the first tile to the second tile. Then should play a different note then the second tile and display blue lights from the second tile to all directions except the opposite direction of the first tiles’.	<p>Note =67</p> <p>The direction is 0</p> <p>The node is (10,6)</p> <p>Now the direction is 0</p> <p>The node is (10,5)</p> <p>Now the direction is 0</p> <p>The node is (10,4)</p> <p>Note =88</p> <p>The node is (10,3)</p> <p>Now the direction is 0</p> <p>The node is (10,2)</p> <p>Now the direction is 1</p> <p>The node is (11,2)</p> <p>Now the direction is 2</p> <p>The node is (11,3)</p> <p>Now the direction is 4</p> <p>The node is (9,3)</p> <p>Now the direction is 5</p> <p>The node is (9,2)</p> <p>Now the direction is 0</p> <p>The node is (10,1)</p> <p>Now the direction is 1</p> <p>The node is (12,2)</p> <p>Now the direction is 2</p>	Pass	<p>After “explode”</p> <p>In the direction 0, the path of the pulse is (10,3)-> (10,2)-> (10,1)-> (10,0)</p> <p>In the direction 1, the path of the pulse is (10,3)-> (11,2)-> (12,2)-> (13,1)-> (14,1)-> (15,0)-> (16,0)</p> <p>In the direction 2, the path of the pulse is (10,3)-> (11,3)-> (12,4)-> (13,4)-> (14,5)-> (15,5)-> (16,6)</p> <p>In the direction 4, the path of the pulse is (10,3)-> (9,3) -> (8,4) -> (7,4) -> (6,5) -> (5,5) -> (4,6) -> (3,6) -> (2,7) -> (1,7)</p> <p>In the direction 5, the path of the pulse is (10,3)-> (9,2) -> (8,2) -> (7,1) -> (6,1) -> (5,0) -> (4,0)</p>

			<p>The node is (12,4) Now the direction is 4 The node is (8,4) Now the direction is 5 The node is (8,2) Now the direction is 0 The node is (10,0) Now the direction is 1 The node is (13,1) Now the direction is 2 The node is (13,4) Now the direction is 4 The node is (7,4) Now the direction is 5 The node is (7,1) Now the direction is 1 The node is (14,1) Now the direction is 2 The node is (14,5) Now the direction is 4 The node is (6,5) Now the direction is 5 The node is (6,1) Now the direction is 1 The node is (15,0) Now the direction is 2 The node is (15,5) Now the direction is 4 The node is (5,5) Now the direction is 5 The node is (5,0) Now the direction is 1 The node is (16,0) Now the direction is 2 The node is (16,6) Now the direction is 4 The node is (4,6) Now the direction is 5</p>		
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			The node is (4,0) Now the direction is 4 The node is (3,6) Now the direction is 4 The node is (2,7) Now the direction is 4 The node is (1,7)		
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Test case 8

Test Execution date:22 /02/2013

Description

To check whether the warp tile can spawn new playheads at each other warp tile placed on the grid, moving in the direction of entry when it meets a playhead.

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Pass/Failed	Comments
1	Click the blue "play" tile and then place on a hexagonal tile.	Should display a grey "play" tile on the hexagonal tile	The node is (8,5)	Pass	
2	Click the "warp" tile and then place on hexagonal tile in the same path as the first tile	Should display a black "warp" tile on the second hexagonal tile	The node is (8,3)	Pass	
3	Click the "warp" tile again and place on another hexagonal at a	Should display a black "warp" tile on the third hexagonal tile	The node is (6,1)	Pass	

	random position				
4	Repeat the previous step	Should display a purple “warp” button on the fourth hexagonal tile	The node is (16,4)	Pass	
5	Click “start” button.	Should play a note at the first tile, display a blue light from it to the second tile and the blue light stops at the black warp tile. Then it should display blue lights from other warp tiles in the same direction as the first warp tile.	Note =73 The direction is 0 The node is (8,5) Now the direction is 0 The node is (8,4) Warp tile in contact with: 0 Warp tile, ID: 1 Warp tile, ID: 3 The node is (8,3) Now the direction is 0 The node is (6,0) Now the direction is 0 The node is (16,3) Now the direction is 0 The node is (16,2) Now the direction is 0 The node is (16,1) Now the direction is 0 The node is (16,0)	Pass	Note =73 is Note C# Octave 6 The direction of the pulse is 0 (upwards) The path of the pulse: (8,5)-> (8,4) -> (8,3) Then the warp tile sends the pulse to the other warp tiles. The path of the pulse now: (6,1)-> (6,0) -> Another one: (16,4)-> (16,3) -> (16,2) -> (16,1) -> (16,0) The direction of the pulse won’t change after spawned by the warp tile

Test case 9

Test Execution date: 20/02/2013

Description

To test whether the global ‘stop’ button can successfully stop the playhead.

P-conditions for the test case

The application can be implemented. The global ‘start’ button can start the playhead.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Pass/Failed	Comments
1	Click the blue “play” tile and then place on a hexagonal tile.	Should display a grey “play” tile on the hexagonal tile	The node is (12,4)	Pass	
2	Click the blue “change” tile and then place on hexagonal tile which is In the same path as the first tile	Should display a grey “change” tile which points north of the second hexagonal tile	The node is (12,2)	Pass	The “change” tile looks like an arrow
3	Click on the “rotate” button and then place it on the hexagonal tile which contains the grey “change” tile. Click the “rotate” button again to finish rotating.	The hexagonal tile with a grey “change” should point north east	The node is (12,2)	Pass	
4	Click the blue “change” tile and then place on hexagonal tile in the same path as the second.	Should display a grey “change” tile which points north of the third hexagonal tile	The node is (14,1)	Pass	
6	Click on the “rotate” button and then click four times on the third hexagonal. Click the “rotate” button again to finish rotating.	The third hexagonal tile with a grey “change” should point south west which is the opposite direction of the previous “change” tile.	The node is (14,1) The node is (14,1) The node is (14,1) The node is (14,1)	Pass	
7	Click “start” button.	Should play a note at the first tile, display a blue light from it to the second tile and play another note at the second tile. Then display a blue light to the third tile. Should play a note at the third tile and the blue light goes back to the previous tile. There is a cycle between the two tiles, always play these two notes one after another and never stop	Note =82 The direction is 0 The node is (12,4) Now the direction is 0 The node is (12,3) [Note =96 The direction is 1 The node is (12,2) Now the direction is 1 The node is (13,1) Note =104 The direction is 4 The node is (14,1) Now the direction is 4 The node is (13,1)] Note =96 The direction is 1 The node is (12,2) Now the direction is 1 The node is (13,1)	Pass	Note =82 is Note A# Octave 6 Note =96 is Note C Octave 8 Note =104 is Note G# Octave 8

			Note =104 The direction is 4 The node is (14,1) Now the direction is 4 The node is (13,1) ... The data in [] are repeated.		
8	Click global "stop" button.	Should stops the playhead, the blue light and the sound are all disappeared. There are only three grey operator tiles in the hexagonal grid.	Stops the repeated data.	Pass	

Test case 10

Test Execution date: 23/02/2013

Description

To test whether 'delete' button can remove tiles when it is pressed.

Pre-conditions for the test case

The application can be implemented. The global 'start' button can start the playhead.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Click the blue "play" tile and then place on a hexagonal tile.	Should display a grey "play" tile on the hexagonal tile	The node is (10,2)		Pass	
2	Click "start" button.	Should play a note and display blue light from the hexagonal tile to the top	Note =95 The direction is 0 The node is (10,2) Now the direction is 0 The node is (10,1) Now the direction is 0 The node is (10,0)		Pass	

3	Click the 'delete' button and then click the hexagonal tile with the grey 'play' . Click the 'delete' button again to release the button.	The grey "play" tile should disappear.	The node is (10,2)		Pass	
4	Click "start" button.	Should display nothing.	Now the direction is 0 The node is (10,2) Now the direction is 0 The node is (10,1) Now the direction is 0 The node is (10,0)	Display blue light from the hexagonal tile to the top.	failed	The playhead haven't been deleted completely. The other operator tiles are also been tested which are not showed here for the similar processes, but they can be deleted successfully. this start node was not set to null purposefully to be able to start the grid with a n explode tile.

Test case 11

Test Execution date: 24/02/2013

Description

To test whether the 'clear' button can successfully remove all the tiles from a grid.

Pre-conditions for the test case

The application can be implemented. The global 'start' button can start the playhead.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Click the blue "play" tile and then place on a hexagonal tile.	Should display a grey "play" tile on the hexagonal tile	The node is (13,2)		Pass	
2	Click the blue "change" tile and then place on a hexagonal tile in the same path as the first tile.	Should display a grey "change" tile which points north of the second hexagonal tile	The node is (13,1)		Pass	The "change" tile looks like an arrow
3	Click on the "rotate" button and	The hexagonal tile with a grey	The node is (13,1)			

	then click once on the hexagonal tile which contains the grey "change" tile. Click the "rotate" button again to finish rotating.	"change" should point north east				
4	Click "start" button.	Should play a note at the first tile, display a blue light from it to the second tile and play another note at the second tile. Then display a blue light to the north east. The blue light should disappear when it reaches the edge of the hexagonal grid.	Note =93 The direction is 0 The node is (13,2) Note =100 The direction is 1 The node is (13,1) Now the direction is 1 The node is (14,1) Now the direction is 1 The node is (15,0) Now the direction is 1 The node is (16,0)		Pass	
5.	Click the global clear button.	The grey "play" tile and grey "change" should disappear.			Pass	
6	Click "start" button.	Should display nothing.	Now the direction is 0 The node is (13,2) Now the direction is 0 The node is (13,1) Now the direction is 0 The node is (13,0)	Display blue light from the hexagonal tile where the grey 'play' button used to be to the top.	failed	The change tile has been deleted. But the playhead created by the 'play' tile hasn't been deleted completely. The other operator tiles have also been tested which are not shown here for the similar processes, but they can be deleted successfully.

Scenario after Debugging

Step No	Step Description	Expected Result	Example Test Data	Pass/Failed	Comments
1	Click the blue "play" tile and then place on a hexagonal tile.	Should display a grey "play" tile on the hexagonal tile	The node is (13,2)	Pass	
2	Click the blue "change" tile and then place on a hexagonal tile in the same path as the first tile.	Should display a grey "change" tile which points north of the second hexagonal tile	The node is (13,1)	Pass	The "change" tile looks like an arrow
3	Click on the "rotate" button and then click once on the hexagonal tile which contains the grey "change" tile. Click the "rotate" button again to finish rotating.	The hexagonal tile with a grey "change" should point north east	The node is (13,1)		
4	Click "start" button.	Should play a note at the first tile, display a blue light from it to the second tile and play another note at the second tile. Then display a blue light to the north east. The blue light should disappear when it reaches the edge of the hexagonal grid.	Note =93 The direction is 0 The node is (13,2) Note =100 The direction is 1 The node is (13,1) Now the direction is 1 The node is (14,1) Now the direction is 1 The node is (15,0) Now the direction is 1 The node is (16,0)	Pass	
5.	Click the global clear button.	The grey "play" tile and grey "change" should disappear.		Pass	
6	Click "start" button.	Should display nothing.		Pass	The debugging process is to set the start node to null.

Test case 12

Test Execution date: 25/02/2013

Description

To check whether undo button can cancel the last operation and redo button can recover the operation which is undone.

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Pass/Failed	Comments
1	Click the blue “play” tile and then place on a hexagonal tile.	Should display a grey “play” tile on the hexagonal tile	The node is (7,4)	Pass	
2	Click the blue “stop” tile and then place on a hexagonal tile	Should display a grey “stop” tile on the second hexagonal tile	The node is (10,2)	Pass	
3	Click the orange “change” tile and then place on a hexagonal tile	Should display a dark grey “change” tile on the third hexagonal tile	The node is (12,5)	Pass	The "change" tile looks like an arrow
4	Click the orange “explode” tile and then place on a hexagonal tile	Should display a dark grey “explode” tile on the 4th hexagonal tile	The node is (5,4)		
5	Click the purple “warp” tile and then place on a hexagonal tile	Should display a purple “warp” tile on the 5th hexagonal tile	The node is (8,3)		

6	Click the undo button five times	The 5 hexagonal tiles should disappear from the 5th to the first one by one.	Undo Removing warp Undo Undo Undo Undo	pass	The orange “play” tile, orange “stop” tile, blue “change” tile, blue “explode” tile can all pass the tests.
7	Click the redo button five times	The 5 hexagonal tiles should display again from the first to the 5th one by one and their positions are unchanged.	Redo, size = 10 Redo, size = 9 Redo, size = 8 Redo, size = 7 Redo, size = 6	Pass	The redo button can only be used after using the redo button.
8	Click the ‘delete’ button and then click the hexagonal tile with the grey ‘explode’. Click the ‘delete’ button again to release the button.	The grey 'explode' tile should disappear.	The node is (5,4)	Pass	
9	Click the undo button	The grey 'explode' tile should display again.	Undo	Pass	
10	Click the redo button	The grey 'explode' tile should disappear again.	Redo, size = 14	Pass	
11	Click on the “rotate” button and then click once on the hexagonal tile which contains the dark grey “change” button. Click the “rotate” button again to finish rotating.	The hexagonal tile with a dark grey “change” should point north east.	The node is (12,5)	Pass	

12	Click the undo button	The hexagonal tile with a dark grey "change" should point north.	Undo	Pass	
13	Click the redo button	The hexagonal tile with a dark grey "change" should point north east again.	Redo	Pass	
14	Click the global clear button.	Should display nothing on the hexagonal grid.	The node is (12,5)	Pass	
15	Click the undo button again and again	The hexagonal tiles on the grid should display again.	Undo Undo ... Undo	Pass	If you clear the grid, you cannot undo it immediately. You have to click undo almost 100 times which is an inconvenience.

Test case 13

Test Execution date: 09/03/2013

Description

To check whether the tempos can be changed.

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Pass/Failed	Comments
1	Click the blue "play" tile and then place on a hexagonal tile.	Should display a grey "play" tile on the hexagonal tile	The node is (7,5)	Pass	
2	Click "change" tile and place it on the same path as the first hexagonal.	Should display a grey "change" tile on the second hexagonal tile.	The node is (7,2)	Pass	
3	Click 'start' button.	Should play a note and display a blue light from the first hexagonal tile to the	Note =49 The direction is 0	Pass	Note 49 is C# 4

		second tile. Then play another note at the second tile and the blue light continues to move until it reaches the edge of the grid.	<p>The node is (7,5) Now the direction is 0 The node is (7,4) Now the direction is 0 The node is (7,3) Note =70 The direction is 0 The node is (7,2) Now the direction is 0 The node is (7,1) Now the direction is 0 The node is (7,0)</p>		Note 70 is A# 5
4	Click the image of semibreve on the tempo control zone and click the “start” button again.	The image of semibreve should be highlighted. Should display just like before except that the speed of the light is very slow.	<p>The speed is 16 Note =49 The direction is 0 The node is (7,5) Now the direction is 0 The node is (7,4) Now the direction is 0 The node is (7,3) Note =70 The direction is 0 The node is (7,2) Now the direction is 0 The node is (7,1) Now the direction is 0 The node is (7,0)</p>	Pass	The blue light just represents the moving pulse.
5.	Click the image of semiquaver on tempo control zone and click “start” button again.	The image of the semiquaver should be highlighted. Should display just like before except that the speed of the light is very fast.	<p>The speed is 1 Note =49 The direction is 0 The node is (7,5) Now the direction is 0 The node is (7,4) Now the direction is 0</p>	Pass	The tempos from left to right are 1x,1/2,1/4,1/8,1/16.

			The node is (7,3) Note =70 The direction is 0 The node is (7,2) Now the direction is 0 The node is (7,1) Now the direction is 0 The node is (7,0)		
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Test case 14

Test Execution date: 16/03/2013

Description

To check whether the instrument can be changed in the 'preferences' menu.

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Actual Result (if different from expected)	Pass/Failed	Comments
1	Click on a hexagonal tile	Should play a piano note	The node is (11,4) Note =58		Pass	The initial instrument is piano. Note =58 is Note A# Octave 4
2	Open Edit> Preferences in the menu bar, select an instrument from the dropdown list and select 'Tubular-bell'. Then click 'Set for grid 1'. Finally, close the Preference menu.	Should display a Preference Menu.	The instrument is Tubular-bell		Pass	
3	Click on another hexagonal tile	Should play a different note which sounds like a Tubular-bell.	The node is (5,2) Note =69		Pass	Note =69 is Note A Octave 5
4	Open Edit> Preferences in the	Should display a	The instrument is		Pass	

	menu bar, select an instrument from the dropdown list and select 'bird'. Then click 'Set for grid 1'. Finally, close the Preference menu.	Preference Menu.	bird			
5	Click on another hexagonal tile	Should play a note which sounds like a bird.	The note is (4,3) Note =65	No sound can be heard.	Failed	All the instruments are tested, but some seems not work well. The 'gun shot' can play some notes, but others are silent. The 'bird' and 'applause' also do not work. The 'seashore' and 'telephone1' play the wrong instruments.

Test case 15

Test Execution date: 16/03/2013

Description

To check whether the help menu works or not.

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Actual Result (if different from expected)	Pass/Failed	Comments
1	Go to Help > Reactogon Help.	Should display a Reactogon Help Menu.		Pass	
2	Click 'about Hex'.	Should show an instruction of our application with a picture.	The text is shown but the picture is not shown.	Failed	The help menu works well except the pictures cannot be seen.

Test case 16

Test Execution date: 16/03/2013

Description

To check whether a hex file can be saved, loaded and a new project can be created.

Pre-conditions for the test case

The application can be implemented.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Pass/Failed	Comments
1	Click the blue “play” tile and then place it on a hexagonal tile.	Should display a grey “play” tile on the hexagonal tile	The node is (7,5)	Pass	
2	Click “change” tile and place it on the same path as the first hexagonal tile.	Should display a grey “change” tile on the second hexagonal tile which is clicked.	The node is (7,2)	Pass	
3	Open File > Save As, enter ‘hex1’ for the filename, choose desktop to store, and click ‘save as’. Then choose ‘Grid 1’ and click ‘Yes’.	Should display a save as window, after clicking ‘Yes’, a hex file named Hex1 should appear on the desktop.		Pass	The same test is used when you are saving a file for the first time.
4	Open File > New	A new clear set of grids should appear.		Pass	
5.	Open File > Load, choose desktop to load, and select ‘Hex1.hex’. Then click open. Then choose grid ‘1’ to load Grid 1 of the Hex1.	Should display a window asking you what you would like to load and where you would like to load it. The previously saved grid should load.		Pass	When the grid is edited, the user can save again by clicking ‘save’, and this time you do not need to enter the filename and choose the location to save.

Test case 17

Test Execution date: 16/03/2013

Description

To check whether the 6 grids can play separately.

Pre-conditions for the test case

The application can be implemented. The global ‘start’ button can start the playhead.

Scenario

Step No	Step Description	Expected Result	Example Test Data	Pass/Failed	Comments
1	Click the blue “play” tile and then place it on a hexagonal tile in grid one.	Should display a grey “play” tile on the hexagonal tile in grid one.	The node is (5,4)	Pass	
2	Click “change” tile and place it on the same path as the first hexagonal tile.	Should display a grey “change” tile on the second hexagonal tile .	The node is (5,3)	Pass	
3	Click grid ‘two’. Click the blue “play” tile and then place it on a hexagonal tile on grid two. Click the blue “stop” tile and then place it on a hexagonal tile in the same path as the play tile.	Should display a clear grid. Should display a grey “play” tile on the hexagonal tile in grid two, and a grey ‘stop’ tile in another tile.	tab1 The node is (4,4) The node is (4,1)	Pass	
4	Open Edit> Preferences in the menu bar, select an instrument from the dropdown list and select ‘violin’. Then click ‘Set for grid 2’. Finally, close the Preference menu.	Should display a Preference Menu.	The instrument is Violin	Pass	
5.	Click the image of semibreve at tempo control zone.	The image of semibreve should be highlighted. (tempo bar)	The speed is 16	Pass	
6.	Click ‘start’ button.	The two grids should play simultaneously. The start note of the piano grid and the violin grid play together. On the first grid, a blue light moves from the first tile to the second tile to play another piano note, the blue light continues till it reaches the edge of the grid. On the second grid, a blue light moves from the first tile to the second tile (stop tile), stops then plays a violin note. The tempo of the second grid is slower than the	Note =55 The direction is 0 The node is (5,4) Note =58 The direction is 0 The node is (4,4) Note =62 The direction is 0 The node is (5,3) Now the direction is 0	Pass	The initial start is to play all 6 grids concurrently. The instrument, tempo and which note to start can all be set separately for each grid. However, the volume and note length for all grids are the same.

		first grid so the blue light moves slower on grid two.	<p>The node is (5,2) Now the direction is 0 The node is (5,1) Now the direction is 0 The node is (5,0) Now the direction is 0 The node is (4,3) Now the direction is 0 The node is (4,2) Note =79 The node is (4,1)</p>		
7.	Open Play on the menu bar and deselect Grid 2. Click start again.	On the first grid, play a piano note on the first tile, a blue light then moves from the first tile to the second tile to play another piano note, the blue light continues till it reaches the edge of the grid. There is no blue light shown or instrument played on grid two.	<p>Note =95 The direction is 0 The node is (5,4) Note =102 The direction is 0 The node is (5,3) Now the direction is 0 The node is (5,2) Now the direction is 0 The node is (5,1) Now the direction is 0 The node is (5,0)</p>	Pass	The other grids can also work well, the tests are repeated and results are long, hence it is not shown here.