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| Element Tested | Test Data | Expected Result | Actual Result | Fixed Y/N |
| Updating Display with empty route | bestRoute = [] | Nothing happens | IndexError: list index out of range  bestRoute index was used to place start image on load and index didn’t exist | Y |
| Route that goes through an obstacle | bestRoute = [1,13,25,37,49,61,73,85,86,87,88,89,90,91] | Obstacle image is replaced with route image | Before route iteration:    After Route:    When ‘stop’ is pressed, obstacles don’t reappear | Y |
| Working Route | bestRoute = [1, 2, 3, 4, 5, 17, 29, 41, 42, 43, 55, 67, 79, 91, 92, 93, 94, 95, 96] | Route updated | Route updated |  |
| Route that crosses itself | bestRoute = [1,2,3,4,5,6,18,30,30,31,32,33,21,20,19,18,17,29,41] | Route replaces previously placed image | Grid image in which the last grid is below the current grid and the next grid is to the right or left. | Y |
| Route that has gaps | bestRoute = [1,2,3,4,5,6,93, 94,95,96] | Route joins after gaps | Because of the way that the display logic works, last grid of first route and first route of last grid pictures are not displayed. | N – non continuous route will not be passed to the system |
| Sphero to roll at bearing 0, then bearing 180 | bestRoute = [1,2,3,4,5,4,3,2,1] | Sphero does command directed | When going left, Sphero will instead go left, then right repeatedly. | Y |
| Direct sphero to head in one direction to a waypoint, then come back to start again | bestRoute = [1,2,3,4,5,4,3,2,1] | Commands last same amount of time | Second command lasts longer, rolls longer when doing a simple there and back again procedure – happens all the time | Y |
| Sphero is directed to roll at bearing 270, then at bearing 90 for and equal amount of time | bestRoute = [1,13,27,13,1] | Sphero goes ‘up’, then ‘down’, returning to the original start point | Down and up command are the same- sphero rolls in a straight line | Y |
| Sphero given base bearing of 360  And given 4 roll commands at all directions | bearing = 360  bestRoute = [1,2,3,15,27,26,25,13,1] | Sphero rolls in a square | Sphero does not roll – bearing + direction is greater than 360 | Y |
| Sphero given base bearing of 0  And given 4 roll commands at all directions | bearing = 0  bestRoute = [1,2,3,15,27,26,25,13,1] | Sphero rolls in a square | As expected | n/a |
| Sphero given base bearing of 162  And given 4 roll commands at all directions | bearing = 162  bestRoute = [1,2,3,15,27,26,25,13,1] | Sphero rolls in a square | Sphero does not roll – bearing + direction is greater than 360 in for back and left directions | Y |
| Run route in simulation mode, then stop partway through and start again | Any route | Route updates, then when stop is pressed display and time clear. When start is pressed again the display updates again at the start of the route | As expected | n/a |
| Run route in sphero control mode, then stop partway through and start again | Any route | Route updates and sphero rolls, then when stop is pressed display and time clear and sphero is disconnected. When start is pressed again sphero reconnects and rolls, and the display updates again at the start of the route | Start works, then when stop is pressed Sphero disconnects. When Start is pressed again however, Sphero turns red as if connected yet an error message box pops up to say that there was an error connecting to the Sphero.  Possible errors:  IOError, RuntimeError, AttributeError | N |