**Results of Validation Testing**

1. **Add Gizmo:** Passed - A gizmo is placed on the board.
2. **Add Overlapping Gizmo:** Passed - An error message appears when trying to place a gizmo on top of another.
3. **Add Gizmo Outside Build Area:** Passed - Nothing is added on the board.
4. **Rotate Gizmo:** Passed - The gizmo selected rotates on the board except it is an absorber.
5. **Move Gizmo:** Passed - The gizmo is moved to its new location on the board.
6. **Move Overlapping Gizmo:** Passed - The selected gizmo stays in its initial position and an error message appears.
7. **Move Gizmo Outside Build Area:** Passed - No gizmo is moved on the board.
8. **Connect Gizmos:** Passed - Both gizmos are connected.
9. **Connect Gizmos to Empty Spaces:** Passed - Nothing gets connected to an empty space.
10. **Add Absorber:** Passed - The absorber gets added to the board.
11. **Add Overlapping Absorber:** Passed- An error message appears that an absorber cannot be added on top of existing gizmos.
12. **Add Absorber Outside Build Area:** Passed - No absorber is added to the board.
13. **Connect Keys With Gizmos:** Passed - The selected gizmo performs an action when the corresponding key is pressed.
14. **Connect Keys with Empty Spaces:** Passed - No key gets connected to an empty space.
15. **Disconnect Gizmos:** Passed - Modified to disconnect all connections of the selected gizmo.
16. **Disconnect Gizmos from Empty Spaces:** Passed - Nothing gets disconnected from an empty space.
17. **Disconnect Key from Gizmo:** Passed - Modified to disconnect all connections of the selected gizmo.
18. **Disconnect Key from Empty Spaces:** Passed - Nothing gets disconnected from an empty space.
19. **Delete Gizmo:** Passed - The selected gizmo gets deleted from the board.
20. **Delete Empty Slot:** Passed - Nothing is deleted from the board.
21. **Add Ball:** Passed - A ball is placed on the selected position of the board.
22. **Add Overlapping Ball:** Passed - An error message appears that a ball cannot be placed on top of existing gizmos**.**
23. **Add Ball Outside Build Area:** Passed - Nothing is added on the board when selecting position out of the build area.
24. **Add Ball With Null or Incorrect Inputs:** Test no longer needed as sliders have been added instead of input boxes.
25. **Modify Gravity:** Passed - Gravity is applied and the ball acts correspondingly.
26. **Modify Gravity With Null or Incorrect Inputs:** Test no longer needed as sliders have been added instead of input boxes.
27. **Modify Friction:** Passed - Friction is applied and the ball acts correspondingly.
28. **Modify Friction With Null or Incorrect Inputs:** Test no longer needed as sliders have been added instead of input boxes.
29. **Switch to Run Mode:** Passed - The window changes to the run view.
30. **Switch to Build Mode:** Passed - The window changes to the mode view.
31. **Triggering an Action:** Passed - The corresponding action triggers with the corresponding key/gizmo.
32. **Save Game:** Passed - A file is created with the specified name and correct file format.
33. **Save Game with Same Filename:** Passed - The file with the existing name is overwritten with the new board state and saved with the correct file format.
34. **Load Game:** Passed - Game board is loaded with existing connections and parameters.
35. **Load Game with Invalid file:** Passed - The game doesn’t try to load files in the wrong file format.
36. **Start Game:** Passed - The game starts.
37. **Stop Game:** Passed - The game stops.
38. **Quit Game:** Passed - The game exits.
39. **New Game:** Passed - A new game starts.
40. **Clear Board:** Passed - The board clears.

Extensions:

1. **Move Ball:** Passed - The ball is moved to another valid position on the board.
2. **Delete Ball:** Passed - The ball is deleted from the board.