**Board Game Data Management Test Outline**

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1. Enter “E” to Run List Manager
2. Enter “H” to display unsorted hash list
3. Enter “B” to display barcode tree sorted by barcodes
4. Enter “T” to display title tree sorted by titles
5. Enter “I” to display indented tree (indentations vary depending on level of each node)
6. Enter “Q” to quit List manager
7. Enter “A” to run Insert Manager
8. Enter “123” or “abc” to show input validation for barcodes
9. Enter “111111111111” (12 1’s) for valid barcode input
10. Enter a board game title such as “Board Game”
11. Enter a brand such as “Brand”
12. Enter “abc” to show input validation for price
13. Enter a valid input for price (double) such as “12.99”
14. Enter a language such as “English”
15. Enter Y to insert another board game so we can prove insert manager accepts duplicate titles
16. Enter 111111111111 again to show insert manager will not accept duplicate barcodes
17. Enter 222222222222 (12 2’s) for valid barcode input
18. Enter “Board Game” as a title again to prove that insert manager allows duplicate titles to be inserted.
19. Continue to enter valid inputs until the programs asks if you would like to enter another board game where you should enter anything except Y to end insert manager such as “N”
20. Enter “I” anytime you would like to see the Menu again
21. Enter “B” to run delete manager
22. Enter a barcode for an item you would like to delete from the program such as “806899244337”
23. Enter another barcode for an item you’d like to delete such as “012856503094”
24. Delete another item such as barcode “126999100123**”**
25. Try to delete an item you have already have already deleted such as “126999100123”
26. Enter “Q” to quit delete manager
27. If you’d like to see the menu again enter “I”
28. Enter “E” to run display manager again to prove that your duplicate insertions and deletions worked on the trees and hash table
29. Enter “H” to see the hash table and if you like, enter “B” next to see the changed barcode tree, and then “T” if you’d like to see the changed title tree.
30. Enter “Q” to quit list manager
31. Enter “C” to undo delete
32. Enter “F” to save data to the output file and check the output file to make sure that undo delete worked. Notice the 2 items you had on the delete stack are destroyed
33. Enter “C” to call the undo delete function to prove that there is nothing left to delete because stack has been cleared after save to file
34. Enter “D” to run search manager
35. Enter “T” to search the by title (title tree)
36. Enter a board game name this is currently populated inside the data base such as “Blokus”
37. Enter “B” to search by barcode (barcode tree)
38. Enter the barcode of a board game that is currently populated inside the database such as “918002229613”
39. Enter “H” to search for a board game in the hash table
40. Enter the barcode of a board game that is currently populated inside the database such as “655489327785”
41. Enter “Q” to quit search manager
42. If enter “E” to run the display manager
43. Enter “I” to the indented tree
44. Copy the barcode of the root board game (it is the barcode that is not indented) (**918002229613**)
45. Enter “Q” to quit the display manager
46. Enter “B” to run the delete manager
47. Enter the root barcode that you just copied
48. Enter “Q” to quit delete manager
49. Enter “E” to run list manager
50. Enter “I” to display the indented list, make sure the root barcode was deleted
51. Enter “Q” to quit list manager
52. Enter “G” to display statistics of load factor and number of collision in hash table
53. Enter “H” to quit program
54. Check to see that the finalized data has been stored to the output file.