How to run the tester.sh

First of all, you have to compile the script using the “chmod u+x tester.sh” command. After compiling the tester script you have to enter a command for running the script “./tester.sh”. when you will run the script you will get the output from the testsuite directory. What are the cases are failed and what are the cases were passed, and also it will show that non-zero exit status for one case.

I hope this little description for running the script can help on how to run my tester.sh script on the testsuite directory.

Thank you!

Test Document

Note:

I have created one directory named "testsuite" which has three sub directories, respectively "inputdata", "expoutput", and "actoutput".

In the "inputdata" directory I am storing my all the test cases for the input, in the "expoutput" I am storing all expected output files, and in the "actoutput" I am storing all the data I will get after checking through the script.

In general, in my all the sub directories all the files name is same, for example, if user wants to test for the valid command type then in the "inputdata", "expoutput", and "actoutput", the file name is "validcmd".

so, this means, each directory has same file name for the same functionality.

Description and Summary Table

- I am making one table where you can find all the data easily and each column will be the subdirectories or we can say the location of the specific file and each row will be the files name in each sub directories.

File Name is Same in each Directories	File functionality in "inputdata" directory	File functionality in "expoutput" directory
"invalidcmd"	(verbose mode) This will test the invalid command type, in this file first I am entering 78, and then checking with the single character A, after that checking with the multiple wrong character like ABC, and then checking for the special character like ;< and then in the end I will quit the program	This file will have the menu of commands in very beginning, and then I have entered 78 so it will show the given message twice, "Error: an invalid command was entered, please try again (H is the command for the help menu)". And every time when I will enter invalid command then it will print the error message in terms of how many characters, I have entered. So, if user enters invalid command then we are expecting that it should ask user until they provide the valid command, and it will show the error message to them when they will enter wrong command and you

		can find the expected output file in the expoutput directory, file named "invalidcmd".
"insertI"	(verbose mode) In this file, I am checking that what if the user enters command "I" without creating a new tree, and then I will quit the program	It will show the menu command and it will show the message like "WARNING: no tree exists to insert to". Because we have not created a new tree before inserting the elements and then it will show the message for quitting the program, and you can find it in expoutput directory file named "insertI".
"toolongaddress"	(verbose mode) In this file, I am checking for that what will happen if user will enter valid string but it is too long, so first I am creating the new tree and then I am inserting the elements, so for the lower left address I am inserting the 10000000000000 and for the upper right address I am inserting the 33333333333, and then I will quit the program	So, as usual it will print the menu for the different commands and then, as soon as I entered 100000000000000 it will show that "WARNING: 10000000000000 is not a valid address" and when I will enter 33333333333 then it will show, "WARNING: 33333333333 is not a valid address" and as usual when you will quite the program, it will print the end message. We are expecting the less output it should as I shown in the file named "toolongaddress" in the expoutput directory
"1lengthaddress"	(verbose mode) In this test case I am testing about what will happen if the user enters 1 length addresses for the lower left and upper right address, so basically I am creating a new tree and then I am inserting 1 for the lower left corner and 2 for upper right corner and then I will quit the program	In the expected output file, it will show the menu for commands and then it will show that "Item inserted in quadrant" and then quite message in the end of the program. You can find it in expoutput directory and file named is "1lengthaddress"
"0lengthaddress"	(verbose mode) In this case we are testing for the 0 length addresses for the lower left and upper	As usual output starts with the menu of commands and after inserting the elements it will print the message like "Item inserted in quadrant" and then it will print the

	right address, so I am creating a new tree and inserting the elements and for the lower left address and upper right address I am entering *, and then I will enter Q for quitting the program	end message of the program, and you can find the file named "0lengthaddress" in expoutput directory
"insertinvalidchar"	(verbose mode) In this file, I am checking that what will happen if user enters valid input followed by the characters, so I am creating a new tree and then I am inserting the elements and then I am inserting "01Prince" for the lower left address and for the upper right address I am inserting "010Diyora" and then I will enter Q to quit the program	The output will show the menu for the commands and when I enter "01Prince" for the LL address it will print the warning message like this, "WARNING: 01Prince is not a valid address", and when I will enter "010Diyora" it will show the message like this, "WARNING: 010Diyora is not a valid address". After this output, it will print the message like "Item inserted in quadrant 010" and in the end quite message. We are expecting the exact output as I have shown in the file named "insertinvalidchar" in the directory name expoutput.
"maxlengthaddress"	(verbose mode) In this file, we are testing for the maximum length of LL and UR addresses, so for this I am creating a new tree and inserting the elements, and then I am entering the "0000000001" for LL and for UR, I am entering "0000000011" and then I will enter Q for quitting the program	In the output we can see the menu of the commands, and then after inserting LL and UR, it will print the message like this "Item inserted in quadrant 00000000" and then in the end it will print the message for quitting the program. You can fine the expected result file named "maxlengthaddress" in the expoutput directory.
"LLgreaterUR"	(verbose mode) In this file we are checking that what will happen if user enters, greater lower left address than the upper right address. So, I am creating a new tree and then I am inserting the elements and	In this file as soon as I entered LL it will print the message like "Warning: 3333333333 is not a valid address" and as soon as I entered UR it should print "Warning: 0000000000 is not a valid address" and then in the end it will print the message for item is inserted in the quadrant and as

	then for the LL I am entering “3333333333” and for the UR I am entering “0000000000” and then quit the program	usual we can see the quit message, we need exactly same output as I have shown in the file named “LLgreaterUR” in the expoutput directory
“duplicate”	(verbose mode) In this file I am checking for the duplicate insertion, first of all I am creating a new tree and inserting the title name, description, LL, and UR, after this I am again typing command “I” for the inserting the elements again and this time I am giving the same data as I provided in the first tree and then Q to quit the program	In this file as usual it will show the menu for all the commands, and then as soon as I create a new tree and insert “22” for LL and “23” for UR and then It will print the message like “Item inserted in quadrant 2” and for the second time inserting the elements I am entering the same data and it will show the same message like this, “Item inserted in quadrant 2” and it will show quit message, and expected result is in file named “duplicate” in expoutput directory
“printtree”	(verbose mode) In this file, I am testing that what if user enters P command before creating a new tree, so I am entering “P” command and then I will enter “Q” to quit the program	Output shows that “WARNING: no tree has been created to print” and then it will show the quit message, we are expecting this result and it is in the file named “printtree” in expoutput.
“emptytreeprint”	(verbose mode) In this file, I am creating new empty tree and trying to print the whole tree, so I am entering N and then trying to print tree by entering P, T and then I am entering * and then Q for quitting the program	As soon as I enter T then I will enter * and it will show like this, “Printing tree from "" Start of quadrant end of tree” which shows that our tree is empty, and then it will display the quit message and you can find the file named “emptytreeprint” in the expoutput directory
“emptytreeprintquad”	(verbose mode) In this file, I am creating a new empty tree and trying to print the quadrant, so I am entering N and then I am entering Q and then I am	As soon as I enter Q and then * and it will print the message like “Printing quad from """ and then it will show the quitting message and this message shows that quad is empty and expected result is findable in file named

	entering * and then Q for quitting the program	“emptytreeprintquad” in expoutput directory
“nicejob”	(verbose mode) In this file, I am entering the word “nicejob” and then I am entering “07:48” for the one line description and then I am entering the LL and UR address and will quit the program in the end	In this file it will create a new tree and then “I” for inserting the items and then it should take “cejob” as a title and then it will show the prompt for the one line description and also after that it should show the inserted LL and UR addresses, and in the end it will show the quit message. This is what we are expecting, and result is in the file named “nicejob” in expoutput directory
“oneleveltree”	(verbose mode) In this file I am testing for printing the one level tree, so I am creating and new tree and I am inserting the items and I am inserting the LL and UR in the 0 quadrant and then I am entering P and I want to print the tree so I am entering T and then I will enter * and q for quitting the program	In this file it will show the menu command, and then after inserting the item it will print the message that item is inserted into quadrant 0 and then after entering the commands for printing the tree it should show the message like this, “Printing tree from "" Start of quadrant Start of quadrant 0 diyorapr::08:49 (0:0100000000:0233333333) end of quadrant 0 end of tree”. We are expecting the “:” between the (LL:UR), and this same result is shown in the file named “oneleveltree” in expoutput directory
“onelevelquad”	(verbose mode) In this file I am testing for the printing the one level trees’ quad, so I am creating a new tree and I am inserting the data in the quadrant 0 so after that I am printing the quadrant by P, Q, 0 and in the quit the program	In this file we will get the message after inserting the data in quadrant 0 and when printing the quad, it should give a message like this, “diyorapr::08:49(0:0100000000:0233333333)” and in the end quite message, we are not expecting the extra message, and “,” between and LL and UR and the exact same result is available in the file named “onelevelquad” in expoutput directory

“twoleveltree”	(verbose mode) In this file I am testing for printing the two level of the tree, so I am creating a new tree and then inserting two items into the tree, inserting one item in the 0 quadrant and inserting the second item in the 1 quadrant and then printing the tree using P,T and * command and then quit the program	In this file after printing the tree the output will be like this, “Printing tree from "" Start of quadrant Start of quadrant 0 diyorapr::9:43(0:0100000000:0233333333) end of quadrant 0 Start of quadrant 1 diyorapr1::9:44(1:1100000000:1233333333) end of quadrant 1 end of tree” and we are expecting “:” between LL and UR as shown in the file named “twoleveltree” in expoutput directory
“twolevelquad”	(verbose mode) In this file I am testing for printing the two different quadrants, so I am creating a new tree and inserting two items in the tree and inserting one item in the 0 quadrant and second item into the 1 quadrant and then printing the quadrant 1 using P, Q, 1 and printing the 0 quadrant using P, Q, 0 and then quitting the program	In this file it will show the menu of all the commands and after inserting the items as soon as we will enter P, Q, 1 then it will show the message like this, “diyorapr1::9:44(1:1100000000:1233333333)” after printing this message as soon as enter P, Q, 0 it should print the message like this, “diyorapr::9:43(0:0100000000:0233333333)” and in the end it will print the quit message. This is the same output we are expecting, and it is shown in the file named “twolevelquad” in the expoutput directory
“foundtree”	(verbose mode) In this file I am finding item in the tree and system will found that item in the tree, so I am creating a new tree and inserting the data in quadrant 2 and trying to find the tree using F, T, * and title name is diyorapr and in the end quit the program	In this file you can see the menu of all the commands and after inserting the item in 2 quadrant it will show the usual message and then as soon as we will enter the title name we are searching for, it will print the message like this, “Found:diyorapr::11:03(2:2200000000:2333333333)” and exact output can be shown in the file named “foundtree” in expoutput directory
“foundquad”	(verbose mode)	In this file you can see the menu of all the commands and after

	In this file I am finding item in the quad and system will found that item in the quad, so I am creating a new tree and inserting the data in quadrant 2 and trying to find the quad using F, Q, 2 and title name is diyorapr and in the end quit the program	inserting the item in 2 quadrant it will show the usual message and then as soon as we will enter the 2 quadrant and title name we are searching for, it will print the message like this, "Found:diyorapr::11:03(2:2200000000:2333333333)" and exact output can be shown in the file named "foundquad" in expoutput directory
"notfoundtree"	(verbose mode) In this file I am testing that the given named file, is not found. So, I am creating a new tree and I am inserting the items in the quadrant 2 and I am trying to find the tree by giving the different title name so I will enter F, T, * and I will enter wrong title name which is "diyorapr1" and quit the program	In this file it will show the menu of the commands, and then after inserting the items in the quadrant 2, it will print the usual message and then I am typing the command as I have described and I am entering the wrong title named and it will show the message like this, "No matching item found for "diyorapr1" in" because there is no title named diyorapr1 and exact output is visible in the file named "notfoundtree" in expoutput directory
"notfoundquad"	(verbose mode) In this file I am testing that the given quadrant, is not found in the given tree named. So, I am creating a new tree and I am inserting the items in the quadrant 2 and I am trying to find the quadrant 3 in the tree by typing F, Q, 3, diyorapr these all commands and in the end I will enter the quit command	In this file it will show the menu of the commands, and then after inserting the items in the quadrant 2, it will print the usual message and then I am typing the command as I have described and as soon as I will enter all the commands it will print the message like this, "No matching item found for "diyorapr" in 3", because we have entered the items into the quad 2 and we are finding the quad 3, so exact output can be shown in the file named "notfoundquad" in expoutput directory
"removetree"	(verbose mode) In this file I am testing that the given named tree is available and it is removed successfully, so I am	In this file it will show the menu of the commands, and then after inserting the items in the quadrant 2, it will print the usual message and then I am typing the command as I have described and as soon as I

	creating a new tree and inserting the data in the quadrant 2 and for removing the tree successfully I am entering the command like R, T, diyorapr, * and then quit the program	will enter all the commands, it will print the message like this, “Removed item "diyorapr"” and will quit the program by displaying the quit message and you can find the exact output file named “removetree” in the expoutput directory
“removequad”	(verbose mode) In this file I am testing that the given named tree is available and the given quad is removed successfully from the tree, so I am creating a new tree and inserting the data in the 2 quadrant and for removing the quadrant I am entering the command like R, Q, diyorapr, 2 and then quit the program	In this file it will show the menu of the commands, and then after inserting the items in the quadrant 2, it will print the usual message and then I am typing the command as I have described and as soon as I will enter all the commands it will give the message like this, “Removed item "diyorapr"” and then it will quit the program and you can find the exact result in the file named “removequad” in expoutput directory
“notremovetree”	(verbose mode) In this file I am testing that the given named tree is not exist and the given address for removing the tree will not exist so it will not remove tree successfully, so I am creating a new tree and inserting the data in the quadrant 2. Now I am entering the command like R, T, diyorapr1, 0 and quit the program. Here diyorapr1 title name for the tree does not exist and I have not inserted the items in the 0 quadrant	In this file it will show the menu of the commands, and then after inserting the items in the quadrant 2, it will print the insertion message and then I am typing the given command and it will show the message like this, “No matching item found for "diyorapr1" in 0” because there is no title named diyorapr1 and there is no address 0 available so it will not remove item successfully, and the exact result can found in the file named “notremovetree” in expoutput directory
“notremovequad”	(verbose mode) In this file I am testing that the given quad is not removed successfully, so I am creating a new tree and I	In this file it will show the menu of the commands, and then after inserting the items in the quadrant 2, it will print the insertion message and then I am typing the given command and it should show the

	am inserting data into the quad 2 and then I am trying to remove the quad 4 by entering this commands like R, Q, diyorapr, 4 and quit the program and here quad 4 does not exist so it will not remove the quad successfully	message like this “No matching item found for "diyorapr" in 4” and should not show any extra message so exact result is available in the file named “notremovequad” in the expoutput directory
“notreequit”	(verbose mode) In this file I am testing the quit command what it will do, if there is no tree has been created yet. In this file I am just entering Q for the quitting the program, without creating a new tree	In this file, It will show menu for all the commands and then as soon as I enters Q command it will print the message like this, “Deallocating item tree and shutting down” and it will close the program, we are expecting less output and the exact output result is available in the file named “notreequit” in expoutput directory
“treenotdeleted”	(verbose mode) In this file I am testing the quit command after creating the tree the but without deleting it. So , in this file I am creating a new tree and inserting the itmes in the 0 quadrant and after that I am entering the command Q to quit the program	In this file, It will show menu for all the commands, and after entering the items in the 0 quad it will print the insertion message and when I will enter Q command it will print the message like this, “Deallocating item tree and shutting down” and exact output result is visible in the file named “treenotdeleted” in expoutput directory
“treecreatedelete”	(verbose mode) In this file I am testing the quit command after creating and deleting the tree, so I am creating a new tree and inserting the data in the quadrant 0 and then I will enter D for deleting the tree and then I will enter Q for quitting the program	In this file, It will show menu for all the commands and after entering the items in the 0 quad it will print the insertion message and when I will enter D it will delete the tree but it will not display any message and after entering the Q command it will print the message like this, “Deallocating item tree and shutting down” and exact expected result can be found in the file named “treecreatedelete” in expoutput directory
“newnotvalid”	(verbose mode)	Very beginning it will show the menu for the all the commands and when I will enter P it will print the

	In this file, I am checking some commands before creating a new tree and then I am creating a new tree and inserting the data. So, I am entering P and I commands first and then I am entering N for creating a new tree and then I am inserting the data into the quadrant 00 and then entering Q command for quitting the program	message like this, “WARNING: no tree has been created to print” and when I enter “I” it will print the message like this, “WARNING: no tree exists to insert to” so then I am creating a new tree and after inserting the data it will show the insertion message and in the end, it will show quit message and the exact result can be find the file named “newnotvalid” in expoutput directory
“newvalid”	(verbose mode) In this file, I am creating a new tree inserting the data into it and then I will create a new empty tree, this is for testing that new tree is already valid, so creating a new tree by entering N and inserting the data into the quadrant 00 and then I am entering the N which will create the new tree and delete the old ones and in the end Q for quitting the program	In the beginning it will print the menu for all the commands and then it will print the insertion message for the first tree and as soon as I will enter N it should not print any message and in the end qutting message and expected output have shown in the file named “newvalid” in expoutput directory
“helpcmd”	(verbose mode) In this file, I am testing for the help command, so I am basically entering the H command for the help menu and in the end Q for quitting the program	In the very beginning it will show the menu for all the commands and as soon as I will enter H, it will show the help menu again where user can find all the commands and some description and in the end it will quit the program with the end message, and the file named “helpcmd” is available in the expoutput directory
“verboseprint”	(quiet mode) In this file we are printing the tree in quiet mode basically we are testing the non verbose mode for creating a new tree,	In the beginning it will show the menu for all the commands and then it will not prompt any messages because we are entering the data in quiet mode. After inserting the data when we enter the command for printing the tree it

	inserting, and printing it. So first entering the V, then creating a new tree and inserting the data into the 00 quadrant and then entering P, T, * and in the end Q for quitting the program	will print the first message in this file and like this, “Start of quadrant Start of quadrant 0 Start of quadrant 00 diyorapr::04:25(00:0020000000:00 03333333) end of quadrant 00 end of quadrant 0 end of tree” and it will quit the program without printing the message and exact expected output file is available in file named “verboseprint” in expoutput directory
“verbosefind”	(quiet mode) In this file we are creating tree in quiet mode and finding the quad into the tree, so I am entering V to turn on quiet mode then I am creating an new tree and inserting the data in quadrant 00 and then F, Q, 00 for finding the quadrant 0 and then in the end Q for qutting the program	In this file as usual print the menu for all the commands and then we are in quiet mode so it will not prompt any messages and as soon as it will find the quad it will print the message like this, “Found: diyorapr::04:56(00:0020000000,00 03333333)” and quit the program without displaying the message and the file named is “verbosefind” and in expoutput directory
“verboseremove”	(quiet mode) In this file we are creating tree in quiet mode and removing the tree elements, so I am entering V to turn on quiet mode then I am creating an new tree and inserting the data in quadrant 0 and then R, T, diyorapr, * for removing the tree with title named “diyorapr”. In end Q for qutting the program	In this file as usual print the menu for all the commands and then we are in quiet mode so it will not prompt any messages and as soon as it will remove the elements from the tree, it will print the message like this, “Removed item "diyorapr"” and quit the program without displaying the message and the file named is “verboseremove” and in expoutput directory

Thank You!