Output for part1 of the project3 –

PreOrder Traversal of the Tree is

34

11

33

22

42

65

43

The implementation of Height method Testcase

Height is: 3

Checking whether 11 is present in tree or not

Using the find method

Value present!

Checking whether 23 is present in tree or not

using find method

Value not Present!

Deleting 22 if it is present in the tree

Using the delete method

Value deleted!

The preorder traversal of the tree now is

34

11

33

42

65

43

Deleting 40 if it is present in the tree

Using the delete method

Value not deleted!

The average height of the binary trees for case 1 is: 21

The average height of the binary trees for case 2 is: 21

Output of part2 of project 3 –

Inserting elements to map

Inserting Element 1 with key 1

Inserting Element 2 with key 2

Inserting Element 3 with key 3

Displaying the table after inserting:

Element 1

Element 2

Element 3

Retrieving elements from the table

Retrieving Element with key 1

Element 1

Retrieving Element with key 2

Element 2

Retrieving Element with key 3

Element 3

Displaying the table after retrieving:

Element 1

Element 2

Element 3

Searching Element with key 1

Element Found

Searching Element with key 2

Element Found

Searching Element with key 3

Element Found

Searching Element with key 4

Element not found

Removing elements from map

Removing Element with key 1

Element 1

Removing Element with key 2

Element 2

Removing Element with key 3

Element 3

Displaying the table after removing:

Max chain length- Task 3

The max chain length is 4

Average length

Average chain length is : 32

Average length with tables of different sizes

Average length when table sizes is 48 : 29

Average length when table sizes is 51 : 28

Average length when table sizes is 64 : 24

Average length experiment with modified hash function

Average length when table sizes is 47 is: 7

---------------Demoing average length experiment with modified hash function-------------

Average length when table sizes is 64 is: 6