

Program Design Assignment 4 Test Cases

Q1

Testcase 1.

Input:

p
t
b
i 10
i 5
i 6
i 3
p
t
b
e

Output:

NULL
NULL
NULL
3 5 6 10
10 5 3 6
3 6 5 10

Testcase 2:

Input:

i 20
i 30
i 15
i 25
p
s 35
s 30
e

Output:

15 20 25 30
NOT PRESENT
PRESENT

Testcase 3:

Input:

i 2

i 3
i 15
i 25
p
t
b
e

Output:

2 3 15 25
2 3 15 25
25 15 3 2

Testcase 4:

Input:

i 10
i 5
i 3
i 6
i 20
i 13
i 27
d 10
t
b
e

Output:

13 5 3 6 20 27
3 6 5 27 20 13

Testcase 5:

Input:

i 20
i 30
i 15
i 25
d 20
d 25
p
t
b
e

Output:

15 30
30 15

15 30

Q2

Testcase 1.

Input:

i 3

i 5

i 7

i 1

i 6

s 3

s 9

m

e

Output:

PRESENT

NOT PRESENT

7

Testcase 2:

Input:

i 1

i 2

i 3

i 4

i 5

k 5

m

s 3

e

Output:

5

5

PRESENT

Testcase 3:

Input:

i 20

i 25

i 15

i 35

i 10

i 40

i 5

m

s 35

s 60

k 1

k 2

n 15

e

Output:

40

PRESENT

NOT PRESENT

5

10

20

Testcase 4:

Input:

i 100

i 200

i 90

i 80

i 250

i 70

i 55

i 60

m

n 200

d 300

d 250

m

s 250

k 1

k 7

e

Output:

250

250

NOT PRESENT

200

NOT PRESENT

55

200

Testcase 5:

Input:

i 100

i 150

i 50

i 70

k 1

i 40

k 1

m

s 50

d 65

d 50

n 40

n 100

d 100

s 100

e

Output:

50

40

150

PRESENT

NOT PRESENT

70

150

NOT PRESENT

Q3

Test Case 1:

Input:

(15 (14 (71 (96 () ()) (49 (45 () ()))) (20 () (8 () ()))) (61 () (2 () ())))

14

2

Output:

96 49 8

Test Case 2:

Input:

(15 (14 (2 () (8 () ())) (20 () ())) (61 (49 (45 () ())) (71 () (96 () ()))))

14

2

Output:

8

Test Case 3:

Input:

$$(15(14(2(8(())(20(())(61(49(45(())(71(96(())())))))))))$$

15

3

Output:

8 45 96

Test Case 4:

Input:

(15 () (13 () (14 () (61 () (71 () (20 () (2 () (49 () (45 () (96 () (8 () ())))))))))))

15

4

Output:

71

Test Case 5:

Input:

$$(15(14())(61()()))$$

15

1

Output:

14 61