

Delete Mid Element in a stack

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Delete middle Element in a stack

Flow:

Problem statement

for

Hypothesis
BC
Induction
Code

=> Design

main

1 2 3 4 5

IDE Platform

for (stack::size() > 5)

PS

5 4 3 2 1

middle element

$k = \frac{\text{size}}{2} + 1$

$k = \frac{5}{2} + 1 \Rightarrow 2 + 1 \Rightarrow 3$
 $k = \frac{6}{2} + 1 \Rightarrow 3 + 1 \Rightarrow 4$

5
4
3
2
1

middle element

$k = \frac{\text{size}}{2} + 1$

Decision

Decision

IP smaller

Rule capture

Reverse

BC
Hypothesis
Induction
Solution

Reverse

Reverse Solution

middle $k \rightarrow 3$

Solve
5
4
3
2
1
(k)

5
4
2
1

Solve IP
4
2
1
(k+1)

5
4
2
1

Hypothesis

Solve (s, k)

Solve (s, k+1)

smaller IP

BC

smaller IP

k

element valid k

5
4
3
2
1

5
4
2
1

5
4
2
1

k -> element
2

k element
valid

k=1

5
4
3
2
1

4 5

BC

Hypothesis
BC
Induction

if (k == 1)
{
s = pop();
return;
}

Solve

5
4
3
2
1
(k)

5
4
2
1

Solve

4
2
1
(k+1)

4
2
1

Level 1

Code

stack::size() > midDel (stack::size() > s, size)

if (s.size() == 0)

return s

k = size / 2 + 1

solve (s, k)

return s

void solve (stack<int> &s, k)

if (k == 1)

s = pop()

return

int temp = s.top()

s = pop()

solve (s, k+1)

s.push (temp)

return

BC

k=1

k=3

5
4
3
2
1

5

k

solve (k-1)

Code + Notes