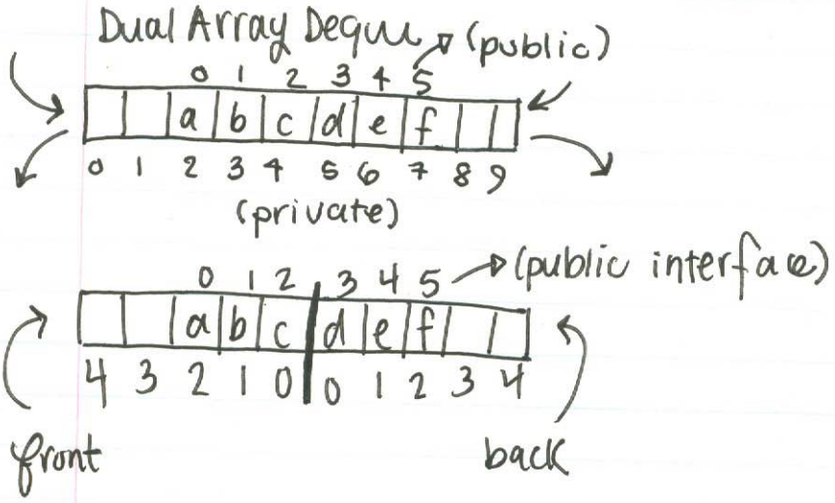
Sept 27



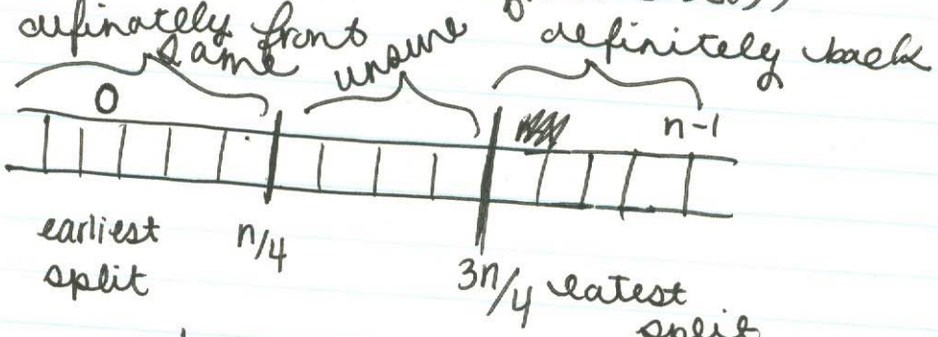

```
size();

    front.size() + back.size();          O(1)

get(i);

    if ( i ≥ front.size())
       back.get (i - front.size())       O(1)
    else
       front.get (front.size() - 1 - i)

add(i, x);

    if( i ≥ front.size())
        back.add ( i - front.size(), x)
    else
        front.add((front.size() - i), y)
```

remove same as

rebalance();

if (front.size() > 3 * back.size())
balance both stacks evenly
$\lceil n/2 \rceil$ = front, $\lfloor n/2 \rfloor$ = back — O(n)

if (back.size() > 3. front.size())



O(i)	O(n) = O(i) = O(n-i)	O(n-i)
add (i < n/4)	add (	add (i ≥ 3n/4)

O(1 + min {i, n-i})