Problem Domain

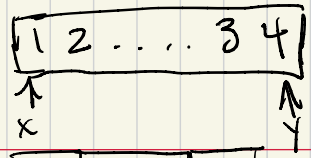
Reverse an array of integer

input : an array of integers - unsorted

output : an array of integers Reversed

- length is ≥ 0
- size of int is INT_MAX and INT_MIN
- expect INT

Visualize



Time & Space

O(n) - Time

O(1) - space

Algorithm

Suppose an array a has n: $n \in \mathbb{Z}$ & $a_n \neq 0$

then test case:

$a = \{0, 1, 2, 3\}$, $|a_n| = 4$

while($a_{front} < a_{end}$)

swap(a)

$a_{front+1}$

a_{end-1}

Test Case

if n=0, if n<0, if ≥ 0

[ ] ⇒ return [ ];

[1,2,3] ⇒ return [3,2,1]

[-1, -5, -1000] ⇒

[-1000, -5, -1]

if length is odd/even

```
Public Class Main
{
    Public      int a = {1,2,3}
  Public static void main (String[] args)
    {
      if (a.length == 0) return a;
      else // not needed
       int front=0, Back=a.length-1, Temp=0;
      While (Front < Back)
      {     Temp=a[Front];
            a[Front] =a[Back];
            a[Back]=Temp;
            --Back; // Prefix
            ++Front; // same as Postfix in java
        }
     }
}
```

// could use Recursion But O(n) is better for time