

- Difference of two Arrays
- Find first & last index
- Inverse Array

Diff of 2 Arrays:

$$A[] = \{1, 0, 0, 2, 3\}$$

$$B[] = \{1\}$$

$$A = [5, 4, 5] \quad B = [8, 6]$$

$$a_i = 2 + 0 - 1$$

$$b_i = -1$$

$$\text{currDiff} = -1 \times \frac{1 + (-1)}{1} = 0$$

$$\text{carry} = 0 \rightarrow 1$$

$$\text{diff} = 998$$

$$a_i = 2 + 0 - 1$$

$$b_i = 1 + 0 - 1$$

$$cd = 1 \times 5 + (-1) = 4$$

$$\text{carry} = 0 \rightarrow 1 \rightarrow 10$$

$$\text{diff} = 759$$

$$\begin{array}{r} \text{Carry} \quad -1 \quad -1 \quad 0 \\ 4 \quad 5 \quad 6 \\ \hline 6 \quad 1 \\ \hline 3 \quad 8 \quad 9 \end{array}$$

```
while (ai >= 0 && bi >= 0) {
    int currDiff = a[ai] - b[bi] + carry;
    carry = 0;
    if (currDiff < 0) {
        currDiff = currDiff + 10;
        carry = -1;
    }
    diff = currDiff + diff;
    ai--;
    bi--;
}

while (ai >= 0) {
    int currDiff = a[ai] + carry;
    carry = 0;
    if (currDiff < 0) {
        currDiff = currDiff + 10;
        carry = -1;
    }
    diff = currDiff + diff;
    ai--;
}

return diff;
```

First & Last index of element:

$$[1, 2, 2, 3, 4, 4, 4, 4, 5, 6], n = 4$$

boolean numberEncountered = false;

$$\text{int } j_i = 4$$

$$\text{int } l_i = 4, 5, 6, 7$$

for (i = 0 to arr.length - 1) {

if (nr == false && arr[i] == n) {

- numberEncountered = true;

f = i; l = i;

} else if (nr == true && arr[i] == n) {

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if (true) {
    ne == true && ans[i] == n {
        li++;
    }
    else {
        break;
    }
}

```

0	1	2	3	4	5	6	7	8	9	
1	2	2	3	3	3	4	4	7	5	n = 4
						<u>y_i</u>		<u>q_i</u>		

Inverse of an Array:

N = 5

0	1	2	3	4
<u>3</u>	<u>2</u>	<u>4</u>	<u>0</u>	<u>1</u>
3	4	1	0	2

0	1	2	3	4	5
5	<u>1</u>	<u>4</u>	<u>0</u>	<u>2</u>	<u>3</u>
<u>3</u>	<u>1</u>	<u>4</u>	<u>5</u>	<u>2</u>	<u>0</u>

$i = 0 \times 2 \times 4 \times 5$
 $ans[i] = 5 \times 4 \times 0 \neq 3$

ans[ans[i]] = i