Pointer Arithmatic
Comp#raing the Pointers

⇒ Using relational operators $(<, >, <=, >=)$ and equality operators $(==, !=)$ we compare pointer.

⇒ Only possible when both pointers points same array

⇒ Output depends upon the relative possition of both the pointers.

```
int main(){
    int a[] = {1, 2, 3, 4, 5, 6};
         0  1  2  3  4  5

    int *p = &a[3];

    int *q = &a[5];

    printf("%d ", p <= q);    [True] - Opt -①
                    4    6

    printf("%d \n", p >= q);  [FALSE] Opt -⓪
                    4    6

    q = &a[3];   p = q = 4

    printf("%d", p == q);  → [TRUE] Opt -①

    return 0;
}
```

What is the output of this program?

```c
int main () {
    int a[] = {5, 16, 7, 89, 45, 32, 23, 10};
    int *p = &a[1], *q = &a[5];

    printf("%d", *(p+3));
    printf("%d", *(q-3));
    printf("%d", (p-q));
    printf("%d", p<q));
    printf("%d", *p < *q);

    return 0;
}
```

Indices above array: `0 1 2 3 4 5 6 7`

`int *p = &a[1]` → 16
`int *q = &a[5]` → 32

`printf("%d", *(p+3));` → 45
`printf("%d", *(q-3));` → 7
`printf("%d", (p-q));` → 4
`printf("%d", p<q));` → 4
`printf("%d", *p < *q);` → 1

45	7	4	1	1