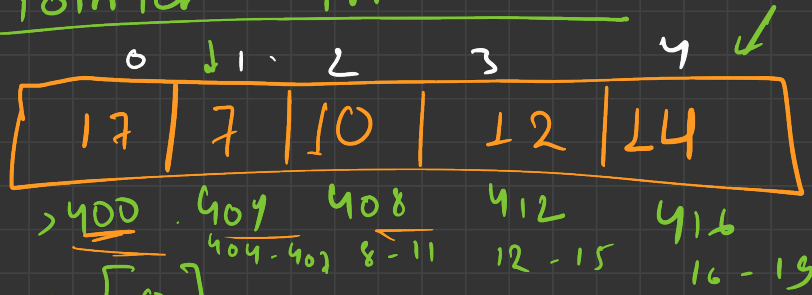


Pointer in C++

int arr[5]



int *ptr = &arr[0]

int *ptr1 = &arr[1]

arr+0, arr+1, arr+2, arr+3, arr+400

400, 404, 408, 412, 416

arr = &arr[0]

400, 401, 402, 403

cout << arr+2 arr+2

i^{th} index = Base add + $i \times \text{data type size}$

int a=4;

= 400 + 2 × 4

= 408

cout << a
4

cout << arr[3];

name	add	size	data
arr	400	5	int

*(arr+3)

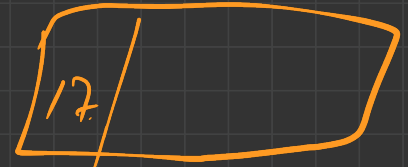
arr[i] = ← $\ast(arr + i)$;



$i[arr]$

$= \ast(i + arr)$

$arr = \&arr[0]$
 $= \&\ast(arr + 0)$
 $= \&\ast(arr)$
 \uparrow
 $arr = arr$



400



$\&17$

```
arr[i] = *(arr+i)
```

```
for (i = 0; i < 5; i++)
```

```
    cout << *(arr+i) << endl;
```

```
// Add print
```

```
for (i = 0; i < 5; i++)
```

```
    cout << arr[i];
```

int *ptr = arr;

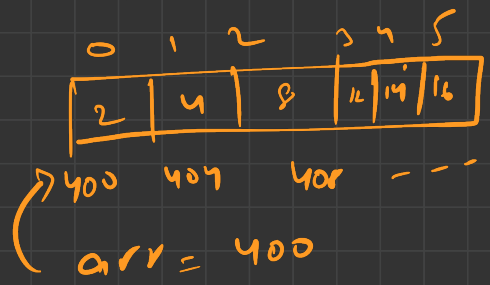
for (i=0; i<6; i++)

cout << ptr[i];

cout << *(&ptr + i);

*(&ptr + i)
*(400 + 0)
*400
2

*(&ptr + 1)
(400 + 4*1)
404
4
14



① Arithmetic operation

++, --

```
int ptr = arr;  
for(i=0; i<5; i++) {  
    cout << *ptr
```

ptr++;
}

ptr = ptr + 1
404

arr + 1
400 + 1 * 4

0	1	2	3	4
17	7	10	12	14
400	404	408	412	416

404
ptr

$$ptr = \underline{ptr + 1}$$

$$400 + 1 \times 4$$
$$= 404$$

$$ptr = 404$$

$$ptr = 408$$
$$408 + 1 \times 4$$

400

$ptr + 1$

$ptr + 1$

$$404 + 1 \times 4$$

408

$ptr + 2$
 $ptr + 3$

ptr + 0

ptr + 1

ptr + 2

ptr + 3

ptr + 4

ptr + 5

arr = 400

0	1	2	3	4	5
17	7	10	12	14	
400	404	408	412	416	

~~ptr arr++~~

~~ptr arr--~~

int arr[5]

~~arr = 400~~

~~arr = arr + 1~~

~~= 400 + 1 * 4~~

~~= 404~~

	15 ₂₀₀							300
	1 ⁴⁰⁰	2 ⁴⁰⁴	3 ⁴⁰⁸	4 ⁴¹²	5 ⁴¹⁶			
	500 ₂₀₀							

int num = 5

15

num ~~200~~ 300

int arr[5] = {1, 2, 3, 4, 5}

int * ptr = &num

constant
500

200

ptr

symbol

name

num

arr

ptr

add
200

400
500

char arr[6] = " 1 23 45 6";

↓
print the Add

char xyz = 'a';

