

DAY #30

Thursday, June 25, 2026 8:30 PM

Integer Array in Depth

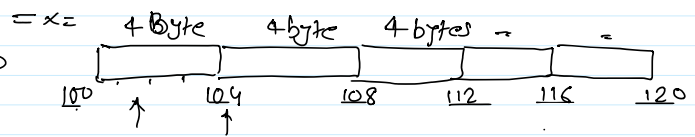
```
int arr[5];
for (int i=0; i<5; i++)
{
    printf("In Enter any no:");
    scanf("%d", &arr[i]);
}

// print array
for (int i=0; i<5; i++)
{
    printf("%d ", arr[i]);
}
```

1 0 1 2 3 4

```
int a;
scanf("%d", &a);
```

```
int arr[5]; // Memory 5x4 = 20
printf("%p", &arr[0]);
printf("%p", &arr[1]);
...
```



0x7ffdb3efbb20 0x7ffdb3efbb24 0x7ffdb3efbb28 0x7ffdb3efbb2c 0x7ffdb3efbb30 ← These are 48 bits add.

// In address 2 nos represent 1 byte or 2 nos are stored in 1 byte

0x7ffdb3efbb20
 1 1 1 1 1 1 ⇒ 6 bytes ⇒ 6B ⇒ 6x8 = 48 bit

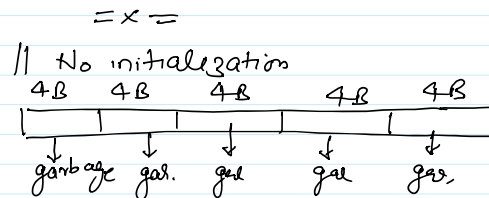
0xffe347a8 0xffe347ac 0xffe347b0 0xffe347b4 0xffe347b8 =

0xffe347a8
 1 1 1 1 4 bytes = 4x8 = 32 bits

Why 64 bit binary didn't use 64 bits, instead only 48 bits??

2^{32} How much memory (RAM) can be used if system is 32 bits = $2^{32} = 4GB$
 2^{64} 17.179869184 GB.

```
int arr[5];
for (int i=0; i<5; i++)
{
    printf("%d ", arr[i]);
}
```



// this program will print garbage / indeterminate value.
 // We should always initialize array

~~arr~~ int arr[5] = { } ⇒ All 0
 OR
 int arr[5] = { 0 } ⇒ All 0

= x =

~~There are 5 elements in array~~

There is an integer array of 5 element/no, but user try to insert value in ~~5th~~ 5th index.

arr[5]; // 0 1 2 3 4

--	--	--	--	--

 ↑
scanf("%d", &arr[5]); // what will happen? 0 1 2 3 4 5

./a.out → You are running this executable:
 & the executable is running stage is know as process

this will crash executable

& generate core dump file if enabled