Arrays

08 August 2023 11:01

Single Dim Array → ✗

```
int a[5];
```

- `int` → Data type
- `a` → name of array
- `5` → Size of array / No. of elements ⇓ has to be a compile time constant

const int i{5}
int a[i] ✗

1. Don't hardcode
2. use const keyword
3. size_t

long Asm

Long long

```
const size_t i{5} {10,11,12,13,14};
int a[i];
```

Stack Memory

0xABF5	10	0 → a[0]
BF9	11	1 → a[1]
BFC	12	2 → a[2]
	13	
	14	4 → a[4]
	x	
	20	

```
for(size_t j{0}; j<i; j++)
    a[j]+=10;
```

Range based for loop

```
for( int x : a)
    cout << x << endl;
```

Break

```
while(true)
{
    if(con)
        break;
```

Continue

```
for( size_t i{0}; i<5; i++)
{
    ____
```

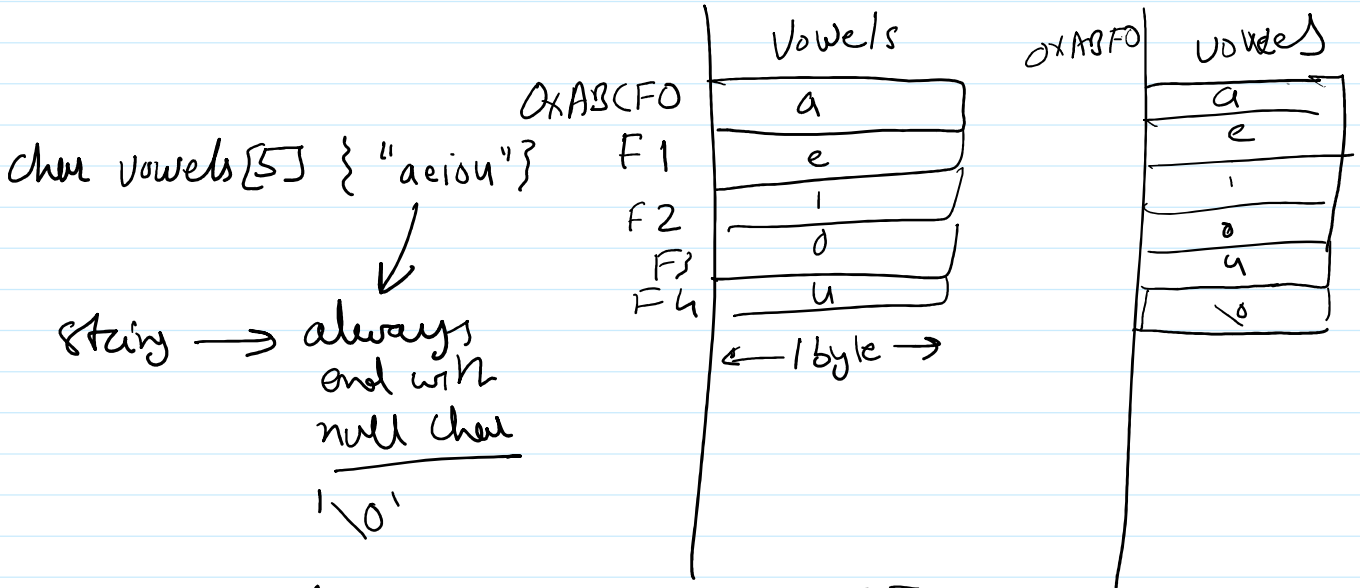
```
if ( con )
    break;
```

```
{
    ~~~~~~
    if ( condition )
        continue;
    ~~~~~~
}
```

(++)

Array of Characters and using them as strings

```
char vowels[]{'a', 'e', 'i', 'o', 'u'};
```



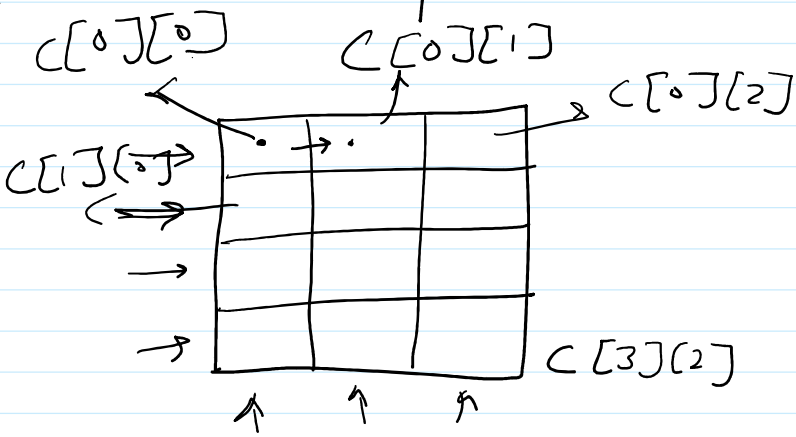

```
char vowels[5] { "aeiou"}
```

String → always end with null char '\0'

Two-dim Array

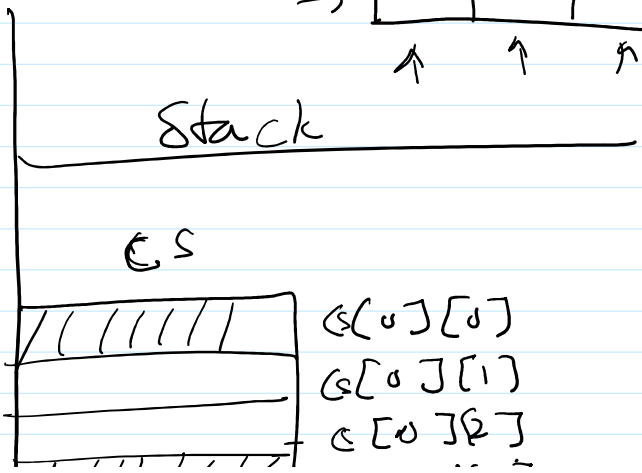
```
int c [4][3]
```

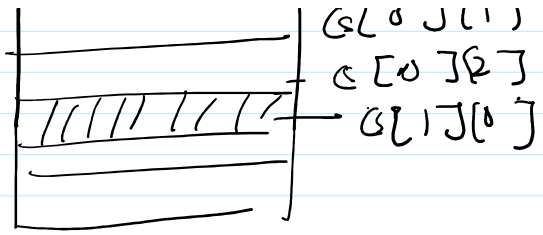
int: data type; c: name; [4]: Row Count; [3]: Column Count




```
c[0][1] = 10;
```

```
const size_t COLS {4}
const size_t ROWS {3}
int c[COLS][ROWS]
```






```
for (size_t r{0}; r < ROWS; r++
    for (size_t c{0}; c < COLS; c++)
        G[r][c] = 10;
```

CS[ ] → Row ref

CS[ ][ ] → Col

Three-dim Array

```
int book[3][4][3]
```

Page Row Col

O	*	X	X
*	O	O	
	O	O	

View → GUI

```
char seats[20][10] → Model
```

initialize →

```
for (
    for seats[i][j] = '*';
```

Show

for for

```
cout << seats[i][j]
```

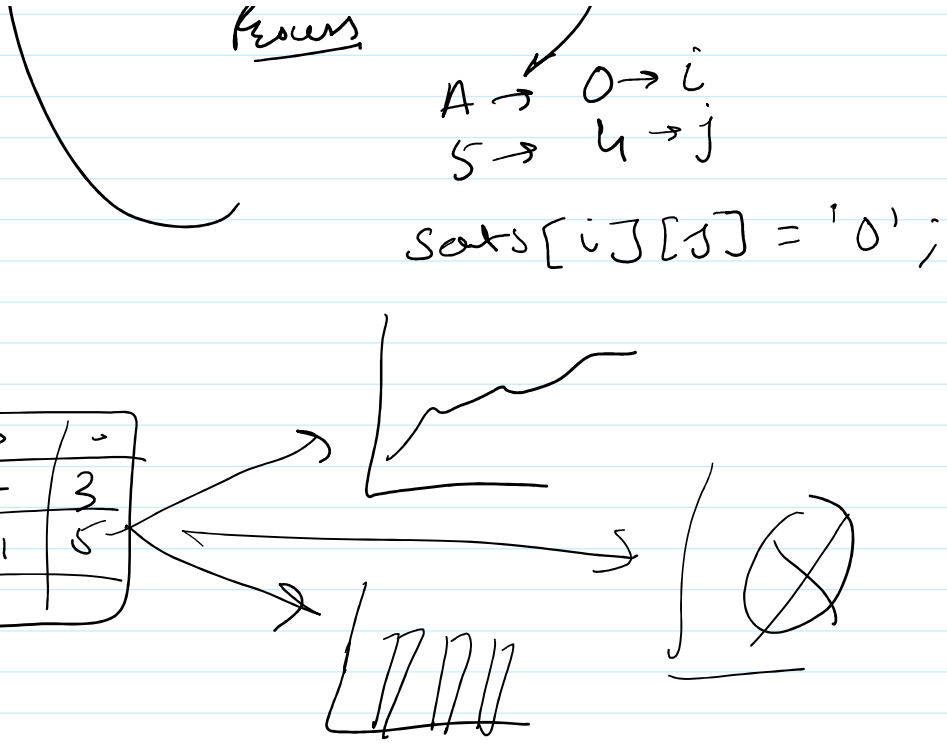
end

Book / take input

cin >> AS

Reserve

n → 0 → i


Rows
A → 0 → i
5 → 4 → j
seats[i][j] = '0';
Excel