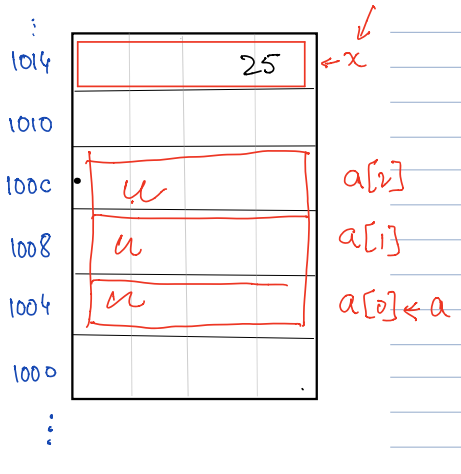
28-01-2019

COLLECTING RELATED DATA

```
int x;
x = 25;
```




```
x = 5;
int a[x];
```

invalid

constant

```
int a[3];
```

type name # of elements

```
int a[3];
```

a[0] = 25;

Arrays

- Homogeneous (same type)
- contiguous


```
for ( int i = 0; i<3 ; i++) {
    cout << a[i] << endl;
}
```

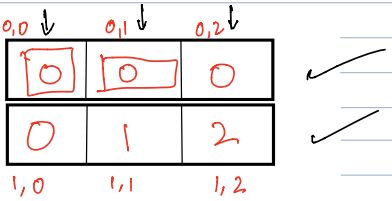
i >=0 i--

i =>

row

2-D Arrays:

```
int a[2][3] ;
```



column

looping over rows

```
for (int i = 0 ; i < 2 ; i++) {
    for (int j = 0; j < 3; j++) {
        a[i][j] = i * j ; // setting values.
        cout << i*j ;
    }
}
```

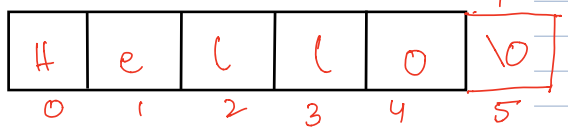
row

looping over columns

Character Arrays:

null terminator

```
#include <iostream>
#include <string>
using namespace std;
```




```
int main(){
string char a[] = "Hello" ;
for (int i = 0 ; i < 6 ; i++) {
    cout << a[i] << endl;
}
cout << a ;
}
```

string.

5

A char array = String

Hello

H
e
l
l
o
\0
7

```
string a = "Hello";
for (int i = 0 ; i < 6 ; i++) {
    cout << a[i] << endl;
}
```

Hello

```
cout << a.length();
cout << a.empty();
```

Structs:

"A student has a name and a roll number."

Objective: create a structure to store student information.

```
#include <iostream>
using namespace std;
struct student {
    string name;
    int roll_no;
};
```

new datatype

```
int main () {
    int a;
```

type → int, name → a

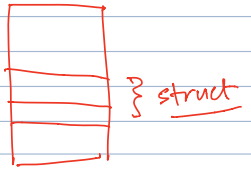
```
Student S1;
S1.name = "Ali";
```

↳ "enter the box"

```
// S1.roll_no = 2
```

S1

name	roll_no
"Ali"	2




```
Student S2;
S2.name = "Bilal";
S2.roll_no = 26;
```

S2

name	roll_no
Bilal	26

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

type: int; name: a; # of elements: 5

```
Student s[5];
```

s → an array of students

```
s[0].name = "Ali";
```

i