Section 8 : Arrays

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Section 8 : Arrays

```
Int A[5] = {1, 2, 3, 4, 5};

For (int I = 0; I < 5; i++) {
        Cout<<A[i]<<endl;
}

For (int x : A) {
        Cout<<A[i]<<endl;
}

Float B[5] = {1.2f, 2.2f, 3.3f, 4.4f};
Char c[5] = {'A', 66, 'C', 68};

Int x[10];

Int d[5] = {2, 4};      ->     [2, 4, 0, 0, 0]
Int e[] = {1,2 ,3 4};    ->    size = 4 automatically
```

For each :

```
For(int x : A) {      // for each x in A (for x in a)
        Cout<<x<<endl;
}
```

Reference : Giving another name to same value

```
For(int &x : A) {      // for each x in A (for x in a)
        ++x ;     // array value will also get modify
}
```

- We can use auto instead of int if we don't know data type. This will not work on pointer. Work only on collection of values, like vector, list, etc.
- We can use exit(0); for termination of program.

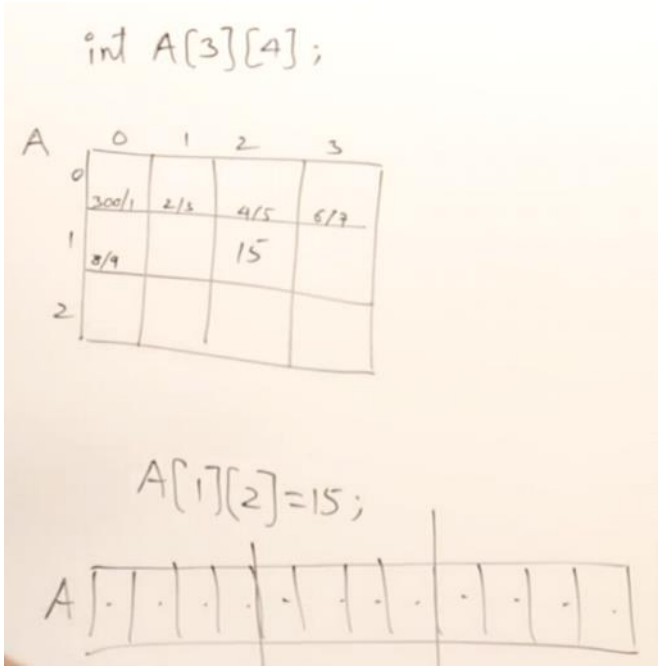
Nested Loop :

```
for(int i=1;i<=5;i++)
{
   for(int j=1;j<=5;j++)
   {
      cout<<"("<<i<<" ,"<<j<<")";
   }
   cout<<endl;
}
```

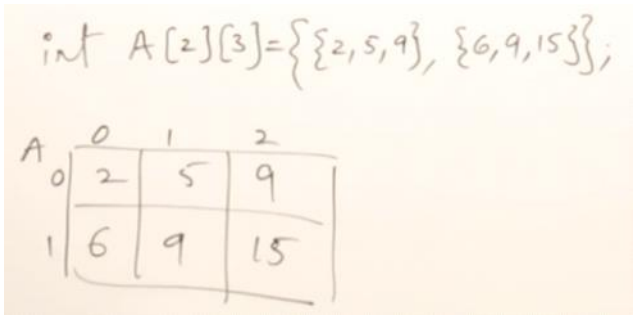
Output :

```
(1,1) (1,2) (1,3) (1,4) (1,5)
(2,1) (2,2) (2,3) (2,4) (2,5)
(3,1) (3,2) (3,3) (3,4) (3,5)
(4,1) (4,2) (4,3) (4,4) (4,5)
(5,1) (5,2) (5,3) (5,4) (5,5)
```

Multidimensional Arrays - 2D Arrays :



In reality it's a single dimension array.




```
int A[2][3]={2,4,6,3,5,7};    // works same as A[2][3]={{2,4,6},{3,5,7}};
for(int i=0;i<2;i++)
{
   for(int j=0;j<3;j++)
   {
      cout<<A[i][j]<<" "; II.
   }
   cout<<endl;
}
```

Using for each in 2d array (use reference) :

```
for(auto &x:A)
{
   for(auto &y:x)
   {
}
```

This will also work

```
   for (auto &i : arr) {
      for (auto &j : i) {
         cout<<j<<" ";
      }
      cout<<endl;
   }
```

- 2D array is an array of rows. we have to define just 1 row as auto &. there is no other method.
- Can't declare array as int a[]; // error