CS 111

arrays

Model declaration for array

BASE_TYPE ARRAY_NAME [CAPACITY]

- This creates CAPACITY variables with BASE TYPE

Model declaration for array

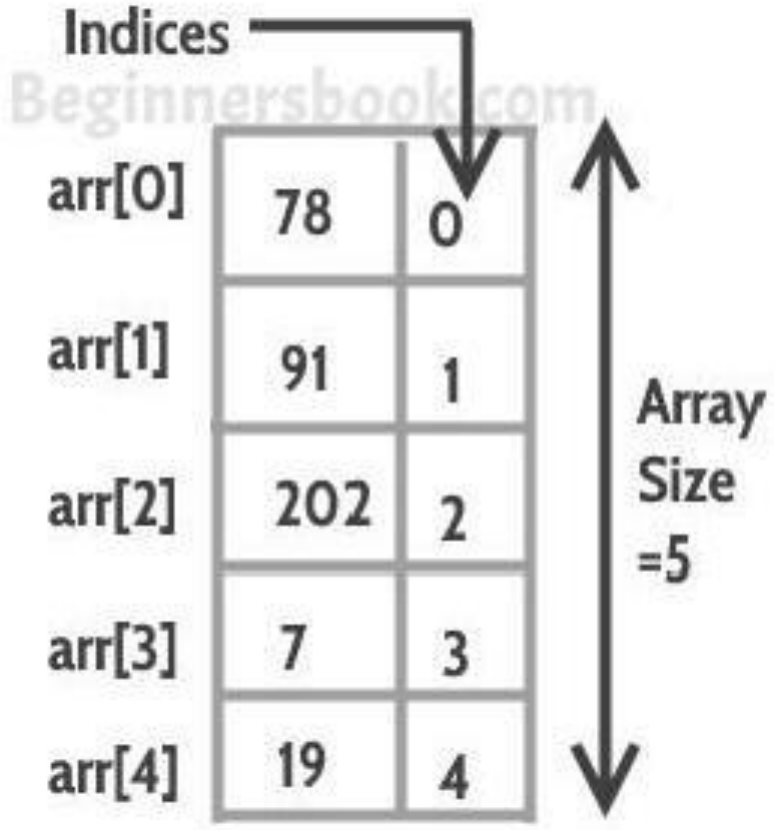
BASE_TYPE ARRAY_NAME [CAPACITY]

- To process all elements in the array we follow this model:

```
for(int x = 0; c < CAPACITY; c++){
    PROCESS ARRAY_NAME [c];
}
```

- The loop hits all array elements because they are numbered from 0 to CAPACITY - 1

int arr[5] = {78, 91, 202, 7, 19}



from https://beginnersbook.com/2017/08/cpp-arrays

Example 1

```
int digits[10] = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9};
// adds 5 to number stored at each array index
for(int c = 0; c < 10; c++){
    digits[c] += 5;
}
```

0	1	2	3	4	5	6	7	8	9

Example 2

```
int digits[10] = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9};
// add 5 to only to elements that are divisible by 3
for(int c = 0; c < 10; c++){
    if(digits[c] % 3 == 0){
        digits[c] += 5;
   }
}
```

0	1	2	3	4	5	6	7	8	9

Example 3

```
int digits[5]; // declare int array
// read in input
for(int i = 0; i < 5; i++){
    cin >> digits[i];

}
// print elements in array
for(int j = 0; j < 5; j++){
    cout << digits[j] << " ";
}
```

0	1	2	3	4

Example 4

```
srand(time(0));
int digits[50]; // declare int array
// read in input
for(int i = 0; i < 50; i++){
    digits[i] = rand() % 10 + 1;
}
```