



ARRAYS AND LOOPS

For-Loops and Arrays



FOR LOOPS AND ARRAYS

- One loop for each array dimension
- C++ arrays are zero indexed: start the loop control variable at 0 using <
- When using loops with multi-dimensional arrays, be sure to match the loops and the indexes correctly

```
int test[10];
```

```
for (int i = 0; i < 10; i++)  
    cout << test[i] << endl;
```

```
float test_score[10][4];
```

```
for (int i = 0; i < 10; i++)  
    for (int j = 0; j < 4; j++)  
        cout << test_score[i][j] << endl;
```



ARRAYS AND DATA

- The size of an array is fixed at the time that the array is created
- How large should we make an array when we don't know much data it must store?
- Design for the worst case and add a safety margin
 - Some array elements at the end will be unused
 - Count how many data items are inserted into the array
 - Use the counter to control for loops

ARRAYS & UNKNOWN DATA VOLUME

INPUT

```
int scores[100];
int score;
int count = 0;

cout << "Enter a score (-1 to stop): ";

cin >> score;
while (score != -1)
{
    scores[count++] = score;
    cin >> score;
}
```

USE / OUTPUT

```
for (int i = 0; i < count; i++)
    cout << array[i] << endl;
```