

# C++ Arrays (Lecture Activities)

## Group Works

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### Exercise 1 (15 min)

1. Declare an array of integers scores with 4 elements.
2. Put in the array with the follows: 20, 15, 12, 47
3. Declare an array of string title with 4 elements.
4. Initialize the array with the follows: "Mid1", "Mid2", "Final", "total".
5. Print the two table of grads (score and title) using for loop.

The output will as the follows

-----

```
Mid1 20
Mid2 15
Final 12
Total 47
```

```
#include <iostream>
```

```
#include <string>
```

```
using namespace std;
```

```
int main( ){
```

```
    // Declare integer arrays with 4 elements
```

```
    int scores[4];
```

```
    // set the scores elements with integer values
```

```
    scores[0]=20;
```

```
    scores[1]=15;
```

```
    scores[2]=12;
```

```
    scores[3]=47;
```

```
    // Declare string array with 4 elements
```

```
    string title[4]={"Mid1","Mid2","Final","Total"};
```

```
    // Loop to print the scores and title elements
```

```
    for(int i=0 ; i< 4; i++)
```

```
    {    // print the array elements in position i
```

```
        cout<<title[i]<<"\t"<<scores[i]<<endl;
```

```
    }
```

```
    return 0;
```

```
}
```

## Exercise 2 (15 min)

1. Declare an array of string title with 4 elements.
2. Initialize the array with the follows: "Mid1", "Mid2", "Final", "total".
3. Declare an array of integers scores with 4 elements.
4. Use the loop to read from the scores array the three scores and calculate total and put the result in the fourth array element.
5. Declare an array of float percentage with 4 elements.
6. Calculate the percentage of the score in each of element, assuming that the full mark is 60
7. Print the three arrays. The output should be as follows

```
-----  
Enter your score in Mid1: 20  
Enter your score in Mid2: 15  
Enter your score in Final: 12
```

```
Mid1  20    33.3%  
Mid2  15    25.0%  
Final 12    20.0%  
Total 47    78.3%
```

```
#include <iostream>  
#include<string>  
using namespace std;  
  
int main( ){  
    // Declare string array with 4 elements  
    string title[4]={"Mid1","Mid2","Final","Total"};  
    // Declare integer arrays with 4 elements  
    int scores[4];  
    // Loop for reading the scores  
    for(int i=0; i<3; i++){  
        cout<<"Enter your score in "<<title[i]<<":";  
        cin>>scores[i];  
    }  
    // loop to sum the scores of the first three elements in scores array  
    int total=0;  
    for(int i=0; i<3; i++){  
        total+=scores[i];  
    }  
    // set the fourth scores to total  
    scores[3]=total;  
    // Declare a float array with 4 elements  
    float percentage[4];  
    //set the format of the float numbers.  
    cout<<fixed;  
    cout.precision(1);  
    // loop to set the percentage elements by calculating the percentage of the scores  
    for(int i=0; i<4; i++){  
        percentage[i]= ((float)scores[i]/60)*100;  
        //print the rows in each array  
        cout<<title[i]<<"\t"<<scores[i]<<"\t"<<percentage[i]<<"%"<<endl;  
    }  
  
    return 0;  
}
```

## Individual Works

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Write a program that reads 5 strings and print them in reverse order.