

Write a program that:

- That reads 1000 integers and print them reversed!
- That reads 1000 integers and find pairs of numbers with sum 12345?
- We can define 1000 variables! But this is a crazy idea!
- Programming languages introduce datatype **array** of **size K**
 - K variables defined in the memory (consecutively)
 - They all of **same data** type
- So now we create an array of size 1000
 - Then print them reversed!
 - That is all

Declare an array

```
10_01.cpp
1 #include<iostream>
2 using namespace std;
3
4 int main() {
5     const int size = 5;
6
7     // Declare 5 positions of type integer
8     int numbers[size] = {10, 2, 7, 5, 3};
9
10
11     numbers[0] = 9;
12     numbers[2] *= 3;
13     numbers[4]++;
14
15     cout<<numbers[4];
16
17     return 0;
18 }
19
20
```

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<terminated> ztemp [C/C++ Application] /home/moustafa/4|

- Line 8 declare the array

Index	0	1	2	3	4
numbers	10	2	7	5	3

- Line 11 changes first number to 9

Index	0	1	2	3	4
numbers	9	2	7	5	3

- Line 12 and 13 also do changes

Index	0	1	2	3	4
numbers	9	2	21	5	4

Printing array forward and backward

```
10_02.cpp
3 using namespace std;
4
5 int main() {
6     const int size = 5;
7
8     // Declare 5 positions of type integer
9     int numbers[size] = {1, 2, 3, 4, 5};
10
11     for (int i = 0; i < size; ++i)
12         cout<<numbers[i]<<" ";
13     cout<<"\n";
14
15     for (int i = 0; i < size; ++i)
16         cout<<numbers[size-i-1]<<" ";
17     cout<<"\n";
18
19     return 0;
20 }
21
```

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```
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1 2 3 4 5
5 4 3 2 1
|
```

- Remember last element position is size-1
- Trace the backward
 - Index 4
 - Index 3
 - Index 2
 - Index 1
 - Index 0

Read 5 numbers in array - find minimum

```
10_03.cpp
3
4 int main() {
5     const int size = 5;
6
7     // Declare 5 positions of type integer
8     int numbers[size];
9
10    for (int i = 0; i < size; ++i)
11        cin >> numbers[i];
12
13    int minimum = numbers[0];
14    for (int i = 1; i < size; ++i)
15        if (minimum > numbers[i])
16            minimum = numbers[i];
17
18    cout << minimum;
19
20    return 0;
21 }
```

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70 50 20 100 200
20|

- Remember: Deal with each cell as a variable
 - read/write/assign