

## Review of the Lectures

## Project 3: Questions?

## How to debug?

Array: a very basic data structure

- Why do we need to use array?  
We can declare/define a lot of variables

- How to declare an array

```
int array[5];
```

- How to initialize an array?

```
int array[5] = {1, 2, 3, 4, 5}; or
```

```
int array[] = {1, 2, 3, 4, 5};
```

1	2	3	4	5
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- How to access the elements in an array? **Use integer indices!!**  
1<sup>st</sup> element: array[0]; 2<sup>nd</sup> element: array[1]; ...; last element: array[4]  
The indices should be non-negative integers, and should be in the range!! Otherwise,

**undefined behavior**

- Common mistakes!
  - Index out of range!! E.g., array[5];
  - **What is the difference between array and string?? So, always keep a variable to indicate the length of an array**
  - Try to output an array in this way
 

```
cout << array << endl;           // This doesn't work!!!
for (int i=0; i < 5; i++)       // This works
{
    cout << array[i] << endl;
}
```