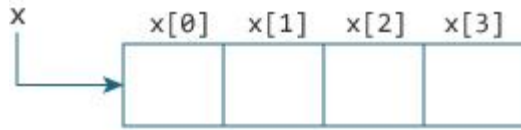


# CmpE 150 - Week 10

Section - 02

# Pointers and Arrays

`x` and `&x[0]` are equivalent



# Bubble Sort

```
void bubbleSort(int arr[], int n)
{
    int i, j;
    for (i = 0; i < n-1; i++)

        // Last i elements are already in place
        for (j = 0; j < n-i-1; j++)
            if (arr[j] > arr[j+1])
                swap(&arr[j], &arr[j+1]);
}
```

i=0	j	0	1	2	3	4	5	6	7
	0	3	4	5	4	2	1	6	0
	1	3	4	5	4	2	1	6	0
	2	3	4	4	5	2	1	6	0
	3	3	4	4	2	5	1	6	0
	4	3	4	4	2	1	5	6	0
	5	3	4	4	2	1	5	6	0
	6	3	4	4	2	1	5	0	6

i=1	j	0	1	2	3	4	5	6	7
	0	3	4	4	2	1	5	0	6
	1	3	4	4	2	1	5	0	6
	2	3	4	2	4	1	5	0	6
	3	3	4	2	1	4	5	0	6
	4	3	4	2	1	4	5	0	6
	5	3	4	2	1	4	0	5	6

i=2	j	0	1	2	3	4	5	6	7
	0	3	4	2	1	4	0	5	6
	1	3	2	4	1	4	0	5	6
	2	3	2	1	4	4	0	5	6
	3	3	2	1	4	4	0	5	6
	4	3	2	1	4	0	4	5	6

i=3	j	0	1	2	3	4	5	6	7
	0	2	3	1	4	0	4	5	6
	1	2	1	3	4	0	4	5	6
	2	2	1	3	4	0	4	5	6
	3	2	1	3	0	4	4	5	6

i=4	j	0	1	2	3	4	5	6	7
	0	1	2	3	0	4	4	5	6
	1	1	2	3	0	4	4	5	6
	2	1	2	0	3	4	4	5	6

i=5	j	0	1	2	3	4	5	6	7
	0	1	2	0	3	4	4	5	6
	1	1	0	2	3	4	4	5	6

i=6	j	0	1	2	3	4	5	6	7
	0	0	1	2	3	4	4	5	6

# Multidimensional Arrays

	Col 1	Col 2	Col 3	Col 4
Row 1	1	2	3	4
Row 2	5	6	7	8
Row 3	9	10	11	12

