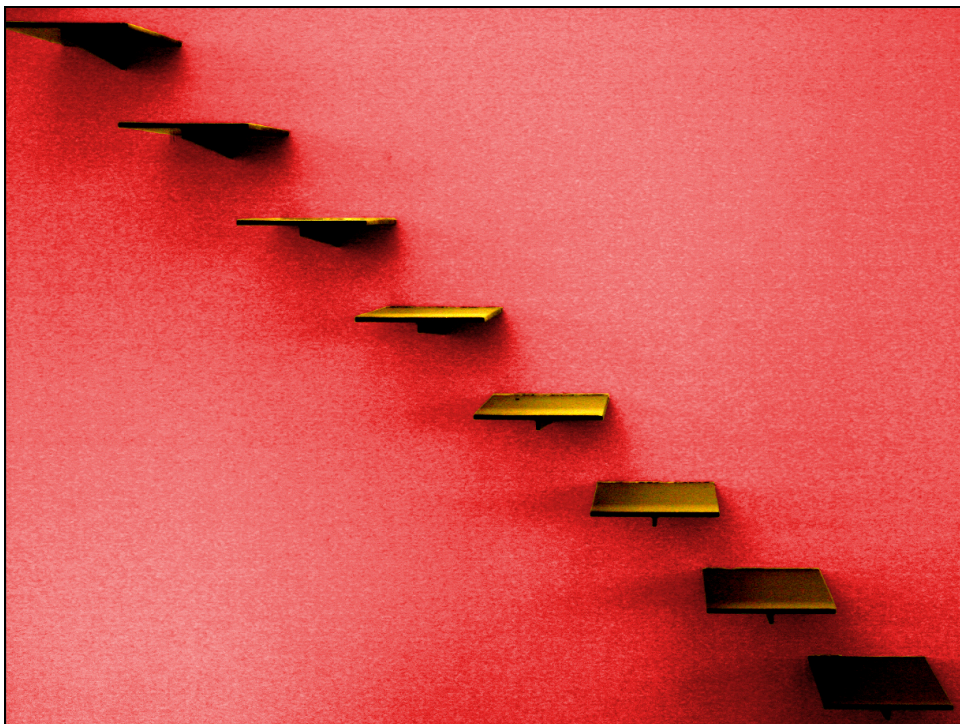


ARRAYS and FOR LOOPS



```
[0, 1, 2, 3]
```

```
for (int i=0;  
     i<4;  
     i=i+1)  
{...}
```

Map

3
↓
9

[0,	1,	2,	3]
↓	↓	↓	↓
[0,	1,	4,	9]

Map

```
y = square(x);
```

```
for (int i=0; i<4; i=i+1){  
    y[i] = square(x[i]);  
}
```

Reduce

`[0, 1, 2, 3]` ➔ 6

`z = 0`

`z = 0+0 = 0`

`z = 0+1 = 1`

`z = 1+2 = 3`

`z = 3+3 = 6`

Reduce

[0, 1, 2, 3] → 6

```
int z = 0;
for (int i=0;
     i<4;
     i=i+1){
    z += x[i];
}
```

Reduce

[0, 1, 2, 3] → 6

```
int z = 0;
for (int i=0;
     i<x.length;
     i=i+1){
    z += x[i];
}
```

Reduce

`[0, 1, 2, 3] → 6`

```
int z = 0;
for (int elem: x){
    z += elem;
}
```

MAP

`[0, 1, 2, 3]`
↓ ↓ ↓ ↓

`[0, 1, 4, 9]`

```
for (int i: x)
{y[i]=x[i]*x[i];}
```

REDUCE

`[0, 1, 2, 3] → 6`

```
int z=0;
for (int e: x){z+=e;}
```