Creating and Understanding Collections

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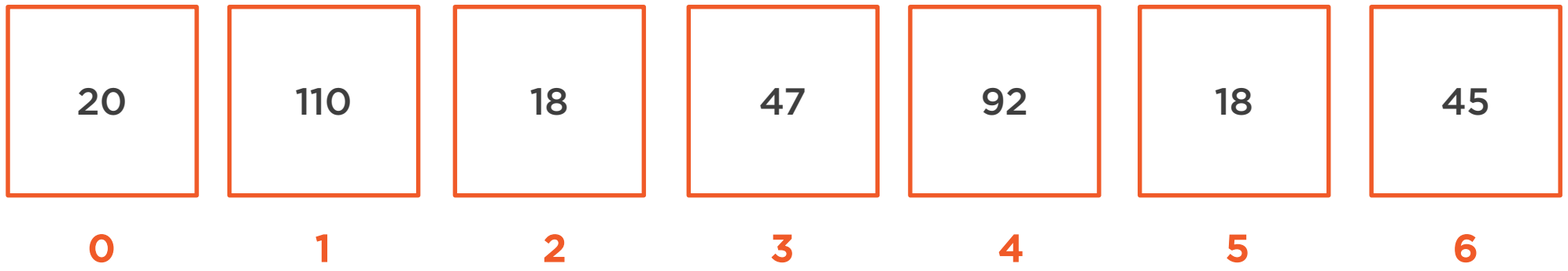
Arrays

```
Int[] someNumbersArray = new int[7];
```

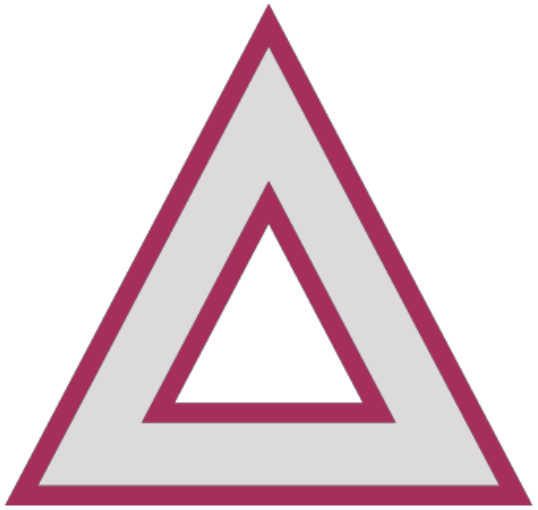


```
Person[] peopleArray = new Person[7];

peopleArray[4] = new Person(){ Name = "Frodo" };

Person person = peopleArray[4];

Console.WriteLine($"person: {person.Name}");
```

The foreach Loop

```
peopleArray[0] = new Person() { Name = "John" };
peopleArray[1] = new Person() { Name = "Paul" };
peopleArray[2] = new Person() { Name = "George" };
peopleArray[3] = new Person() { Name = "Ringo" };
peopleArray[4] = new Person() { Name = "Frodo" };
peopleArray[5] = new Person() { Name = "Merry" };
peopleArray[6] = new Person() { Name = "Pippin" };

foreach (Person person in peopleArray) {
    Console.WriteLine($"Name = {person.Name}");
}
```

Limitations of Arrays



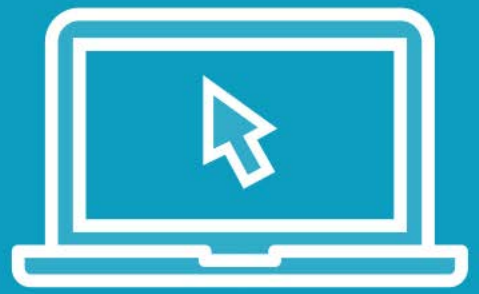
Must declare size

- Too large: waste space
- Too small, run out of room

Easy to run past the end (crash)

- Person oops = peopleArray[7];

Demo



Arrays

List<T>

```
List<Person> people = new List<Person>();
```

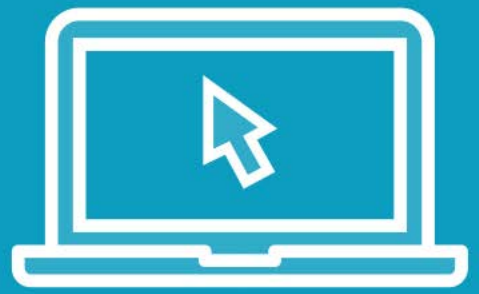
```
Person john = new Person() { Name = "John" };
people.Add(john);
```

```
List<Person> people = new List<Person>();
List<String> strings = new List<String>();
```

List<T>

Dictionary<K,T>

Demo



List<T>

Dictionary<K,T>