

Working with Ranges

So far we have added, accessed, and removed single elements in a list. What if we wanted to add, access, or remove multiple elements at once?

In the world of lists we call a subsequence of elements a *range*. For example, this list has 5 elements:

```
[ "first", "second", "third", "fourth", "fifth" ]
```

We can say the range of elements from index 1 to 3 is:

```
[ "second", "third", "fourth" ]
```

Here are four common range-related methods:

`AddRange()` — takes an array or list as an argument. Adds the values to the end of the list. Returns nothing.

`InsertRange()` — takes an `int` and array or list as an argument. Adds the values at the `int` index. Returns nothing.

`RemoveRange()` — takes two `int` values. The first `int` is the index at which to begin removing and the second `int` is the number of elements to remove. Returns nothing.

`GetRange()` — takes two `int` values. The first `int` is the index of the first desired element and the second `int` is the number of elements in the desired range. Returns a list of the same type.

Here is each one in action:

```
List<string> places = new List<string> { "first", "second" };  
  
places.AddRange(new string[] { "fifth", "sixth" });  
// List is "first", "second", "fifth", "sixth"  
places.InsertRange(2, new string[] { "third", "fourth" });  
// List is [ "first", "second", "third", "fourth", "fifth", "sixth" ]  
places.RemoveRange(4, 2);
```

```
// List is [ "first", "second", "third", "fourth" ]  
List<string> newPlaces = places.GetRange(0, 3);  
// New list is [ "first", "second", "third" ]
```

You don't need to memorize these methods, but you should be familiar with the concept of ranges! You can always look up the methods again in the [Microsoft documentation](#).

☒ Instructions

1.
Use `GetRange()` to get the first three elements in the `marathons` list.

Store the result in a new list variable called `topMarathons`.

Hint



`GetRange()` takes two `int` arguments:

The index of the first element in the range

The number of the elements in the range

2.
Loop through the `topMarathons` list and print each value to the console.

Hint



Use a `foreach` loop to iterate over the list.