Exercise – Applying Pointers

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```
// PRE: [b, e) and [o, o+(e-b)) are disjoint
//       valid ranges
void f (int* b, int* e, int* o) {
    while (b != e) {
        --e;
        *o = *e;
        ++o;
    }
}
```

Variable	Value
b	●
e	●
o	●

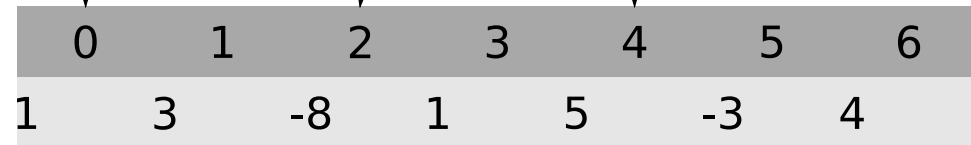| 0	1	2	3	4	5	6
1	3	-8	1	5	-3	4

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Now determine a POST-condition for the function.

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    while (b != e) {
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    }
}
```

Exercise – Applying Pointers

```
// PRE:  [b, e) and [o, o+(e-b)) are disjoint
//       valid ranges
// POST: The range [b, e) is copied in reverse
//       order into the range [o, o+(e-b))
void f (int* b, int* e, int* o) {
    while (b != e) {
        --e;
        *o = *e;
        ++o;
    }
}
```

Exercise – Valid Inputs

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- Which of these inputs are valid?

```
int* a = new int[5];
// Initialise a.
  a)   f(a, a+5, a+5);
  b)   f(a, a+2, a+3);
  c)   f(a, a+3, a+2);
```

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// PRE: [b, e) and [o, o+(e-b)) are disjoint
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void f (int* b, int* e, int* o) {
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// Initialise a.
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   c)   f(a, a+3, a+2);
```

`[o,o+(e-b))` is **out of bounds**

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Exercise – `const` Correctness

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- Make the function `const`-correct.

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// PRE: [b, e) and [o, o+(e-b)) are disjoint
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        *o = *e;
        ++o;
    }
}
```

Exercise – `const` Correctness

- Make the function `const`-correct.

```
// PRE: [b, e) and [o, o+(e-b)) are disjoint
//      valid ranges
void f (const int* const b, const int* e, int* o) {
    while (b != e) {
        --e;
        *o = *e;
        ++o;
    }
}
```