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Intro to CS: Java

UNI: cs3544

Review Exercises

R7.6

a.

i goes through all indices

1 + 2 + 3 + 4 + 5 + 4 + 3 + 2 + 1 + 0 = 25

total = 25

b.

i goes through indices 0, 2, 4, 6, 8

total = 1 + 3 + 5 + 3 + 1 = 13

c.

i goes through indices 1, 3, 5, 7, 9

total = 2 + 4 + 4 + 2 + 0 = 12

d.

i goes through indices 2, 3, 4, 5, 6, 7, 8, 9, and 10

Because index 10 is beyond the index size of the array, this throws an ArrayIndexOutoBounds Exception.

e.

i goes through indices 1, 2, 4, 8
total = 2 + 3 + 5 + 1 = 11

f.

All indices
total = 25

g.

i = 9, 7, 5, 3, 1
total = 0 + 2 + 4 + 4 + 2 = 12

h.

All indices
total = -1

R7.13

a.

```
for ( int elem : values )
{
	total += elem;
}
```

b.

```
int currentSize = 0;
for ( int elem : values )
{
	if (currentSize > 0)
	{
		total += elem;
	}
	currentSize++;
}
```

c.

```
for ( int elem : values )
{
	if ( elem == target ) {
		return i;
	}
}
```

R7.23

Initialize int variable named size to 1;
Initialize int variable named max to 0;

For each index of the array, from index 1 to the index of the array length - 1 (basic for loop) {

```
if the value of the current array index == the value of the (current – 1) index of the array
{
	increment size by 1;

	if size is greater than max, then set max = size
 }
else
{
	set size = 1;
}
```

}

```
// the final value of max at the completion of this for loop, will represent the computed
// length of the longest run in the array
```

R7.32

a. True
b. False
c. False
d. False
e. False
f. True
g. True

R7.33

a.

```
int i = 0;
boolean congruentArrayl = true;


while (i < arrayList1.size() && congruentArrayl) {
            if (arrayList1.get(i) != arrayList2.get(i)) {
                  congruentArrayl = false;
            }
            i++;
      }


System.out.println("The statement that these two array lists "
            + "are congruent, is: " + congruentArrayl);
}
```

b.

```
ArrayList<String> copiedArrayList = new ArrayList<String>(arrayList1);

//OR

for (int it = 0; it < arrayList1.size(); it++ ) {
            copiedArrayList.add(arrayList1.get(it));
}
```

c.

```
 for (int it = 0; it < arrayListInt.size(); it++) {
            arrayListInt.set(it, 0);
}
```

d.

```
int it = 0;
int size = arrayList.size();
while (it < size) {
      arrayList.remove(0);
```

```
        it++;
    }
```