**Deletions**

The opposite of inserting an element into an array is the act of deleting an element from an array. This involves the removal of the element and the shifting of each subsequent element one place to the left so as to fill the spot formerly occupied by the deleted element. As a result of this shifting, the last array element becomes empty. The typical way to handle this situation is to fill the last array element with a null reference. Occasionally, however, a programmer may choose to fill it with a default element of some kind.

**Exercise 171**

Add a new class method delete to the Item class. This method takes two arguments — an Item[] array and an int k — and deletes the kth element from array, moving any subsequent elements one place to the left, and replacing the last element of the array with a null reference.

public class Item   
{   
  private int myN;   
  
  public Item( int n )   
  {   
    myN = n;   
  }   
  
  public String toString()   
  {   
    return "Item: " + myN;   
  }   
  
  public int getN()    
  {   
    return myN;   
  }   
  
  public static Item[] makeItemArray( int len )   
  {   
    Item[] a = new Item[ len ];   
    int i;   
    for ( i = 0 ; i < len ; i++ )   
      a[ i ] = new Item( i );   
    return a;   
  }   
     
  public static void displayArray( Item[] array )   
  {   
    for ( Item item : array )   
      System.out.println( item );   
  }

public static void delete( Item[] array, int k )

 {

   int lastIdx = array.length - 1;

   int i;

   for ( i = k ; i < lastIdx ; i++ )

     array[ i ] = array[ i+1 ];

   array[ lastIdx ] = null;

 }

}   
  
public class MainClass   
{   
  public static void main( String[] args )   
  {   
    Item[] array = Item.makeItemArray(  );   
  
    System.out.println( "Before: " );   
    Item.displayArray( array );   
  
    // delete an item   
    Item.delete( array,  );   
  
    System.out.println( "\nAfter: " );   
    Item.displayArray( array );   
  }   
}

Before:    
Item: 0   
Item: 1   
Item: 2   
Item: 3   
Item: 4   
Item: 5   
Item: 6   
Item: 7   
  
After:    
Item: 0   
Item: 1   
Item: 2   
Item: 4   
Item: 5   
Item: 6   
Item: 7   
null