********** OUTPUT **********

ORIGINAL CODE:

It did not consider the over run in respect to item location

```
Welcome to Online IDE!! Happy Coding :)
[7, 1, 3, 1]

Index: 0 value: 7 is greater than list size: 4
Index: 1 moved forward to index: 2
Index3: 2 failed to move forward.
Exception in thread "main"
java.lang.ArrayIndexOutOfBoundsException: Index 4 out of bounds for length 4
    at Main.main(Main.java:87)


** Process exited - Return Code: 1 **
```

RESOLVED:

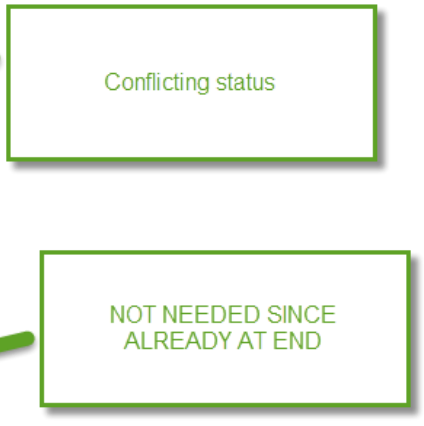
```
Welcome to Online IDE!! Happy Coding :)
[7, 1, 3, 1]

Index: 0 value: 7 is greater than list size from its position: 0
Index: 1 moved forward to index: 2
Index: 2 value: 3 is greater than list size from its position: 2
Index: 3 incorrect last index value. Should be 0.
FALSE
```

FURTHER VIGOROUS TESTING WITH FOLLOWING ARRAY:

```
int[] nums = new int[]{1,1,1,1,3,2,0,0};
```

OLD CODE:

```
Index: 0 moved forward to index: 1
Index: 1 moved forward to index: 2
Index: 2 moved forward to index: 3
Index: 3 moved forward to index: 4
Index: 4 failed to move forward.
Index: 4 moved forward to index: 7
Index: 6. No movement forward - 0 value
Index: 5 moved forward to index: 7
Index: 6. No movement forward - 0 value
Index: 5. This will reach end. Value 0 detected at end
Index: 6. No movement forward - 0 value
Index: 7. No movement forward - 0 value
Index: 7. This will reach end. Value 0 detected at end
FALSE
```



NEW CODE:
Also gives status.. Any FAIL will send output to FALSE at end

```
Welcome to Online IDE!! Happy Coding :)
[1, 1, 1, 1, 3, 2, 0, 0]

Index: 0 moved forward to index: 1  :PASS
Index: 1 moved forward to index: 2  :PASS
Index: 2 moved forward to index: 3  :PASS
Index: 3 moved forward to index: 4  :PASS
Index: 4 failed to move forward  :FAIL
Index: 5 moved forward to index: 7  :PASS
Index: 6. No movement forward - 0 value  :PASS
Index: 5. This will reach end. Value 0 detected at end  :PASS
Index: 6 failed to move forward.
Index: 7. This will reach end. Value 0 detected at end  :PASS
FALSE


** Process exited - Return Code: 0 **
```

CODE

```
/*
Online Java - IDE, Code Editor, Compiler
Online Java is a quick and easy tool that helps you to build, compile, test your programs online.
*/
import java.util.ArrayList;


public class Main
{
public static void main(String[] args) {
System.out.println("Welcome to Online IDE!! Happy Coding :)");
int[] nums = new int[]{1,1,12,1,0,3,0,0,1,1,3,0,0,1};
boolean moveForward=true;
String numbers = java.util.Arrays.toString(nums);
System.out.println(numbers+"\n");
boolean [] outcome = new boolean[nums.length];
int falseCount=0;
boolean forward;
boolean flag;
boolean zeroVerified=false;


for (int i=0; i<nums.length; i++)
{
```

```
   forward=false;
   flag=true;
   zeroVerified=false;

if (nums[i]>nums.length)
        {
           System.out.println("Index: " + i + " value: " + nums[i]+ " is greater than list size from its
position: " + i + "  :FAIL");
           falseCount++;
           i++;
        }
        if (i+nums[i]>nums.length-1)
        {
           System.out.println("Index: " + i + " value: " + nums[i]+ " is greater than list size from its
position: " + i + "  :FAIL");
           moveForward=false;
           outcome[i]=false;
           falseCount++;
           i++;

        }



moveForward=true;

if(i!=nums.length)
{
if (i==nums.length-1)
{
if (nums[i]==0 && forward==true)
{
System.out.println("Index3: " + (i) + ". No movement forward - 0 value" + "  :PASS");
zeroVerified=true;
break;

//System.out.println("FALSE");
//System.exit(0);
}

if (i!=nums.length-1 && zeroVerified==false)
{
System.out.println("Index: " + (i) + ". No movement forward - 0 value" + "  :FAIL");
}



}
if (i!=nums.length-1)
{
if (nums[i]==0 && forward==true)
{
   //System.out.println("What is value of i:" + i);

System.out.println("Index1: " + i + ". No movement forward - 0 value" + "  :PASS");
```

```
if (i==0)
{
falseCount++;
}
//System.out.println("FALSE");
//System.exit(0);
}









}
if (i!=nums.length-1)
{
if (nums[i]==1 && nums[i+1]>0 && i+nums[i]<nums.length)
{
System.out.println("Index: " + i + " moved forward to index: "+ (i+1) + "  :PASS");
outcome[i]=true;
forward=true;
}

if (nums[i]==1 && nums[i+1]==0 && i+1!=nums.length-1)
{
System.out.println("Index: " + i + " moved forward to index: "+ (i+1) + "  :PASS");
moveForward=false;
outcome[i]=false;
//break;
}
}

if (nums[i]==0 && i!=nums.length-1 /*&& zeroVerified==false*/)
{
System.out.println("Index1: " + i + " failed to move forward." + "  :FAIL");
moveForward=false;
outcome[i]=false;
//break;
}

if (nums[i]!=0 && i==nums.length-1)
{
System.out.println("Index: " + i + " incorrect last index value. Should be 0." + "  :FAIL");
falseCount++;
moveForward=false;
outcome[i]=false;
//break;
}
for (int j=1;j<nums[i];j++)
{
if (nums[i+j]>0  &&   nums[i]>0 /*&& zeroVerified==false*/)
{
System.out.println("Index2: " + i + " failed to move forward" + "  :FAIL");
moveForward=false;
```

```
outcome[i]=false;
falseCount++;
forward=false;
//break;
}


if (i+nums[i]<nums.length)
{
   for (int zeroCheck=1;zeroCheck<nums[i];zeroCheck++)
   {


      if (nums[zeroCheck+i]>0)
      {
         flag=false;
      }

      if (nums[zeroCheck+i]==0)
      {
         System.out.println("Index5: " + (i+zeroCheck) + ". No movement forward - 0 value" + "
:PASS" );
         //flag=false;
      }

   }

if (flag!=false)
{
System.out.println("Index: " + i + " moved forward to index: "+ (i+nums[i]) + "  :PASS");
}

if (flag==true)
{
forward=true;
outcome[i]=true;
System.out.println("Index2: " + (i+j) + ". No movement forward - 0 value" + "  :PASS" );
j=nums.length;
//zeroVerified=true;
}



}
}
if (nums[nums.length-1]==0)
{
if (nums[i+nums[i]]==0 && i+nums[i]==nums.length-1) // This works fine. It reaches end
// on two scenarios. Where the last element has a 0 value. It also ensures
{
if(moveForward)
{
System.out.println("Index: " + i + ". This will reach end. Value 0 detected at end" + "  :PASS");
outcome[i]=true;
}
```

```
}
}
}
}
for (boolean b: outcome)
{
if (falseCount==0)
{
System.out.println("TRUE");
break;
}
if (!b)
{
System.out.println("FALSE");
System.exit(0);
falseCount++;
}
}
}
}
```