## Train

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Ex1Train {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
  
 **int** n = Integer.*parseInt*(scanner.nextLine());  
 **int** [] wagon = **new int**[n];  
 **int** sum = 0;  
 **for** (**int** i = 0; i <wagon.**length** ; i++) {  
 wagon[i]=Integer.*parseInt*(scanner.nextLine());  
 sum+=wagon[i];  
 System.***out***.print(wagon[i]+**" "**);  
 }  
 System.***out***.println(**"\n"**+sum);  
 }  
}

## Common Elements

**package** Arrays2018;  
  
**import** java.util.Scanner;  
  
**public class** Ex2CommonElements {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
  
 String input1 = scanner.nextLine();  
 String input2 = scanner.nextLine();  
  
 String[] arr1 = input1.split(**" "**);  
 String[] arr2 = input2.split(**" "**);  
  
 **for** (**int** i = 0; i < arr2.**length**; i++) {  
 **for** (**int** j = 0; j < arr1.**length**; j++) {  
 **if** (arr2[i].equals(arr1[j])) {  
 System.***out***.print(arr1[j] + **" "**);  
 }  
  
 }  
  
  
 }  
 }  
}

## Zig-Zag Arrays

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Ex3ZigZagArrays {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
  
 **int** n = Integer.*parseInt*(scanner.nextLine());  
  
 String line1 = **""**;  
 String line2 = **""**;  
 **for** (**int** i = 1; i <= n; i++) {  
 **int**[] input = Arrays.*stream*(scanner.nextLine().split(**" "**)).mapToInt(Integer::*parseInt*).toArray();  
 **if** (i % 2 == 0) {  
 line1 += **" "** + input[0];  
 line2 += **" "** + input[1];  
 } **else** {  
 line1 += **" "** + input[1];  
 line2 += **" "** + input[0];  
 }  
  
 }  
 System.***out***.println(line2);  
 System.***out***.println(line1);  
  
 }  
}

## Array Rotation

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Ex4ArrayRotation {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
  
 **int**[] input = Arrays.*stream*(scanner.nextLine().split(**" "**)).mapToInt(Integer::*parseInt*).toArray();  
 **int** n = Integer.*parseInt*(scanner.nextLine());  
  
 **for** (**int** i = 0; i < n; i++) {  
 **int** first = input[0];  
 **for** (**int** j = 0; j < input.**length** - 1; j++) {  
 input[j] = input[j + 1];  
 }  
 input[input.**length** - 1] = first;  
 }  
 **for** (**int** i = 0; i < input.**length**; i++) {  
 System.***out***.print(input[i]+**" "**);  
  
 }  
 }  
}

## Top Integers

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Ex5TopIntegers {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
  
 **int**[] input = Arrays.*stream*(scanner.nextLine().split(**" "**)).mapToInt(Integer::*parseInt*).toArray();  
 **for** (**int** i = 0; i < input.**length**; i++) {  
 **boolean** bigger = **true**;  
 **for** (**int** j = i + 1; j < input.**length**; j++) {  
 **if** (input[i] <= input[j]) {  
 bigger = **false**;  
 }  
 }  
 **if** (bigger) {  
 System.***out***.print(input[i] + **" "**);  
 }  
 }  
 }  
}

## Equal Sums

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Ex6EqualSum {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
 **int**[] input = Arrays.*stream*(scanner.nextLine().split(**" "**)).mapToInt(Integer::*parseInt*).toArray();  
 **for** (**int** i = 0; i < input.**length**; i++) {  
  
 **int** leftSum = 0;  
 **int** rightSum = 0;  
 **for** (**int** j = i + 1; j < input.**length**; j++) {  
 rightSum += input[j];  
  
 }  
 **for** (**int** j = i; j > 0; j--) {  
 leftSum += input[j - 1];  
 }  
 **if** (leftSum == rightSum) {  
 System.***out***.println(i);  
 **return**;  
 } **else** {  
  
 leftSum = 0;  
 rightSum = 0;  
 }  
 }  
 System.***out***.println(**"no"**);  
  
 }  
}

## Max Sequence of Equal Elements

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Ex7MaxSequenceOfEqualElements {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
  
 **int**[] input = Arrays.*stream*(scanner.nextLine().split(**" "**)).mapToInt(Integer::*parseInt*).toArray();  
  
 **int** length = 0;  
 **int** maxLength = 0;  
 **int** start = 0;  
  
 **for** (**int** i = input.**length** - 1; i > 0; i--) {  
  
 **if** (input[i] == input[i - 1]) {  
 length++;  
 **if** (maxLength <= length) {  
 maxLength = length;  
 start = i-1;  
  
 }  
 } **else** {  
 length = 0;  
 }  
  
 }  
 **for** (**int** i = start; i <= maxLength+start; i++) {  
 System.***out***.print(input[i] + **" "**);  
 }  
 }  
}

## Magic Sum

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Ex8MagicSum {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
  
 **int**[] input = Arrays.*stream*(scanner.nextLine().split(**" "**)).mapToInt(Integer::*parseInt*).toArray();  
 **int** sum = Integer.*parseInt*(scanner.nextLine());  
  
 **for** (**int** i = 0; i < input.**length**; i++) {  
 **for** (**int** j = i + 1; j < input.**length**; j++) {  
 **if** (input[i] + input[j] == sum)  
 System.***out***.println(input[i] + **" "** + input[j]);  
 }  
  
  
 }  
 }  
}

## \*Kamino Factory

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Ex9KaminoFactory {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
  
 **int** n = Integer.*parseInt*(scanner.nextLine());  
 String mainInput = scanner.nextLine();  
  
 **int** maxLength = 0;  
 **int** currentLength = 0;  
 **int** position = 1000000000;  
 **int** currentPosition = 0;  
 **int** maxSum = 0;  
 **int** currentSum = 0;  
 **int** count = 0;  
 **int** bestCount = 0;  
 String bestLocalDna = **""**;  
 **char**[] result = **new char**[n];  
 **while** (!mainInput.equals(**"Clone them!"**)) {  
 count++;  
 String command = mainInput.replaceAll(**"!+"**, **""**);  
 String[] input = command.split(**"0"**);  
  
 **for** (**int** i = 0; i < input.**length**; i++) {  
 currentSum += input[i].length();  
 **if** (input[i].length() > currentLength) {  
 currentLength = input[i].length();  
 bestLocalDna = input[i];  
  
 }  
 }  
 currentPosition = command.indexOf(bestLocalDna);  
  
 **if** (currentLength > maxLength) {  
 maxLength = currentLength;  
 maxSum = currentSum;  
 position = currentPosition;  
 bestCount=count;  
 result = command.toCharArray();  
 } **else if** (currentLength == maxLength && (position > currentPosition || currentSum > maxSum)) {  
  
 maxLength = currentLength;  
 maxSum = currentSum;  
 position = currentPosition;  
 bestCount=count;  
 result = command.toCharArray();  
  
 } **else if** (count == 1) {  
 maxLength = currentLength;  
 maxSum = currentSum;  
 position = currentPosition;  
 bestCount=count;  
 result = command.toCharArray();  
 }  
  
  
 currentLength = 0;  
 currentPosition = 0;  
 currentSum = 0;  
  
 mainInput = scanner.nextLine();  
  
 }  
 System.***out***.printf(**"Best DNA sample %d with sum: %d.\n"**, bestCount, maxSum);  
 **for** (**char** res :  
 result) {  
 System.***out***.print(res + **" "**);  
  
 }  
 }  
}

## \*LadyBugs

**package** Arrays2018;  
  
**import** java.util.Arrays;  
**import** java.util.Scanner;  
  
**public class** Lab {  
 **public static void** main(String[] args) {  
 Scanner scanner = **new** Scanner(System.***in***);  
 **int** sizeField = Integer.*parseInt*(scanner.nextLine());  
 **int**[] indexesToPlantBugs = Arrays.*stream*(scanner.nextLine().split(**" "**))  
 .mapToInt(Integer::*parseInt*).toArray();  
 String[] commandInput = scanner.nextLine().split(**" "**);  
  
 **int**[] field = **new int**[sizeField];  
 **for** (**int** i = 0; i < indexesToPlantBugs.**length**; i++) {  
 **if** (indexesToPlantBugs[i] >= 0 && indexesToPlantBugs[i] < sizeField) {  
 field[indexesToPlantBugs[i]] = 1;  
 }  
 }  
 **while** (!commandInput[0].equals(**"end"**)) {  
 **int** bugIndex = Integer.*parseInt*(commandInput[0]);  
 String flightDirection = commandInput[1];  
 **int** flightLength = Integer.*parseInt*(commandInput[2]);  
  
 String correctedDirection = flightDirection;  
 **if** (flightLength < 0) {  
 **switch** (flightDirection) {  
 **case "left"**:  
 correctedDirection = **"right"**;  
 **break**;  
 **case "right"**:  
 correctedDirection = **"left"**;  
 **break**;  
 }  
 }  
 **if** (bugIndex >= 0 && bugIndex < sizeField) {  
 **if** (field[bugIndex] == 1) {  
 field[bugIndex] = 0;  
 **if** (correctedDirection.equals(**"left"**)) {  
  
 flightLength = Math.*abs*(flightLength);  
 **for** (**int** i = bugIndex - flightLength; i >= 0; i = i - flightLength) {  
 **if** (field[i] == 0) {  
 field[i] = 1;  
 **break**;  
 }  
 }  
 }  
 **if** (correctedDirection.equals(**"right"**)) {  
  
 flightLength = Math.*abs*(flightLength);  
 **for** (**int** i = bugIndex + flightLength; i < field.**length**; i = i + flightLength) {  
 **if** (field[i] == 0) {  
 field[i] = 1;  
 **break**;  
 }  
 }  
 }  
 }  
 }  
 commandInput = scanner.nextLine().split(**" "**);  
 }  
 **for** (**int** i = 0; i < field.**length**; i++) {  
 System.***out***.print(field[i] + **" "**);  
  
 }  
  
  
 }  
}