Array Practice Problems

1 write a program in the following steps

1. Generates 10 RANDOM 3 Digit number
2. Store this random numbers into a array
3. Then find the 2nd largest and the 2nd smallest element without sorting array

2 extend the above program to sort the array and then find the 2nd smallest element

$ cat larg\_small\_element\_Array.sh

#!/bin/bash -x

# generate 3 digit random number

function generateRandomNumber() {

randomNumber=$((RANDOM%900+100))

echo $randomNumber

}

# Find the second largest number

function sortTheArray() {

randomNumbers=("$@")

length="${#randomNumbers[@]}"

for (( counterOne = 0; counterOne < ${#randomNumbers[@]}; counterOne++ ))

do

for (( counterTwo = $counterOne; counterTwo < ${#randomNumbers[@]}; counterTwo++ ))

do

if [ ${randomNumbers[$counterOne]} -gt ${randomNumbers[$counterTwo]} ]; then

temp=${randomNumbers[$counterOne]}

randomNumbers[$counterOne]=${randomNumbers[$counterTwo]}

randomNumbers[$counterTwo]=$temp

fi

done

done

echo "Sorted array is " ${randomNumbers[@]}

echo "Second Largest number is ${randomNumbers[ $(( ${#randomNumbers[@]}-2 )) ]}"

echo "Second Smallest number is ${randomNumbers[1]}"

}

# Store the random number to the unsorted array

function storeRandomNumber() {

counter=0

while [ $counter -lt 10 ]

do

randomNumberArray[((counter++))]=$(generateRandomNumber)

done

echo ${randomNumberArray[@]}

sortTheArray ${randomNumberArray[@]}

}

storeRandomNumber

$ ./larg\_small\_element\_Array.sh

+ storeRandomNumber

+ counter=0

+ '[' 0 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=773

++ echo 773

+ randomNumberArray[((counter++))]=773

+ '[' 1 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=323

++ echo 323

+ randomNumberArray[((counter++))]=323

+ '[' 2 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=505

++ echo 505

+ randomNumberArray[((counter++))]=505

+ '[' 3 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=518

++ echo 518

+ randomNumberArray[((counter++))]=518

+ '[' 4 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=531

++ echo 531

+ randomNumberArray[((counter++))]=531

+ '[' 5 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=681

++ echo 681

+ randomNumberArray[((counter++))]=681

+ '[' 6 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=915

++ echo 915

+ randomNumberArray[((counter++))]=915

+ '[' 7 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=946

++ echo 946

+ randomNumberArray[((counter++))]=946

+ '[' 8 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=516

++ echo 516

+ randomNumberArray[((counter++))]=516

+ '[' 9 -lt 10 ']'

++ generateRandomNumber

++ randomNumber=425

++ echo 425

+ randomNumberArray[((counter++))]=425

+ '[' 10 -lt 10 ']'

+ echo 773 323 505 518 531 681 915 946 516 425

773 323 505 518 531 681 915 946 516 425

+ sortTheArray 773 323 505 518 531 681 915 946 516 425

+ randomNumbers=("$@")

+ length=10

+ (( counterOne = 0 ))

+ (( counterOne < 10 ))

+ (( counterTwo = 0 ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 773 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 323 ']'

+ temp=773

+ randomNumbers[$counterOne]=323

+ randomNumbers[$counterTwo]=773

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 323 -gt 505 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 323 -gt 518 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 323 -gt 531 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 323 -gt 681 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 323 -gt 915 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 323 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 323 -gt 516 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 323 -gt 425 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 1 ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 773 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 505 ']'

+ temp=773

+ randomNumbers[$counterOne]=505

+ randomNumbers[$counterTwo]=773

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 505 -gt 518 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 505 -gt 531 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 505 -gt 681 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 505 -gt 915 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 505 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 505 -gt 516 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 505 -gt 425 ']'

+ temp=505

+ randomNumbers[$counterOne]=425

+ randomNumbers[$counterTwo]=505

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 2 ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 773 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 518 ']'

+ temp=773

+ randomNumbers[$counterOne]=518

+ randomNumbers[$counterTwo]=773

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 518 -gt 531 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 518 -gt 681 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 518 -gt 915 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 518 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 518 -gt 516 ']'

+ temp=518

+ randomNumbers[$counterOne]=516

+ randomNumbers[$counterTwo]=518

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 516 -gt 505 ']'

+ temp=516

+ randomNumbers[$counterOne]=505

+ randomNumbers[$counterTwo]=516

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 3 ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 773 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 531 ']'

+ temp=773

+ randomNumbers[$counterOne]=531

+ randomNumbers[$counterTwo]=773

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 531 -gt 681 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 531 -gt 915 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 531 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 531 -gt 518 ']'

+ temp=531

+ randomNumbers[$counterOne]=518

+ randomNumbers[$counterTwo]=531

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 518 -gt 516 ']'

+ temp=518

+ randomNumbers[$counterOne]=516

+ randomNumbers[$counterTwo]=518

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 4 ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 773 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 681 ']'

+ temp=773

+ randomNumbers[$counterOne]=681

+ randomNumbers[$counterTwo]=773

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 681 -gt 915 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 681 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 681 -gt 531 ']'

+ temp=681

+ randomNumbers[$counterOne]=531

+ randomNumbers[$counterTwo]=681

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 531 -gt 518 ']'

+ temp=531

+ randomNumbers[$counterOne]=518

+ randomNumbers[$counterTwo]=531

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 5 ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 773 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 915 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 681 ']'

+ temp=773

+ randomNumbers[$counterOne]=681

+ randomNumbers[$counterTwo]=773

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 681 -gt 531 ']'

+ temp=681

+ randomNumbers[$counterOne]=531

+ randomNumbers[$counterTwo]=681

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 6 ))

+ (( counterTwo < 10 ))

+ '[' 915 -gt 915 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 915 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 915 -gt 773 ']'

+ temp=915

+ randomNumbers[$counterOne]=773

+ randomNumbers[$counterTwo]=915

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 773 -gt 681 ']'

+ temp=773

+ randomNumbers[$counterOne]=681

+ randomNumbers[$counterTwo]=773

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 7 ))

+ (( counterTwo < 10 ))

+ '[' 946 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 946 -gt 915 ']'

+ temp=946

+ randomNumbers[$counterOne]=915

+ randomNumbers[$counterTwo]=946

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 915 -gt 773 ']'

+ temp=915

+ randomNumbers[$counterOne]=773

+ randomNumbers[$counterTwo]=915

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 8 ))

+ (( counterTwo < 10 ))

+ '[' 946 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ '[' 946 -gt 915 ']'

+ temp=946

+ randomNumbers[$counterOne]=915

+ randomNumbers[$counterTwo]=946

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ (( counterTwo = 9 ))

+ (( counterTwo < 10 ))

+ '[' 946 -gt 946 ']'

+ (( counterTwo++ ))

+ (( counterTwo < 10 ))

+ (( counterOne++ ))

+ (( counterOne < 10 ))

+ echo 'Sorted array is ' 323 425 505 516 518 531 681 773 915 946

Sorted array is 323 425 505 516 518 531 681 773 915 946

+ echo 'Second Largest number is 915'

Second Largest number is 915

+ echo 'Second Smallest number is 425'

Second Smallest number is 425

3 extend the prime factorization program to store all the prime factors of a number n into an array and finally display the output.

$ cat primefactor\_array.sh

#!/bin/bash -x

read -p "Enter the number to find factors:" number

declare a primeFactors

counter=0

primeFactorsOf=$number

for ((count=2 ; count<= $number ; count++ ))

do

while (($number%$count == 0 ))

do

primeFactors[((counter++))]=$count

number=$((number/count))

done

done

echo "Prime factors of $primeFactorsOf is ${primeFactors[@]}"

$ ./primefactor\_array.sh

+ read -p 'Enter the number to find factors:' number

Enter the number to find factors:10

+ declare a primeFactors

+ counter=0

+ primeFactorsOf=10

+ (( count=2 ))

+ (( count<= 10 ))

+ (( 10%2 == 0 ))

+ primeFactors[((counter++))]=2

+ number=5

+ (( 5%2 == 0 ))

+ (( count++ ))

+ (( count<= 5 ))

+ (( 5%3 == 0 ))

+ (( count++ ))

+ (( count<= 5 ))

+ (( 5%4 == 0 ))

+ (( count++ ))

+ (( count<= 5 ))

+ (( 5%5 == 0 ))

+ primeFactors[((counter++))]=5

+ number=1

+ (( 1%5 == 0 ))

+ (( count++ ))

+ (( count<= 1 ))

+ echo 'Prime factors of 10 is 2' 5

Prime factors of 10 is 2 5

4 write a program to show sum of three integer adds to ZERO

$ cat sum3integer\_array.sh

#!/bin/bash

arr=( 0 -1 2 3 -3 1 )

echo "the elements are: "${arr[0]}

len=${#arr[@]}

for (( i=0 ; i<$len-2 ; i++ ))

do

for (( j=i+1; j<$len-1 ; j++ ))

do

for (( k=j+1 ; k<$len ; k++ ))

do

if [ $(( arr[$i]+arr[$j]+arr[$k] )) == 0 ]

then

echo -e "${arr[i]} \c"

echo -e "${arr[j]} \c"

echo -e "${arr[k]} \n"

fi

done

done

done

$ ./sum3integer\_array.sh

the elements are: 0

0 -1 1

0 3 -3

2 -3 1

5 take a range from 0-100, find the digits that are repeated twice like 33,77, etc and store them in an array.

$ cat repeteddigit\_array.sh

#!/bin/bash -x

declare -a repeatedNumberArray

countArray=0

for ((counter=10 ; counter < 100 ; counter++ ))

do

if [ $((counter%10)) -eq $(((counter/10)%10)) ]

then

repeatedNumberArray[((countArray++))]=$counter

fi

done

$ ./repeteddigit\_array.sh

+ declare -a repeatedNumberArray

+ countArray=0

+ (( counter=10 ))

+ (( counter < 100 ))

+ '[' 0 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 1 ']'

+ repeatedNumberArray[((countArray++))]=11

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 1 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 0 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 2 ']'

+ repeatedNumberArray[((countArray++))]=22

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 2 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 0 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 3 ']'

+ repeatedNumberArray[((countArray++))]=33

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 3 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 0 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 4 ']'

+ repeatedNumberArray[((countArray++))]=44

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 4 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 0 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 5 ']'

+ repeatedNumberArray[((countArray++))]=55

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 5 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 0 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 6 ']'

+ repeatedNumberArray[((countArray++))]=66

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 6 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 0 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 7 ']'

+ repeatedNumberArray[((countArray++))]=77

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 7 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 0 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 8 ']'

+ repeatedNumberArray[((countArray++))]=88

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 8 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 0 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 1 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 2 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 3 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 4 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 5 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 6 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 7 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 8 -eq 9 ']'

+ (( counter++ ))

+ (( counter < 100 ))

+ '[' 9 -eq 9 ']'

+ repeatedNumberArray[((countArray++))]=99

+ (( counter++ ))

+ (( counter < 100 ))