# Java Programs

## Q. Write a function to find out duplicate words in a given string?

\*\*Approach:\*\*

1. Define a string.

1. Convert the string into lowercase to make the comparison insensitive.

1. Split the string into # Java Programs

## Q. Write a function to find out duplicate words in a given string?

\*\*Approach:\*\*

1. Define a string.

1. Convert the string into lowercase to make the comparison insensitive.

1. Split the string into words.

1. Two loops will be used to find duplicate words. Outer loop will select a word and Initialize variable count to 1. Inner loop will compare the word selected by outer loop with rest of the words.

1. If a match found, then increment the count by 1 and set the duplicates of word to '0' to avoid counting it again.

1. After the inner loop, if count of a word is greater than 1 which signifies that the word has duplicates in the string.

```java

public class DuplicateWord {

public static void main(String[] args) {

String string = "Big black bug bit a big black dog on his big black nose";

int count;

//Converts the string into lowercase

string = string.toLowerCase();

//Split the string into words using built-in function

String words[] = string.split(" ");

System.out.println("Duplicate words in a given string : ");

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

count = 1;

for(int j = i+1; j < words.length; j++) {

if(words[i].equals(words[j])) {

count++;

//Set words[j] to 0 to avoid printing visited word

words[j] = "0";

}

}

//Displays the duplicate word if count is greater than 1

if(count > 1 && words[i] != "0")

System.out.println(words[i]);

}

}

}

```

Output

```java

Duplicate words in a given string :

big

black

```

## Q. Find the missing number in an array?

\*\*Approach:\*\*

1. Calculate `A = n (n+1)/2` where n is largest number in series 1…N.

1. Calculate B = Sum of all numbers in given series

1. Missing number = A – B

```java

Output

```

## Q. Write a program to generate random numbers between the given range?

\*\*Approach\*\*

1. Get the Min and Max which are the specified range.

1. Call the nextInt() method of ThreadLocalRandom class (java.util.concurrent.ThreadLocalRandom) and specify the Min and Max value as the parameter as

`ThreadLocalRandom.current().nextInt(min, max + 1);`

1. Return the received random value

```java

// Java program to generate a random integer

// within this specific range

\*\*Input\*\*

```

Input: Min = 1, Max = 10

```

\*\*Output\*\*

```

Random value between 1 and 100: 35

```

## Q. Write a java program to swap two string variables without using temp variable?

\*\*Approach\*\*

1. Append second string to first string and store in first string:

a = a + b

2. call the method substring(int beginindex, int endindex)

by passing beginindex as 0 and endindex as,

a.length() - b.length():

b = substring(0,a.length()-b.length());

3. call the method substring(int beginindex) by passing

b.length() as argument to store the value of initial

b string in a

a = substring(b.length());

```java

/\*\*

\* Java program to swap two strings without using a temporary

\* variable.

\*\*/

Output

```

Strings before swap: a = Hello and b = World

Strings after swap: a = World and b = Hello

```

## Q. Write a java program to Move all zeroes to end of array?

```

Input: arr[] = {1, 2, 0, 4, 3, 0, 5, 0};

Output: arr[] = {1, 2, 4, 3, 5, 0, 0, 0};

```

Output

```

Array after pushing all zeros to end of array:

1 9 8 4 2 7 6 9 0 0 0 0

```

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<b><a href="#">↥ back to top</a></b>

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## Q. Write a multi-threading program to print odd number using one thread and even number using other?

Output

```

Thread Odd: 1

Thread Even: 2

Thread Odd: 3

Thread Even: 4

Thread Odd: 5

```

## Q. How to print all permutations of a String in Java?

\*\*Approach\*\*

1. Define a string.

1. Fix a character and swap the rest of the characters.

1. Call the generatePermutation() for rest of the characters.

1. Backtrack and swap the characters again.

\*\*Recursive Approach\*\*

Output

```

All the permutations of the string are:

ABC

ACB

BAC

BCA

CBA

CAB

```

## Q. Reverse the string with preserving the position of spaces

\*\*Approach\*\*

1. Create a string to store result. Mark the space position of the given string in this string.

1. Insert the character from input string into the result string in reverse order.

1. While inserting the character check if the result string already contains a space at index ‘j’ or not. If it contains, we copy the character to the next position.

```java

// Java program to reverse a string

Output

```

India Is my country --> yrtnu oc ym sIaidnI

```

## Q. How do you find longest substring without repeating characters in a string?

\*\*Approach\*\*

1. Start traversing the string from left to right and maintain track

2. Check the non-repeating characters in current substring with the help of a start and end index

Output

```

LongestSubstringFindOut --> LongestSub

```