1. JAVA

A. Create an array with the values (1, 2, 3, 4, 5, 6, 7) and shuffle it.

import java.util.Arrays;

import java.util.Random;

public class ShuffleArray {

public static void main(String[] args) {

int[] arr = {1, 2, 3, 4, 5, 6, 7};

shuffleArray(arr);

System.out.println(Arrays.toString(arr));

}

public static void shuffleArray(int[] arr) {

Random random = new Random();

for (int i = arr.length - 1; i > 0; i--) {

int index = random.nextInt(i + 1);

int temp = arr[index];

arr[index] = arr[i];

arr[i] = temp;

}

}

}

B. Enter a Roman Number as input and convert it to an integer. (ex IX = 9)

import java.util.HashMap;

import java.util.Map;

public class RomanToInteger {

public static void main(String[] args) {

String input = "IX"; // Input Roman numeral

int result = romanToInt(input);

System.out.println("Result: " + result);

}

public static int romanToInt(String s) {

Map<Character, Integer> map = new HashMap<>();

map.put('I', 1);

map.put('V', 5);

map.put('X', 10);

map.put('L', 50);

map.put('C', 100);

map.put('D', 500);

map.put('M', 1000);

int result = 0;

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

if (i > 0 && map.get(s.charAt(i)) > map.get(s.charAt(i - 1))) {

result += map.get(s.charAt(i)) - 2 \* map.get(s.charAt(i - 1));

} else {

result += map.get(s.charAt(i));

}

}

return result;

}

}

C. Check if the input is pangram or not. (Pangram is a sentence that contains all the alphabet from a-z)

public class PangramChecker {

public static void main(String[] args) {

String input = "The quick brown fox jumps over the lazy dog";

boolean isPangram = checkIfPangram(input.toLowerCase());

if (isPangram) {

System.out.println("The input is a pangram.");

} else {

System.out.println("The input is not a pangram.");

}

}

public static boolean checkIfPangram(String s) {

boolean[] mark = new boolean[26];

int index;

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

if ('a' <= s.charAt(i) && s.charAt(i) <= 'z') {

index = s.charAt(i) - 'a';

mark[index] = true;

}

}

for (int i = 0; i < 26; i++) {

if (!mark[i]) {

return false;

}

}

return true;

}

}