# Kontroldarbs Nr.1.

## Funkcijas. Masīvi. Simbolu virknes

1. Uzrakstīt Java programmu, kas ļauj lietotājam ievadīt naturālu skaitli un izrēķina cik vieninieki ir šī skaitļa pierakstā. Skaitļa viennieku skaita aprēķināšanai jāizveido funkcija. Pielietojiet operatoru try iznēmumsituācijas apstrādei

import java.util.Scanner;  
  
public class first {  
  
 public static Scanner in = new Scanner(System.in);  
  
 public static int input() {  
 try {  
 int inp = in.nextInt();  
  
 if (inp <= 0) {  
 throw new Error("Enter a natural number");  
 }  
  
 return inp;  
 } catch (Exception ex) {  
 throw new Error("Enter a natural number");  
 }  
 }  
  
 public static int countOnes(int num) {  
 String strNum = String.valueOf(num);  
  
 int wo1 = strNum.replace("1", "").length();  
 int w1 = strNum.length();  
  
 return w1 - wo1;  
 }  
  
 public static void main(String[] args) {  
 System.out.print("Enter a natural number: ");  
  
 int num = input();  
  
 int oneCount = countOnes(num);  
  
 System.out.println("There are " + oneCount + " 1 in " + num);  
 }  
}

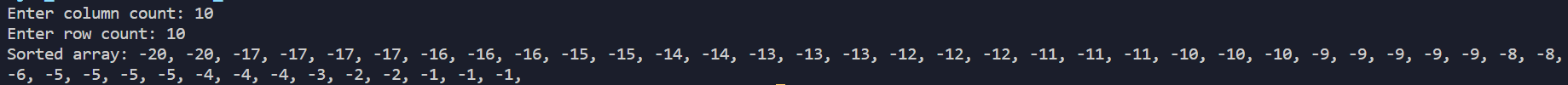
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1. Uzrakstīt Java programmu, kas paredzēta divu dimensiju masīva apstrādei. Masīvu aizpildīt ar nejaušiem veseliem skaitļiem diapazonā -20…20. Kolonnu un rindu skaitu ievada lietotājs. Masīvu nodod funkcijai, kas paredzēta masīva apstrādei. Ar funkciju visus divu dimensiju masīva negatīvus elementus saglabāt viendimensījas masīvā un sakārtot viendimensijas masīva elementus dilstošā secībā un izvadīt tos uz ekrānu.

import java.util.Random;  
import java.util.Scanner;  
  
public class second {  
  
 public static Scanner in = new Scanner(System.in);  
  
 public static int rand(int min, int max) {  
 Random random = new Random();  
  
 return random.nextInt(max - min) + min;  
 }  
  
 public static int input() {  
 try {  
 int inp = in.nextInt();  
  
 if (inp <= 0) {  
 throw new Error("Input must be greater than 0");  
 }  
  
 return inp;  
 } catch (Exception ex) {  
 throw new Error("Input must be a number");  
 }  
 }  
  
 public static int[][] gen\_arr(int cols, int rows) {  
 int[][] arr = new int[rows][cols];  
  
 for (int i = 0; i < arr.length; i++) {  
 int[] row = new int[rows];  
  
 for (int j = 0; j < row.length; j++) {  
 row[j] = rand(-20, 20);  
 }  
  
 arr[i] = row;  
 }  
  
 return arr;  
 }  
  
 public static void print\_arr(int[] arr) {  
 String prnt = "";  
  
 for (int i = 0; i < arr.length; i++) {  
 prnt += arr[i];  
 prnt += ", ";  
 }  
  
 System.out.println(prnt);  
 }  
  
 public static int[] get\_negative(int[][] arr) {  
 int negative\_count = 0;  
  
 for (int i = 0; i < arr.length; i++) {  
 for (int j = 0; j < arr[i].length; j++) {  
 if (arr[i][j] < 0) {  
 negative\_count++;  
 }  
 }  
 }  
  
 int[] negative = new int[negative\_count];  
  
 int counter = 0;  
  
 for (int i = 0; i < arr.length; i++) {  
 for (int j = 0; j < arr[i].length; j++) {  
 if (arr[i][j] < 0) {  
 negative[counter] = arr[i][j];  
 counter++;  
 }  
 }  
 }  
  
 return negative;  
 }  
  
 public static int[] select\_sort(int[] arr) {  
 int indexor = 0;  
  
 while (indexor < arr.length) {  
 int smallest\_el = arr[indexor], smallest\_index = indexor;  
 int idx\_el = arr[indexor];  
  
 for (int i = indexor; i < arr.length; i++) {  
 int el = arr[i];  
  
 if (el < smallest\_el) {  
 smallest\_el = el;  
 smallest\_index = i;  
 }  
 }  
  
 arr[indexor] = smallest\_el;  
 arr[smallest\_index] = idx\_el;  
  
 indexor++;  
 }  
  
 return arr;  
 }  
  
 public static void main(String[] args) {  
 System.out.print("Enter column count: ");  
 int cols = input();  
  
 System.out.print("Enter row count: ");  
 int rows = input();  
  
 int[][] arr = gen\_arr(cols, rows);  
  
 int[] negative = get\_negative(arr);  
  
 int[] sorted = select\_sort(negative);  
  
 System.out.print("Sorted array: ");  
 print\_arr(sorted);  
 }  
}



1. Uzrakstīt Java programmu, kas paredzēta simbolu virkņu apstrādei. Sākumdatus ievada lietotājs. Tekstu nodod funkcijai, kas noteic vai teksts sākās ar vārdu “Latvija”. Ar izveidotu funkcij show(str) izprintēt visus teikuma vārdus

import java.util.Scanner;  
  
public class third {  
  
 public static Scanner in = new Scanner(System.in);  
  
 public static boolean check\_start(String txt) {  
 String first\_word = txt.split(" ")[0].replace(" ", "");  
  
 if (first\_word.toLowerCase().equals("latvija")) {  
 return true;  
 }  
  
 return false;  
 }  
  
 public static void show(String txt) {  
 String[] words = txt.split(" ");  
  
 System.out.println("Words: ");  
 for (int i = 0; i < words.length; i++) {  
 System.out.println(words[i].replace(" ", ""));  
 }  
 }  
  
 public static void main(String[] args) {  
 System.out.println("Enter text...");  
 String text = in.nextLine();  
  
 boolean starts\_with\_lv = check\_start(text);  
  
 if (starts\_with\_lv) {  
 System.out.println("Text starts with 'Latvija'");  
 }  
  
 show(text);  
 }  
}

