**ASSIGNMENT -5**

**CSA0985**

**PROGRAMMING IN JAVA**

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**1.Write a java program to create a method takes integers as a parameter and throws the exception if the number is odd?**

**Program:**

public class Exception\_OddNumber

{

public static void main(String[] args)

{

int n = 18;

trynumber(n);

n = 7;

trynumber(n);

}

public static void trynumber(int n)

{

try

{

checkEvenNumber(n);

System.out.println(n + " is even.");

}

catch (IllegalArgumentException e)

{

System.out.println("Error: " + e.getMessage());

}

}

public static void checkEvenNumber(int number)

{

if (number % 2 != 0)

{

throw new IllegalArgumentException(number + " is odd.");

}

}

}

**Output:**

18 is even.

Error: 7 is odd

**2. Write a java program to find common elements between two integer arrays?**

**Program:**

import java.util.Arrays;

public class Common{

public static void main(String[] args)

{

int[] array1 = {1, 2, 5, 5, 8, 9, 7, 10};

int[] array2 = {1, 0, 6, 15, 6, 4, 7, 0};

System.out.println("Array1 : "+Arrays.toString(array1));

System.out.println("Array2 : "+Arrays.toString(array2));

for (int i = 0; i < array1.length; i++)

{

for (int j = 0; j < array2.length; j++)

{

if(array1[i] == (array2[j]))

{

System.out.println("Common element is : "+(array1[i]));

}

}

}

}

}

**Output:**

Array1 : [1, 2, 5, 5, 8, 9, 7, 10]

Array2 : [1, 0, 6, 15, 6, 4, 7, 0]

Common element is : 1

Common element is : 7

**3. Write a java program Create a method takes a screen as input throws an exception if the screen does not contain bubbles?**

**Program:**

import java.util.Scanner;

class NoBubblesException extends Exception

{

public NoBubblesException(String message)

{

super(message);

}

}

class Screen

{

private boolean containsBubbles;

public Screen(boolean containsBubbles)

{

this.containsBubbles = containsBubbles;

}

public void checkForBubbles() throws NoBubblesException

{

if (!containsBubbles)

{

throw new NoBubblesException("No bubbles found on the screen!");

}

System.out.println("Bubbles detected on the screen!");

}

}

class BubbleScreenApp

{

public static void main(String[] args)

{

Scanner scanner = new Scanner(System.in);

System.out.print("Does the screen contain bubbles? (true/false): ");

boolean containsBubbles = scanner.nextBoolean();

Screen screen = new Screen(containsBubbles);

try

{

screen.checkForBubbles();

}

catch (NoBubblesException e)

{

System.out.println("Exception caught: " + e.getMessage());

}

}

}

**Output:**

Does the screen contain bubbles? (true/false): true

Bubbles detected on the screen!

**4. Write a java program to find the second largest element in array?**

**Program:**

import java.util.\*;

public class Main

{

public static void main(String[] args)

{

List<Integer> v = new ArrayList<>(Arrays.asList(10, 45, 12,15));

Set<Integer> s = new TreeSet<>(v);

v.clear();

for (int value : s)

{

v.add(value);

}

int n = v.size();

System.out.print("The Second Largest Element in ArrayList is: ");

System.out.println(v.get(n-2));

}

}

**Output:**

The Second Largest Element in ArrayList is: 15

**5. Write a java program to remove the duplicate elements from array?**

**Program:**

import java.util.\*;

public class RemoveDuplicatesFromArray

{

public static void main(String[] args)

{

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

int[] result = removeDuplicates(array);

System.out.print("Array with duplicates: ");

for (int num : array)

{

System.out.print(num + " ");

}

System.out.print("\nArray without duplicates: ");

for (int num : result)

{

System.out.print(num + " ");

}

}

public static int[] removeDuplicates(int[] arr)

{

Set<Integer> uniqueSet = new HashSet<>();

List<Integer> uniqueList = new ArrayList<>();

for (int num : arr)

{

if (!uniqueSet.contains(num))

{

uniqueSet.add(num);

uniqueList.add(num);

}

}

int[] result = new int[uniqueList.size()];

for (int i = 0; i < uniqueList.size(); i++)

{

result[i] = uniqueList.get(i);

}

return result;

}

}

**Output:**

Array with duplicates: 1 2 3 4 2 3 5 6 7 1

Array without duplicates: 1 2 3 4 5 6 7

**6. Write a java program to find the second smallest element in array?**

**Program:**

import java.util.Arrays;

public class SmallestElement {

public static void main(String[] args) {

int[] my\_array = {-1, 4, 0, 2, 7, -3};

System.out.println("Original numeric array : "+Arrays.toString(my\_array));

int min = Integer.MAX\_VALUE;

int second\_min = Integer.MAX\_VALUE;

for (int i = 0; i < my\_array.length; i++) {

if(my\_array[i]==min){

second\_min=min;

} else if (my\_array[i] < min) {

second\_min = min;

min = my\_array[i];

} else if (my\_array[i] < second\_min) {

second\_min = my\_array[i];

}

}

System.out.println("Second smallest number is : " + second\_min);

}

}

**Output:**

Original numeric array : [-1, 4, 0, 2, 7, -3]

Second lowest number is : -1