Some Java programs to practice

**1. Program to find duplicate Character in a String:**

public class sample {

public static void main(String[] args) {

String str = "abcxyzabcabc1xyz";

char[] ar = str.toCharArray();

HashMap<Character, Integer> smap = new HashMap<Character, Integer>();

for (char str1 : ar) {

if (smap.containsKey(str1)) {

smap.put(str1, smap.get(str1) + 1);

} else {

smap.put(str1, 1);

}

}

Set<Character> keys = smap.keySet();

for (char key : keys) {

if (smap.get(key) > 1) {

System.out.println(key + " :" + smap.get(key));

}

}

}

}

**2. Java program to find duplicate string in the Array**

public class Array\_Find\_Occurance\_Of\_Duplicate\_Elements\_InArray {

public static void main(String[] args) {

String[] arr = { "Java", "JSP", "Servlets", "Java", "Struts", "JSP", "JDBC","Java" ,"JDBC"};

HashMap<String, Integer> map = new HashMap<String, Integer>();

for (String str : arr) {

if (map.containsKey(str)) {

map.put(str, map.get(str) + 1);

} else {

map.put(str, 1);

}

}

Set<String> set = map.keySet();

for (String str : set) {

if (map.get(str) > 1) {

System.out.println(str + ": " + map.get(str));

}

}

}

**3. Java program to check two arrays are equal or not:**

public class Array\_compare\_2\_Interger\_Arrays {

public static void main(String[] args) {

int ar1[] = { 10, 20, 30 };

int ar2[] = { 40, 50, 60 };

int ar3[] = { 40, 50, 60 };

System.out.println(Arrays.equals(ar1, ar2)); //false

System.out.println(Arrays.equals(ar1, ar3));// false

System.out.println(Arrays.equals(ar2, ar3)); //true

//Arrays.deepEquals(arg0, arg1);

//use to compare 2 multi dimentional array

}

}

**4. Java program to multiply two numbers without using \* operator**

Multiply\_2\_Num\_Without\_Multi\_Operator

int num1 = 10;

int num2 = 20;

int sum = 0;

for (int i = 1; i <= num2; i++) {

sum = sum + num1;

}

System.out.println(sum);

**5. Java program to check the given number is Armstrong number or not**

Multiply\_2\_Num\_Without\_Multi\_Operator

int num1 = 10;

int num2 = 20;

int sum = 0;

for (int i = 1; i <= num2; i++) {

sum = sum + num1;

}

System.out.println(sum);

**6. Java program to find second largest element In Array**

import java.util.ArrayList;

import java.util.Arrays;

import java.util.Collections;

import java.util.HashSet;

import java.util.List;

import java.util.TreeSet;

public class Array\_Find\_Second\_Largest\_Num\_In\_Array {

public static void main(String[] args) {

int ar[] = { 10, 20, 30, 40, 60, 40, 50, 60, 80, 100 };

TreeSet tr = new TreeSet();

for (int num : ar) {

tr.add(num);

}

ArrayList al = new ArrayList(tr);

System.out.println("2nd highest num: " + al.get(al.size() - 2));

System.out.println("2nd lowest num: " + al.get(1));

}

}

**7. Java program to calculate factorial of a number**

public class Imp\_Factorial\_Of\_Number {

public static void main(String[] args) {

int num = 5;

int fact = 1; // 5 20 60 120

// 5432

for (int i = num; i >= 1; i--) {

fact = fact \* i;

}

System.out.println(fact);

}

}

**8. Java program to sort an Array**

int ar[] = {20,50,40,30,20};

System.out.println("----before sorting----");

for (int i = 0; i <= ar.length-1; i++) {

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

}

Arrays.sort(ar); //sorting

System.out.println("----after sorting----");

for (int i = 0; i <= ar.length-1; i++) {

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

}

System.out.println("----descending order ----");

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

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

}

**9. Java program to reverse the string**

public class String\_Reverse\_String {

public static void main(String[] args) {

String org = "san86jay";

String rev = "";

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

rev = rev + org.charAt(i);

}

System.out.println("original string is " + org);

System.out.println("reverse string is " + rev);

}

}

**10. Java program to reverse a String in the array**

public class String\_Reverse\_Middle\_String {

public static void main(String[] args) {

String str = "abc xyz lmn abc1";

String ar[] = str.split(" ");

for (int i = 0; i <= ar.length - 1; i++) {

if ((i % 2) != 0) {

String s1 = ar[i];

ar[i] = RevString(s1);

}

}

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

System.out.print(ar[i] + " ");

}

}

// It will reverse given String

public static String RevString(String inp) {

String rev = "";

for (int j = inp.length() - 1; j >= 0; j--) {

rev = rev + inp.charAt(j);

}

return rev;

}

**11. Java program to count the number of spaces in java**

public class String\_count\_number\_Of\_while\_spaces\_In\_string {

public static void main(String[] args) {

int count = 0;

String str = "ab c d";

for (int i = 0; i <= str.length() - 1; i++) {

char str1 = str.charAt(i);

if (str1 == ' ') {

count++;

}

}

System.out.println("no of spaces in given string: " + count);

}

}

**12. Java program to check a particular key value in the Map**

public class Map\_Verify\_Particular\_Key\_VAlue\_Present\_Or\_Not {

public static void main(String[] args) {

HashMap<String, Integer> map = new HashMap<String, Integer>();

map.put("abc1", 1);

map.put("abc2", 2);

map.put("abc3", 3);

map.put("abc4", 4);

System.out.println("Size of map: "+map.size());

System.out.println(map.containsKey("abc1")); // true

System.out.println(map.containsKey("abc")); //false

System.out.println(map.containsValue(4)); // true

}

}

**13. Java program to remove a particular key from the Map**

public class Map\_Remove\_Key\_Value\_Fom\_hashmap {

public static void main(String[] args) {

HashMap<String, Integer> map = new HashMap<String, Integer>();

map.put("abc1", 1);

map.put("abc2", 2);

map.put("abc3", 3);

map.put("abc4", 4);

System.out.println("----Elemets in hashmap-----");

Set<Entry<String, Integer>> entrys = map.entrySet();

for (Entry<String, Integer> entry : entrys) {

//System.out.println(entry.getKey() + " :" + entry.getValue());

System.out.println(entry);

}

map.remove("abc3");

System.out.println("----Element removed from map------");

Set<Entry<String, Integer>> entrys1 = map.entrySet();

for (Entry<String, Integer> entry : entrys1) {

//System.out.println(entry.getKey() + " :" + entry.getValue());

System.out.println(entry);

}

}

}

**14. Java Pattern program:**

**a. public class Pattern1 {**

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**\*/**

public static void main(String[] args) {

for (int i = 1; i <= 2; i++) {

for (int j = 1; j <= 3; j++) {

System.out.print("\* ");

}

System.out.println();

}

}

}

**b.**

**public class Pattern2 {**

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**\*/**

public static void main(String[] args) {

for (int i = 1; i <= 2; i++) {

for (int j = 1; j <= 3; j++) {

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

}

System.out.println();

}

}

}

**c.**

**public class Pattern3 {**

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**123**

**123**

**\*/**

public static void main(String[] args) {

for (int i = 1; i <= 2; i++) {

for (int j = 1; j <= 3; j++) {

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

}

System.out.println();

}

}

}

**d.**

**public class pattern4 {**

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**\*/**

public static void main(String[] args) {

int star=1;

for (int i = 1; i <= 3; i++) {

for (int j = 1; j <= star; j++) {

System.out.print("\* ");

}

star++;

System.out.println();

}

}

}

**e.**

**public class pattern5 {**

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**\*/**

public static void main(String[] args) {

int num=1;

for (int i = 1; i <= 3; i++) {

for (int j = 1; j <= num; j++) {

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

}

num++;

System.out.println();

}

}

}

**f.**

**public class pattern6 {**

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**\*/**

public static void main(String[] args) {

int num=1;

for (int i = 1; i <= 3; i++) {

for (int j = 1; j <= num; j++) {

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

}

num++;

System.out.println();

}

}

}

**g.**

**public class pattern7 {**

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**\*/**

public static void main(String[] args) {

int space=0;

int star=3;

for (int i = 1; i <= 3; i++) {

for (int j = 1; j <=space; j++) {

System.out.print(" ");

}

for (int j = 1; j <=star; j++) {

System.out.print("\*");

}

System.out.println();

space++;

star--;

}

}

}

**h.**

**public class pattern8 {**

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public static void main(String[] args) {

int space=0;

int num=3;

for (int i = 1; i <= 3; i++) {

for (int j = 1; j <=space; j++) {

System.out.print(" ");

}

for (int j = 1; j <=num; j++) {

System.out.print(j);

}

System.out.println();

space++;

num--;

}

}

}

**i.**

**public class pattern9 {**

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public static void main(String[] args) {

int space=0;

int num=3;

for (int i = 1; i <= 3; i++) {

for (int j = 1; j <=space; j++) {

System.out.print(" ");

}

for (int j = 1; j <=num; j++) {

System.out.print(i);

}

System.out.println();

space++;

num--;

}

}

}

**j.**

**public class pattern10 {**

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**\*/**

public static void main(String[] args) {

int space=0;

int num=3;

for (int i = 1; i <= 3; i++) {

int count =3;

for (int j = 1; j <=space; j++) {

System.out.print(" ");

}

for (int j = 1; j<=num; j++) {

System.out.print(count);

count--;

}

System.out.println();

space++;

num--;

}

}

}

**k.**

**public class pattern11 {**

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**\*/**

public static void main(String[] args) {

int star = 1;

for (int i = 1; i <= 5; i++) {

for (int j = 1; j <= star; j++) {

System.out.print("\* ");

}

if (i < 3) {

star++;

} else {

star--;

}

System.out.println();

}

}

}

**l.**

**public class pattern12 {**

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**12**

**1**

**\*/**

public static void main(String[] args) {

int num = 1;

for (int i = 1; i <= 5; i++) {

for (int j = 1; j <= num; j++) {

System.out.print(j);

}

if (i < 3) {

num++;

} else {

num--;

}

System.out.println();

}

}

}

**m.**

**public class pattern13 {**

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**3**

**\*/**

public static void main(String[] args) {

int num = 1;

for (int i = 1; i <= 5; i++) {

int count=3;

for (int j = 1; j <= num; j++) {

System.out.print(count);

count--;

}

if (i < 3) {

num++;

} else {

num--;

}

System.out.println();

}

}

}

**n.**

**public class pattern14 {**

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**\*/**

public static void main(String[] args) {

int star = 1;

int space = 2;

for (int i = 1; i <= 5; i++) {

for (int j = 1; j <= space; j++) {

System.out.print(" ");

}

for (int j = 1; j <= star; j++) {

System.out.print("\*");

}

if (i < 3) {

star=star+2;

space--;

} else {

star=star-2;

space++;

}

System.out.println();

}

}

}

**o.**

**public class pattern15 {**

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**543**

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**543**

**5**

**\*/**

public static void main(String[] args) {

int star = 1;

int space = 2;

for (int i = 1; i <= 5; i++) {

int count =5;

for (int j = 1; j <= space; j++) {

System.out.print(" ");

}

for (int j = 1; j <= star; j++) {

System.out.print(count);

count--;

}

if (i < 3) {

star=star+2;

space--;

} else {

star=star-2;

space++;

}

System.out.println();

}

}

}

**15.Check the String is Anagram or not**

public static void main(String args[]) {

String str1 = "recitals";

String str2 = "articles";

if (str1.length()==str2.length()) {

char[] arr1 = str1.toCharArray();

Arrays.sort(arr1);

System.out.println(Arrays.toString(arr1));

char[] arr2 = str2.toCharArray();

Arrays.sort(arr2);

System.out.println(Arrays.toString(arr2));

System.out.println(Arrays.equals(arr1, arr2));

if(arr1.equals(arr2)) {

System.out.println("Given strings are anagrams");

} else {

System.out.println("Given strings are not anagrams");

}

}

}