Java Wbl assiggnment programs:

**package** com.wbl.Loops;

/\* Write a program that swaps 2 given numbers. You need to have 2 separate functions in the program.

--> One Function should swap the numbers without any third new variable.

--> Second function should swap the numbers using a third variable.\*/

**public** **class** Swaping\_Numbers {

**int** a,b;

**public** **void** swap(**int** a,**int** b){

System.***out***.println("before value : " + a);

System.***out***.println("before value : " + b);

a=a+b;

b=a-b;

a=a-b;

System.***out***.println(a);

System.***out***.println(b);

}

**public** **void** swap\_temp(**int** a,**int** b){

**int** c=0;

System.***out***.println("before value : " + a);

System.***out***.println("before value : " + b);

c=a; // 6 4 a=4 b=6 c=

a=b;

b=c;

System.***out***.println("After : " + a);

System.***out***.println("After : " + b);

}

**public** **static** **void** main(String[] args) {

Swaping\_Numbers numbers = **new** Swaping\_Numbers();

numbers.swap(12, 6);

numbers.swap\_temp(4, 6);

}

}

**package** com.wbl.Loops;

/\* Write a program that prints a fibonaci series that is a sequence of numbers like

0 1 1 2 3 5 8.You can vary the number of elements to be printed meaning you can

print 10 numbers or 15 or 20 or any desired number.\*/

**public** **class** Fib {

**public** **static** **void** main(String[] args) {

**int** n=10;

**int**[] arr = **new** **int**[10];

arr[0]=0;

arr[1]=1;

**for** (**int** i=2;i<n;i++){

arr[i]=arr[i-1]+arr[i-2];

}

**for**(**int** i=0;i<n;i++){

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

}

}

}

**package** com.wbl.Loops;

**import** java.util.Scanner;

// Write a program to calculate factorial of a given number.

//You need to compute the factorial with one logic

//that uses recursion and another logic without recursion.

**public** **class** Factorial {

**int** fact=1;

**public** **void** factorial(**int** n){

**if** (n<=0){

System.***out***.println("number should be greater than zero");

}

**else**{

**for** (**int** i=1;i<=n;i++){

fact=fact\*i;

}

System.***out***.println("Factorial number of " + n + " is : " + fact);

}

}

// using recursion

**public** **int** recursion(**int** n){

**if**(n==0){

**return** 1;

} **else**{

**return** n\*recursion(n-1);

}

}

**public** **static** **void** main(String[] args) {

Factorial f = **new** Factorial();

Scanner num = **new** Scanner(System.***in***);

**int** number = num.nextInt();

//calling the normal method

f.factorial(number);

// calling the recursion method

System.***out***.println("result: " + f.recursion(5));

}

}

**package** com.wbl.Loops;

**import** java.util.Scanner;

/\* Write a program to check an armstrong number i.e. whether the if we power

\* up the each individual number to the total number of digits in the number

\* and add them it should be equal to the number itself. For example 153 has 3 digits in it and if we do 1^3+5^3+3^3=153.

FYI: ^ means is to the power.\*/

**public** **class** Amstrong {

**public** **void** amstrongNum(**int** n){

**int** sum=0,rem,temp;

//int n=153;//It is the number to check armstrong

temp=n;

**while**(n>0)

{

rem=n%10;

n=n/10;

sum=sum+(rem\*rem\*rem);

}

**if**(temp==sum)

System.***out***.println("armstrong number");

**else**

System.***out***.println("Not armstrong number");

}

**public** **static** **void** main(String[] args) {

Amstrong num = **new** Amstrong();

@SuppressWarnings("resource")

Scanner s = **new** Scanner(System.***in***);

**int** number = s.nextInt();

num.amstrongNum(number);

}

}

**package** com.wbl.Loops;

**import** java.util.Scanner;

// Write a program that accepts input from the command line and then prints them.

**public** **class** CmdLineInput {

**private** **static** Scanner *s*;

**private** **static** Scanner *num*;

**public** **static** **void** main(String[] args) {

System.***out***.println("Enter a number : ");

*num* = **new** Scanner(System.***in***);

**int** input = *num*.nextInt();

System.***out***.println("Enter any string : ");

*s* = **new** Scanner(System.***in***);

String str = *s*.next();

System.***out***.println("Printing the number : " + input);

System.***out***.println("Command Line string Input is : " + str);

}

}

**package** com.wbl.Loops;

//h. Write a program that prints a pattern like below.

**public** **class** Pattern {

**public** **void** pattern(**int** n){

**for**(**int** i=1;i<=n;i++){ // n=5 i<=5 i=2

**for** (**int** j=1;j<=i;j++){//1<=1

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

}

System.***out***.println();

}

}

**public** **static** **void** main(String[] args) {

Pattern p = **new** Pattern();

p.pattern(5);

}

}

Arrays:

//Assignment Program: largest number in given array

**package** com.wbl.Arrays;

**public** **class** LargestNumber {

**int**[] numbers = {9,7,623,5,28};

**int** largest= numbers[0];

**public** **void** largest(){

**for**(**int** i=1;i<numbers.length;i++){

**if** (numbers[i] > largest)

largest= numbers[i];

}

System.***out***.println(largest);

}

**public** **static** **void** main(String[] args) {

LargestNumber l =**new** LargestNumber();

l.largest();

}

}

// Write a program to find the missing number in a series of sorted numbers stored in an array.

**package** com.wbl.Arrays;

**public** **class** MissingNumberInSeries {

**public** **void** numbers(**int** []arr){

**int** total=0;

**int** sum =0;

**int** n=10;

total =n\*(n+1)/2;

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

sum=arr[i]+sum;

}

**int** mnum=total-sum;

System.***out***.println("missing number in seq " + mnum);

}

// method for Even number sequence

**public** **void** missingEvenNumSeq(){

**int** [] array = {2,4,8,10,12,14};

**int** temp =2;

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

**if** (array[i]!=array[i+1]-temp){

temp=array[i+1]-temp;

}

}

System.***out***.println("missing number is " + temp);

}

**public** **static** **void** main(String[] args) {

MissingNumberInSeries num = **new** MissingNumberInSeries();

num.missingEvenNumSeq();

**int** []a = {1,3,6,2,7,8,5,9,10};

num.numbers(a);

}

}

// Write a program to find the common number in any given two arrays.

**package** com.wbl.Arrays;

**public** **class** CommonNumber {

**int**[] array1 = {12,35,65,37,89};

**int**[] array2 = {34,12,65,58,89};

**public** **void** commonArray(){

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

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

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

System.***out***.print(array1[i]);

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

}

}

}

}

**public** **static** **void** main(String[] args) {

CommonNumber cn = **new** CommonNumber();

cn.commonArray();

}

}

//Write a program to perform a linear search on any given array.Linear search is the

//basic search

//where you look for the element to be searched in a sequential way.

**package** com.wbl.Arrays;

**public** **class** LinearSearch {

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

**int** e= 3;

**boolean** found;

**public** **void** linearElementSearch(){

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

**if** (e==array[i]){

found=**true**;

System.***out***.println(e + " is present in array at the location " + i);

System.***out***.println("Array length : " + array.length);

}

}

**if**(found==**false**){

System.***out***.println("element not found");

}

}

**public** **static** **void** main(String[] args) {

LinearSearch ls = **new** LinearSearch();

ls.linearElementSearch();

}

}

WRONG OUTPUT NEED TO CHECK AGAIN:

**package** com.wbl.Arrays;

**import** java.util.Arrays;

**public** **class** SwapElementsSorting {

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

**boolean** value;

**public** **void** swap(){

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

**if**(array[i]<array[i+1]){

value=**true**;

}**else**

{

value = **false**;

array[i+1]=array[i];

}

System.***out***.println(array[i]);

}

}

**public** **static** **void** main(String[] args) {

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

//int[] newarray= swapElements(array);

//System.out.println(Arrays.toString(newarray));

SwapElementsSorting s = **new** SwapElementsSorting();

s.swap();

}

//Write a program to locate and swap only 2 elements which are not sorted in a given sorted array.

//For example given an array {1,2,5,6,4} locate 5 and 4 and then swap them as they are not as per sorted order.

**package** com.wbl.Arrays;

**public** **class** SwapElementsSorting {

**public** **void** swap(){

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

**int** a=2;

**int** b=4;

**int** temp;

System.***out***.println(" Printing given array : ");

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

System.***out***.println(array[i]);

}

temp = array[a];

array[a] = array[b];

array[b] = temp;

System.***out***.println("array after swaping the elements : ");

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

System.***out***.println(array[i]);

}

}

**public** **static** **void** main(String[] args) {

SwapElementsSorting s = **new** SwapElementsSorting();

s.swap();

}

}

Merging two arrays

**package** com.wbl.Arrays;

**import** java.util.Arrays;

**public** **class** Merge2Arrays {

**public** **static** **int**[] mergeOfArrays(**int**[]A,**int**[]B){

**int** [] C = **new** **int**[A.length+B.length];

**int** i=0;

**int** j=0;

**int** k=0;

**while**(i< A.length && j<B.length){

**if**(A[i]<B[j]){

C[k]=A[i];

i++;

}

**else**

{

C[k]=B[j];

j++;

}

k++;

}

**while**(i<A.length){

C[k]=A[i];

i++;

k++;

}

**while**(j<B.length){

C[k]=B[j];

j++;

k++;

}

**return** C;

}

**public** **static** **void** main(String[] args) {

//Merge2Arrays finalArray = new Merge2Arrays();

**int** [] A = { 1,3,5,7,10};

**int** [] B = { 2,4,6,0,12};

**int**[] C = *mergeOfArrays*(A,B); // static method accessing without object

System.***out***.println("merged Array" + Arrays.*toString*(C)); // explanation needed

}

}

//Write a program to sort an array.

**package** com.wbl.Arrays;

**public** **class** SortingArray {

**public** **void** Sort(**int**[] array) {

**int** len = array.length;

**int** temp = 0;

System.***out***.println("Array Before Sorting :");

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

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

}

System.***out***.println();

// Sorting Using BubbleSorting

**for**(**int** i = 0; i < len; i++) {

**for**(**int** j=1; j < (len-i); j++) {

**if**(array[j-1] > array[j]) {

temp = array[j-1];

array[j-1] = array[j];

array[j] = temp;

}

}

}

}

**public** **static** **void** main(String[] args) {

SortingArray arr = **new** SortingArray();

**int** array[] = {12,9,2,3, 5, 6, 8, 0,};

arr.Sort(array);

System.***out***.println("Array After Sort");

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

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

}

}

}

//Write a program to reverse a string.Donot use StringBuffer/StringBuilder inbuilt reverse function.

**package** com.wbl.Strings;

**public** **class** ReverseString {

**public** **void** reverseStr( ){

// stringbuffer and stringbuilder strings are declared using stringbuffer

///builder constructors only not with literals

StringBuffer str = **new** StringBuffer("DONUT");

StringBuilder str1 = **new** StringBuilder("stats");

System.***out***.println("reverse string " + str.reverse());

System.***out***.println("reverse string " + str1.reverse());

// other imp methods of stringbuffer/builder

StringBuilder string = **new** StringBuilder("Welcome");

string.append(" Everyone"); // here string is mutable..

System.***out***.println("String after append : " + string);

string.append(101);

System.***out***.println("Modified String : " + string);

System.***out***.println("after replace, printing the reverse String : " + string.replace(0, 6, "com").reverse());

}

// Reversing String without using StrinBuffer or Builder

**public** **void** strReverse(String input){ // innovapath

String rev = ""; // initialisation in not required

**char** [] array = **new** **char**[input.length()];

System.***out***.println("Given String is : " + input);

System.***out***.println("String Length : " + input.length());

**int** j=0;

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

array[j]=input.charAt(i);

j++;

}

rev=**new** String(array); // converting character array to string--initialisation is done here

System.***out***.println("Reverse String : " + rev);

**if** ((rev).equals(input)){

System.***out***.println("palindrome");

}

**else** {

System.***out***.println("String is not a palindrome");

}

}

**public** **static** **void** main(String[] args) {

ReverseString rs = **new** ReverseString();

rs.reverseStr();

rs.strReverse("stats");

}

}

//Write a program to find a substring in a given string and then replace it with another string.

// did some other methods for practice

**package** com.wbl.Strings;

**public** **class** SubStringReplace {

//sun string and replacing with other string

**public** **void** strReplace(String s){

System.***out***.println("String s : " + s);

System.***out***.println("sub string of " + s + " after replacing : " + s.substring(0, 5).replace("white", "black"));

System.***out***.println("\n");

}

//different string methods

**public** **void** subStrRep(String input){

String str = " whitebox learning";

System.***out***.println("String input " + str);

str= str.substring(0, 6);

System.***out***.println("sub string of input " + str);

str= str.replace("wh", "fi");

System.***out***.println("String after replacing " + str);

System.***out***.println("original string : " + input);

// returns the string start from 3rd letter

System.***out***.println("string from 3rd letter : " + input.substring(2));

//returns the string between 0th to 4th index values means first 4 letters

System.***out***.println("sub string from specified indexes : " + input.substring(0, 4));

System.***out***.println("sub string after replace : " + input.substring(0, 4).replace("l", "a"));

String str1 = "united states of america";

System.***out***.println("String 1 : " + str1);

System.***out***.println("length : " + str1.length());

System.***out***.println("string after trim : " + str1.trim());

System.***out***.println("character at particulat index : "+ str1.charAt(8));

System.***out***.println("checking the starting char :" + str1.startsWith("w"));

System.***out***.println(str1.concat(" USA"));

System.***out***.println("last index of " + input + " is : " + str1.lastIndexOf(input));

System.***out***.println("HashCode : " + str1.hashCode());

String s2 = "california";

System.***out***.println("Equality Check Boolean Result : " + input.equals(s2));

System.***out***.println("\n");

}

//method -3 -- replacing

**public** **void** subString(String s){

String str = "United kingdom";

**if** (str.contains(s)){

str = str.replace(s,"America");

System.***out***.println("String after replace :" + str);

} **else** {

System.***out***.println("no substring found");

System.***out***.println("String : " + str);

}

}

**public** **static** **void** main(String[] args) {

SubStringReplace st = **new** SubStringReplace();

System.***out***.println("Method-1 Output : ");

st.strReplace("whitebox");

System.***out***.println("Method-2 Output : ");

st.subStrRep("california");

System.***out***.println("Method-3 Output : ");

st.subString("kingdom");

}

}

// Write a program which accepts a string like "This is nice" and converts it to a string

//like "This1 is2 nice3"

**package** com.wbl.Strings;

**public** **class** ChangingString {

**public** **static** **void** main(String[] args) {

String str = "This is nice";

System.***out***.println("Given String : " + str);

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

s[0]=s[0]+1;

s[1]=s[1]+2;

s[2]=s[2]+3;

System.***out***.print("Modified String : " + s[0]+" "+s[1]+" "+s[2]);

}

}

/\*Write a program that takes input from user dynamically using below classes.

--> Scanner: Use this class to input 2 integer numbers and sum them.

--> BufferedReader and InputStreamReader: Use this classes to input 2 integer numbers and subtract them.

--> DatainputStream: Use this class to input 2 integer numbers and multiply them.

--> Console: Use this class to input 2 integer numbers and divide them.\*/

package com.wbl.FileHandling;

import java.util.Scanner;

public class DynamicInput {

private static Scanner num;

public static int sum(int a,int b){

int c =0;

c=a+b;

System.out.println("sum of " + a + " and " + b + " is : " + c);

return c;

}

public static void main(String[] args) {

int x,y;

// input using Scanner

num = new Scanner(System.in);

x = num.nextInt();

y = num.nextInt();

System.out.println(sum(x, y));

/\*public static void main(String[] args) {

int a,b,c;

System.out.println("Enter number : ");

Scanner num = new Scanner(System.in);

a= num.nextInt();

System.out.println("Enter a number : ");

b=num.nextInt();

c=a+b;

System.out.println("Sum of two numbers is : " + c);

}\*/

}

}

//Write a program to search for a string in a file and then return the count of number of occurrences of the string.

package com.wbl.FileHandling;

import java.io.BufferedReader;

import java.io.BufferedWriter;

import java.io.File;

import java.io.FileNotFoundException;

import java.io.FileReader;

import java.io.FileWriter;

import java.io.IOException;

public class StringOccuranceFile {

public static void main(String[] args) throws IOException {

File file = new File("java.txt");

file.createNewFile();

BufferedWriter bw = new BufferedWriter(new FileWriter(file));

bw.write("Data input can be handled in many ways.\n we can use scanner InputStreamReader "

+ "Datainputstream and console\n for input data.");

bw.flush();

bw.close();

int count=0;

@SuppressWarnings("resource")

BufferedReader br = new BufferedReader(new FileReader(file));

String line = br.readLine();

while(line!=null){

if(line.contains("can")){

count++;

System.out.println(line);

}

line=br.readLine();

}

System.out.println("word 'can' is repeated in file : " + count + " times");

}

}

// Write a program to count the number of words in a file.

package com.wbl.FileHandling;

import java.io.BufferedReader;

import java.io.FileReader;

import java.io.IOException;

public class WordsCountFromFile {

public static void main(String[] args) throws IOException {

System.out.println ("Counting Words");

FileReader fr = new FileReader ("C:\\Users\\arien213\\Desktop\\aa.txt");

@SuppressWarnings("resource")

BufferedReader br = new BufferedReader (fr);

String line = br.readLine();

int count = 0;

while (line != null) {

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

for( String w : words)

{

count++;

System.out.println(w);

}

line = br.readLine();

}

System.out.println("total words in File are : " + count);

}

}

// Write a program to search for a string in a file and then replace it with another string.

package com.wbl.FileHandling;

import java.io.BufferedInputStream;

import java.io.FileInputStream;

import java.io.FileNotFoundException;

import java.util.Scanner;

public class WordSearchReplaceFile {

public static void main(String[] args) throws FileNotFoundException {

FileInputStream in = new FileInputStream("C:\\Users\\arien213\\Desktop\\aa.txt");

BufferedInputStream buffer = new BufferedInputStream(in);

Scanner scan = new Scanner(buffer);

String str = scan.nextLine();

String rep = str.replaceAll("java", "C++");

System.out.println("the string before replace: " + str);

System.out.println("the string after replace: "+ rep);

scan.close();

}

}

ERROR CODE:

// Using Console input the numbers

System.***out***.println("Enter the number using Console class for Division ");

Console con= System.*console*();

String fnum =con.readLine();

String secnum =con.readLine();

**int** div = Integer.*parseInt*(fnum)/Integer.*parseInt*(secnum);

System.***out***.println("Division : " + div);

/\*String x = console.readLine("Enter x value :");

String y = console.readLine("Enter y value : ");

int n1 = Integer.parseInt(x);

int n2 = Integer.parseInt(y);

try{

div = n1/n2;

}catch(NullPointerException np){

System.out.println("Exception Message : " + np.getMessage());

}\*/

/\*Write a program having different methods to perform below operations.

--> To create an arraylist and add elements to it.

--> To search for an element in the list.

--> To print the elements of the list using iterator.

--> To print the elements in the reverse order using ListIterator.\*/

**package** collection;

**import** java.util.ArrayList;

**import** java.util.Iterator;

**import** java.util.List;

**import** java.util.ListIterator;

**public** **class** ArrayListProgram {

**public** **void** arrayListMethod(){

// creating the ArraList Class object with List Interface

List<String> list = **new** ArrayList<String>();

// Adding the Elements using add method

list.add("apple");

list.add("pineapple");

list.add("Strawbery");

list.add("banana");

list.add("grapes");

// displaying the elements from list

**for** (**int** i=0;i<list.size();i++){

System.***out***.println("Element at " + i + " posiotion is : " + list.get(i));

}

System.***out***.println("Size of the list is : " + list.size());

System.***out***.println("first element in list is : " + list.get(0));

System.***out***.println("last element in list is : " + list.get(list.size()-1));

//searching element

**if** (list.contains("banana")){

System.***out***.println("search element is found");

System.***out***.println("index value of searched element " + list.indexOf("banana"));

}

**else**{

System.***out***.println("element not found in list");

}

}

**public** **void** integerList(){

List<Integer> intList = **new** ArrayList<Integer>();

intList.add(12);

intList.add(18);

intList.add(**null**);

intList.add(25);

intList.add(30);

// displaying the elements using Iterator

System.***out***.println("Integer list elements are : ");

Iterator<Integer> itr = intList.iterator();

**while**(itr.hasNext()){

System.***out***.println( itr.next());

}

//printing list in reverse

System.***out***.println("Integer list elements in reverse order : ");

ListIterator<Integer> liitr = intList.listIterator();

**while**(liitr.hasPrevious()){

System.***out***.println(liitr.previous());

}

}

**public** **static** **void** main(String[] args) {

ArrayListProgram al = **new** ArrayListProgram();

al.arrayListMethod();

al.integerList();

}

}

/\* Write a program that defines an enum having months of the year and then prints the value

\* of all the enum elements.

\*/

**package** collection;

**public** **class** EnumExample {

**enum** Months{

***January***,***February***,***March***,***April***,***May***,***June***,***July***,***August***,***September***,***October***,***November***,***December***;

}

**public** **static** **void** main(String[] args) {

Months[] months = Months.*values*();

**for**(Months month : months){

System.***out***.println(month +" : "+month.ordinal());

}

}

}

/\*Write a program having below methods.

--> To create a hashmap.

--> To search for a key in the created map and then returns its value.\*/

package collection;

import java.util.HashMap;

import java.util.Map;

import java.util.Map.Entry;

public class MapElemSearch {

public void mapExample(){

// map creation

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

// adding values to map

map.put(101, "akhil");

map.put(121, "henry");

map.put(102, "tejas");

map.put(null, "megha");

map.put(110, null);

// Iteration- retrieving elements

for(Entry<Integer, String> mapentry : map.entrySet()){

System.out.println("key : " + mapentry.getKey() + " Value : " + mapentry.getValue() + " HashCode : " + mapentry.hashCode());

}

// searching element and displaying corresponding value

if(map.containsKey(null)){

System.out.println(map.get(null));

}

}

public static void main(String[] args) {

MapElemSearch mp = new MapElemSearch();

mp.mapExample();

}

}