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| LAB ASSIGNMENT 2 |
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1) import java.util.Scanner;  
  
public class ass\_1 {  
 public static void main(String arg[]){  
 Scanner sc=new Scanner(System.*in*);  
 System.*out*.println("enter the size");  
 int size;size=sc.nextInt();  
 int arr[]=new int[size];  
 System.*out*.println("enter array");  
 for(int i=0;i<size;i++){  
 arr[i]=sc.nextInt();  
 }  
 int check=0;  
 for(int i=0;i<size;i++){  
 if(arr[i]!=0){  
 arr[check++]=arr[i];  
 }  
 }  
 while(check<size){  
 arr[check++]=0;  
 }  
 System.*out*.println("final array is :");  
 for(int i=0;i<size;i++){  
 System.*out*.print(arr[i]+" ");  
 }  
 }  
}

2) import java.lang.\*;  
import java.util.\*;  
class sec{  
 public static void main(String[] args){  
 Scanner sc=new Scanner(System.*in*);  
 int size;  
 System.*out*.println("Enter size :");  
 size=sc.nextInt();  
 int[] a=new int[size];  
 System.*out*.println("Enter values in array : ");  
 for(int i=0;i<size;i++){  
 a[i]=sc.nextInt();  
 }  
 int k;  
 System.*out*.println("Enter k : ");  
 k=sc.nextInt();  
 //Set<Integer>hash\_set=new Set<Integer>();  
 SortedSet<Integer> ts  
 = new TreeSet<Integer>();  
 for(int i=0;i<size;i++){  
 ts.add(a[i]);  
 }  
 if(ts.size()<k){  
 System.*out*.println("not enough element");  
 }  
 else{  
 Iterator<Integer> i = ts.iterator();  
 int b[]=new int[ts.size()];  
 int val=0;  
 while(i.hasNext()){  
 b[val++]=i.next();  
 }  
 for(int c=ts.size()-1;c>=ts.size()-k;c--){  
 System.*out*.print(b[c]+" ");  
 }  
 }  
 }  
}

3) import java.lang.\*;  
import java.util.\*;  
class third{  
 public static void main(String[] args){  
 System.*out*.println("Enter a number :");  
 Scanner sc=new Scanner(System.*in*);  
 int n,n1,comp=0;  
 n=sc.nextInt();  
 n1=n;  
 while(n>0) {  
 int d = n % 10;  
 n = n / 10;  
 comp = comp\* 10 + d;  
 }  
 if(n1==comp){  
 System.*out*.println("Palindrome");  
 }  
 else{  
 System.*out*.println("Not a Palindrome");  
 }  
 }  
}

4) import java.lang.\*;  
import java.util.\*;  
class fourth{  
 public static void main(String[] args){  
 System.*out*.println("Enter size of array :");  
 Scanner s=new Scanner(System.*in*);  
 int size;  
 size=s.nextInt();  
 int[] a=new int[size];  
 System.*out*.println("Enter elements of array :");  
 for(int i=0;i<size;i++){  
 a[i]=s.nextInt();  
 }  
 int flag=0;  
 for(int i=0;i<size-2;i++){  
 if(a[i]<a[i+1] && a[i+1]<a[i+2]){  
 System.*out*.println("Yes");  
 flag=1;  
 break;  
 }  
 else{  
 flag=0;  
 }  
 }  
 if(flag==0){  
 System.*out*.print("No");  
 }  
 }  
}

5) import java.util.Scanner;  
  
public class fifth {  
 public static void main(String[] args) {  
 Scanner scannedInput = new Scanner(System.*in*);  
  
 System.*out*.print("Enter x, y and p : ");  
  
 int x = scannedInput.nextInt();  
 int y = scannedInput.nextInt();  
 int p = scannedInput.nextInt();  
  
 System.*out*.print("\nNumbers in range x and y, divisible by p are : ");  
  
 for (int i = x; i < y; i++){  
 if ( i % p == 0){  
 System.*out*.print(i + " ");  
 }  
 }  
 }  
}

## 6) import java.util.Scanner; public class sixth { public static void main(String[] args) { Scanner scannedInput = new Scanner(System.*in*); System.*out*.print("Enter first string : "); String firstString = scannedInput.nextLine().trim(); System.*out*.print("Enter second string : "); String secondString = scannedInput.nextLine().trim(); if (secondString.contains(firstString)){ System.*out*.println("Yes, second string contains first string"); }else { System.*out*.println("No, second string does not contain first string"); } } }

7) import java.util.Scanner;

public class vii\_Compare {

public static void main(String[] args) {

Scanner scannedInput = new Scanner(System.in);

System.out.print("Enter first string : ");

**String** firstString = scannedInput.nextLine().trim();

System.out.print("Enter second string : ");

String secondString = scannedInput.nextLine().trim();

int comparison = secondString.compareTo(firstString);

if (comparison == 0){

System.out.println("Both strings are same");

} else if (comparison < 0) {

System.out.println("String 2 comes first lexicographically");

}else {

System.out.println("String 1 comes first lexicographically");

}

}

}

10) import java.util.Scanner;

public class x\_CountNumbers {

public static void main(String[] args) {

Scanner scannedInput = new Scanner(System.in);

int[] countArray = new int[50];

System.out.println("Enter the numbers : ");

int x = 0;

while (x!=-1){

x = scannedInput.nextInt();

// Print Array if -1 is entered

// Print counting of (i+1) \* 2 index, for example, if i = 0, it is frequency of 2. If i = 10, it is frequency of 22.

if (x==-1){

for (int i = 0 ; i < 50; i++){

if (countArray[i] != 0)

System.out.println(2\*(i+1) + " occurs " + countArray[i] + " times");

}

}

// Skip the number if out of bound

if (x <2 || x > 100)

continue;

// Increment (x/2) -1 th index of array . For example, if we enter 2, index 0 is incremented. For 50, index 24 is incremented

if (x%2 == 0)

countArray[ (x/2) -1]++;

}

}

}

12) import java.util.Scanner;

public class xii\_SixTracker {

public static class NumberOfSixes{

int sixesHit;

NumberOfSixes(){

sixesHit = 0;

}

int getSixesHit(){

return sixesHit;

}

void setSixesHit(){

sixesHit++;

}

}

public static void main(String[] args) {

Scanner scannedInput = new Scanner(System.in);

int choice = 0;

NumberOfSixes sixTracker = new NumberOfSixes();

while (choice!=3){

System.out.print("Enter choice \n1. -> Increase six by 1\n2. -> Print the number of sixes\n3. -> Quit\n ");

choice = scannedInput.nextInt();

switch (choice) {

case 1 -> sixTracker.setSixesHit();

case 2 -> System.out.println("Sixes hit by now are : " + sixTracker.getSixesHit());

case 3 -> System.out.println("Thank You, have a good day!");

default -> System.out.println("Sorry, wrong choice!");

}

}

}

}

13) import java.util.Scanner;

class ReadingMaterial{

String typeOfMaterial;

int pages;

int characters;

String[] charArray;

void takeCharacters(){

System.out.println("\nEnter " + characters + " characters : ");

Scanner scannedInput = new Scanner(System.in);

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

charArray[i] = scannedInput.next();

}

}

// Constructor of class

ReadingMaterial(String type, int numberOfCharacters, int page){

typeOfMaterial = type;

characters = numberOfCharacters;

charArray = new String[numberOfCharacters];

takeCharacters();

pages = page;

}

void printData(){

System.out.println("Number of pages : " + pages);

System.out.print("Characters are : ");

for (String character : charArray){

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

}

}

}

public class xiii\_ClassOfClasses {

public static void main(String[] args) {

ReadingMaterial book = new ReadingMaterial("Book", 2, 200);

book.printData();

ReadingMaterial novel = new ReadingMaterial("Novel", 3, 748);

novel.printData();

}

}

14) public class xiv\_SavingsAccount {

static class SavingsAccount{

static double annualInterestRate = 0.087;

double savingsBalance = 0.00;

double calculateMonthlyInterest(){

double interest = annualInterestRate\*savingsBalance/12;

savingsBalance+=interest;

return interest;

}

static void modifyInterestRate(double interest){

annualInterestRate = interest;

}

}

public static void main(String[] args) {

SavingsAccount saver1 = new SavingsAccount();

saver1.savingsBalance = 2000;

SavingsAccount saver2 = new SavingsAccount();

saver2.savingsBalance = 3000;

SavingsAccount.modifyInterestRate(4.00);

saver1.calculateMonthlyInterest();

saver2.calculateMonthlyInterest();

System.out.println("Saver 1 balance : " + saver1.savingsBalance);

System.out.println("Saver 2 balance : " + saver2.savingsBalance);

SavingsAccount.modifyInterestRate(5.00);

saver1.calculateMonthlyInterest();

saver2.calculateMonthlyInterest();

System.out.println("Saver 1 balance : " + saver1.savingsBalance);

System.out.println("Saver 2 balance : " + saver2.savingsBalance);

}

}