Aditya Degree Colleges

Java Online Training Coding Test_9 Key

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Program – 1:

You have been asked to help study the population of birds migrating across the continent. Each type of bird you are interested in will be identified by an integer value. Each time a particular kind of bird is spotted, its id number will be added to your array of sightings. You would like to be able to find out which type of bird is most common given a list of sightings. Your task is to print the type number of that bird and if two or more types of birds are equally common, choose the type with the smallest ID number.

For example, assume your bird sightings are of types arr=[1,1,2,23]. There are two each of types 1 and 2, and one sighting of type 3. Pick the lower of the two types seen twice: type 1.

Function Description

Complete the migratory Birds function in the editor below. It should return the lowest type number of the most frequently sighted bird.

Migratory Birds has the following parameter(s):

arr: an array of integers representing types of birds sighted

Input Format

The first line contains an integer denoting n, the number of birds sighted and reported in the array **arr**.

The second line describes arr as n space-separated integers representing the type numbers of each bird sighted.

Constraints:

$5<=n<=2X10^5$

It is guaranteed that each type is 1, 2, 3, 4, or 5.

Output Format:

Print the type number of the most common bird; if two or more types of birds are equally common, choose the type with the smallest ID number.

Sample Input:

6

1 4 4 4 5 3

Sample Output:

4

Explanation:

The different types of birds occur in the following frequencies:

Type 1: 1 bird

Type 2: 0 birds

Type 3: 1 bird

Type 4: 3 birds
Type 5: 1 bird
The type number that occurs at the highest frequency is type 4, so we print 4 as our answer.

Sample Input2:
11
1 2 3 4 5 4 3 2 1 3 4
Sample Output2:
3
Explanation:
The different types of birds occur in the following frequencies:
Type 1: 2
Type 2: 2
Type 3: 3
Type 4: 3
Type 5: 1
Two types have a frequency of 3, and the lower of those is type 3.

Testcase1:
Input:
15
1 2 3 1 2 4 5 3 2 1 4 2 3 5 1
Output:
1

Testcase2:
Input:
11
1 2 3 4 5 4 3 2 1 3 4
Output:
3

Testcase3:
Input:
6
1 4 4 4 5 3
Output:
4

Testcase4:

Input:

10

1 2 3 4 2 3 4 3 4 5

Output:

3

Source Code:

```
import java.util.*;
class TestDemo
{
  public static void main(String args[])
        {
          Scanner sc=new Scanner(System.in);
          int num,ele[],i,result=0,pos=0,max,b[];
          b=new int[5];
          num=sc.nextInt();
          ele=new int[num];
          for(i=0;i<num;i++)
                {
                   ele[i]=sc.nextInt();
                }
         for(i=0;i<num;i++)
           {
               b[(ele[i]-1)%5]++;
           }

        max=b[0];
        for(i=1;i<5;i++)
        {
           if(b[i]>max)
             {
                max=b[i];
                pos=i;

             }

        }
     System.out.println(pos+1);
          sc.close();
        }
}
```

Program – 2:

Vikhita is good in using strings. Now Mr.Srinu her faculty asked her to do a task. Given a string and a number n to Vikhita she needs to take n characters from the string at a time and she needs to count the number of vowels present up to n. The process has to be repeated until she reaches the end of the string. Finally she need to tell the start index, end index and count of vowels present I that range which is the substring with maximum count of vowels present in the string. Help Vikhita in solving the problem.

Note: If more than one substring is found with maximum count of vowels then print the start index, end index and count of vowels of the first occurring substring.

Sample Testcase1:

Input:

adityagroup

4

Output:

0 3 2

Testcase1:

Input:

adityagroup

4

Output:

0 3 2

Testcase2:

Input:

aeixoiaub

4

Output:

4 7 4

Testcase3:

Input:

aefoui

3

Output:

3 5 3

Testcase4:

Input:

adityagroupofengineeringcollegesarelocatedatsurampalem

9

Output:

5 13 5

Source Code:

```
import java.util.*;
class Prog9_1
{
        public static void main(String args[])
        {
       Scanner sc=new Scanner(System.in);
                String vowels="aeiou",s1;
                char ch[];
                int n,i,j,start=0,end=0,max=0,count=0;
                String msg=sc.next();
                n=sc.nextInt();
                for(i=0;i<=msg.length()-n;i++)
                {    count=0;
                        s1=msg.substring(i,i+n);
                         ch=s1.toCharArray();
                         for(j=0;j<ch.length;j++)
                                 if(vowels.contains(ch[j]+""))
                                      count++;
                         if(count>max)
                        {
                                start=i;
                                end=i+n-1;
                                max=count;
                        }

                }
                System.out.println(start+" "+end+" "+max);
        }
}
```

MCQ_Day_9_KEY:

Which of these is a process of writing the state of an object to a byte stream?
A. Serialization
B. Externalization
C. File Filtering
D. All of the mentioned
ANSWER:A

The ObjectOutputStream class is used to serialize an Object
A) True
B) False
C) None of the above
D) Some times only it is used
ANSWER:A

Predict the output

```
class Demo{
        public static void main(String a[]){
        String s=Integer.toBinaryString(2);
        System.out.println(s);
}
}
```

A) 2
B) 10
C) NumberFormatExceptiom
D) No such Method
ANSWER: B

Find the output

```
public class ExceptionDemo {
        public static void main(String[] args) {
        String s="1012";
        try{
        int num=Integer.parseInt(s,8);
        System.out.print(num);

    }
        catch(NumberFormatException e)
        {
            System.out.println("Invalid Input");
        }

        }

}
```

A) 1012
B) 12
C) Invalid Input

D) 522
ANSWER:D

Prevention of method overirding is possible through the below keyword
A) super
B) this
C) final
D) extends
ANSWER: C

What is the output of the following code?

```
class First
{
   void display()
   {
      System.out.print("Inside First");
   }
}
class Second extends First
{
   void display()
    {
      System.out.print("Inside Second");
    }
 }
class Test
{
   public static void main(String args[])
   {
     First obj1=new First();
     Second obj2=new Second();
     First ref;
     ref=obj1;
     ref.display();

     ref=obj2;
     ref.display();
   }
}
```

A) Runtime Error
B) Inside FirstInside Second
C) Inside FirstInside First
D) Compilation Error
ANSWER:B

Which of these methods is used to print stack trace?
a) obtainStackTrace()
b) printStackTrace()
c) getStackTrace()
d) displayStackTrace()
ANSWER:B

Which of these classes is super class of Exception class?
a) Throwable
b) System
c) RunTime
d) Class
ANSWER:A

What will be the output of the following Java code?

```
class Myexception extends Exception
{
      int detail;
    Myexception(int a)
    {
       detail = a;
     }
     public String toString()
    {
         return "detail";
     }
}
class Output
{
    static void compute (int a) throws Myexception
    {
          throw new Myexception(a);
     }
     public static void main(String args[])
    {
       try
       {
          compute(3);
       }
      catch(Myexception e)
      {
         System.out.print("Exception");
      }
    }
}
```

a) 3
b) Exception
c) Runtime Error

d) Compilation Error
ANSWER:B

Find the possible error in the below code

```
class Hello {
  private static int aStaticVariable = 1;
  private int aNonStaticVariable = 2;

  private static void aStaticMethod() {
    System.out.println(aNonStaticVariable);
    }

  private void aNonStaticMethod() {
    System.out.println(aStaticVariable);


    System.out.println(aStaticVariable);
  }

}
```

A) static variable aNonStaticVariable cannot be referenced from a non static context
B) non-static variable aNonStaticVariable cannot be referenced from a static context
C) No error
D) None of the mentioned
ANSWER:B

```
class Employee implements Serializable
{
   private String firstName;
   private String lastName;
   private transient String confidentialInfo;
}
```

A) Employee Object is serialized with all fields
B) Employee Object is serialized Except confidentialInfo
C) NotSerilaizable Exception
D) transient keyword is used for pointing the TranientModifedException
ANSWER:B

The intimation of checked exceptions are reported to the compiler using throw keyword.
A) True
B) False
C) Can't possible to say
D) None of the above
ANSWER:B

```
public class ExceptionDemo {

        public static void main(String[] args) {
        try{
            double d=10.0/0;
            System.out.print(d);
            System.out.print("Welcome");

        }
        catch(ArithmeticException e)
        {
            System.out.print("Hello");
        }
}
}
```

A) Infinity Welcome
B) Hello
C) Welcome
D) Infinity

Answer :A

Which of the following statements are invalid?
A) try block followed by zero or more catch blocks
B) try block followed by finally block
C) try block followed by catch,and finally
D) try block without catch and finally possible

ANSWER: D

Abstraction concept in possible through
A) Inheritance
B) interfaces
C) Multithreading
D) Exception Handling

ANSWER:B

```
class Test
{
   int i;
}
class Main
{
   public static void main(String args[])
   {
      Test t=new Test();
      System.out.println(t.i);
   }
}
```

A) garbage value
B) runtime error
C) 0
D) compiletime error
ANSWER:C

What is the output ?

```
class A{
A(){
System.out.print("Hello ");
}
}
class InitDemo extends A{
A ob=new A();
InitDemo(){
System.out.print("hello 1 ");
}
public static void main(String... args){
System.out.print("Hello 2 ");
new InitDemo();
}
}
```

Please choose only one ANSWER:
A) Hello 2 hello 1 Hello Hello
B) Hello 2 Hello Hello hello 1
C) Hello 2 Hello hello 1 Hello
D) Exception is thrown at runtime.
ANSWER:B

Which keyword is used to specify the exception thrown by method?
A) catch
B) throws
C) finally
D) throw
ANSWER:B

Which of the following blocks executes compulsorily whether exception is caught or not?
A) finally
B) catch
C) throws
D) throw
ANSWER:A

What happen in case of multiple catch blocks?
A) Either super or subclass can be caught first
B) The superclass exception must be caught first
C) The superclass exception cannot caught first
D) None of the above.
ANSWER:C

Which of the below statement is/are true about Error?
A) An Error is a subclass of Throwable
B) An Error is a subclass of NumberFormatException
C) Error indicates serious problems that a reasonable application should not try to catch.
D) An Error is a subclass of IOException
A) B only
B) A only
C) A and C
D) B and D
ANSWER:B