Aditya Degree Colleges

Java Online Training Coding Test_3 Key

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Program - 1

Chhota Bheem's notebook is encrypted with a secret password. He never remembers the password, because he uses a hint and a formula to generate the password.
The hint is a series of N positive numbers. Some of these numbers are purposely left blank, and these are denoted by -1

He tells you that the way to generate the **password is:**
First you need to fill in the blanks. If numbers on both sides of the blank are both odd, or are both even, then fill it with the absolute difference of both numbers. However, if both the numbers different (i.e. one is odd and the other is even), in that case fill it with the floor of the arithmetic mean of the 2 numbers.
Second, after you have filled in the blanks, reduce all numbers by 1 except the last number and the numbers whose value is already 1.
Finally, print all the numbers without any spaces. That is the password.
Note: The blanks never appear at the start or end of the list. The blanks also never appear next to each other

Input Format

- The first line contains T the number of test cases
- The following T lines contains N followed by N numbers (all greater than 0). This is the hint as given by Chhota Bheem

Note: N>=3

Output Format

- Print T passwords in a separate line

Example Input

```
3
5 9 -1 8 1 2
3 9 1 4
10 1 22 3 17 -1 5 -1 8 -1 10
```

Example Output

```
87712
814
12121611457110
```

Explanation

1. In the first case, the blank is replaced by (9+8) / 2 = 8.5, since we take floor, we take 8. Then all numbers are subtracted by 1 as per the conditions: 8 7 7 1 2. Finally, print: 87712

2. In the second case, there are no blanks to fill, so we just subtract 1 from applicable numbers. In this case, that is the first number 9. Thus we print 814

3. In the last case, the blanks are filled as follows:
1 22 3 17 12 5 6 8 2 10
Then, subtracting by 1:
1 21 2 16 11 4 5 7 1 10
And printing 12121611457110

Testcase1:
Input:
2
4 2 -1 3 5
8 1 2 3 -1 4 -1 5 6
Output:
1125
11223346

Testcase2:
Input:
3
5 9 -1 8 1 2
3 9 1 4
10 1 22 3 17 -1 5 -1 8 -1 10
Output:
87712
814
12121611457110

Testcase3:
Input:
3
6 2 4 -1 6 8 10
5 3 -1 4 2 6
6 3 -1 4 2 -1 8
Output:
1315710
22316
223158

Source Code:

```
import java.util.*;
class Prog3_1
{
	public static void main(String args[])
	{
		Scanner sc=new Scanner(System.in);
		int n,i,testcases;
		int ele[];
		testcases=sc.nextInt();
	    for(int k=0;k<testcases;k++)
		{
			n=sc.nextInt();
			ele=new int[n];
			for(i=0;i<n;i++)
				ele[i]=sc.nextInt();
			for(i=0;i<n;i++)
			{
				if(ele[i]==-1)
				{
	if((ele[i-1]%2==0 && ele[i+1]%2==0) || (ele[i-1]%2==1 && ele[i+1]%2==1))
						ele[i]=Math.abs(ele[i-1]-ele[i+1]);
					else
						ele[i]=(int)Math.floor((ele[i-1]+ele[i+1])/2);
				}
			}
			for(i=0;i<n-1;i++)
				if(ele[i]==1)
					System.out.print(ele[i]);
				else
					System.out.print(ele[i]-1);
			System.out.print(ele[n-1]);


		}
		sc.close();
	}
}
```

Program -2

Ramesh is good at loops. His teacher Kiran wants to test Ramesh on loops. Now Kiran given a task to his student find the following type of pattern by given input as an integer.

Now Ramesh is trying to write the logic for implementing pattern given by his teacher, but he failed to complete his task. He needs help for that task. So write a java program to implement the pattern given by his teacher kiran.

Input Format:

A line contains an integer value

Output Format:

Print the pattern for the given integer.

Sample Input:

5

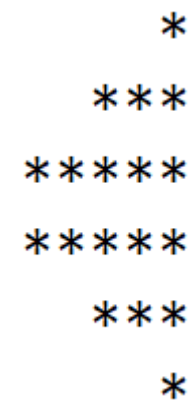
Sample Output:

```
    *
  ***
*****
  ***
    *
```

Sample Input2:

6

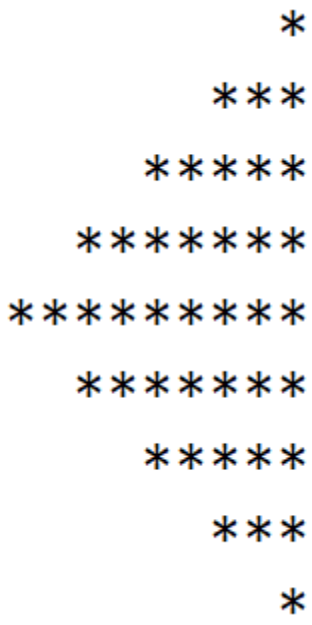
Sample Output:



Sample Input3:

9

Sample Output:



Source Code:

```
import java.util.*;
class Pattern
{
	public static void main(String args[])
	{
		Scanner sc=new Scanner(System.in);
		int i,j,n,k;
		n=sc.nextInt();
		for(i=1;i<2*n;i=i+2)
		{
			k=i>n?n-i%n:i;

			for(j=1;j<=n;j++)
				if(j<=n-k)
				  System.out.print(" ");
			    else
				  System.out.print("*");
			  System.out.println();
		}
	}
}
```

MCQ Day5_KEY

Class Varibles memory is common to all Object

A) True

B) False

C) Sometimes it is true

D) None of the above

Answer: A

Data hiding is possible through

A) public

B) private

C) Protected

D) default

Answer: B

Predict the output

```
class A
{
int x=10;
}
class Demo
{
public static void main(String args[]){
A o=new A();
System.out.println(o.x++);
}
}
```

A) 11

B) 10

C) compile time error

D) run time error

Answer: B

Abstraction refers to

A)Extends parent class

B)Declaring more than one method with same name

C)Hiding unneccary details and shows necessary details

D)Overriding method of super class

Answer:C

Which is private member functions access scope?
a) Member functions which can only be used within the class
b) Member functions which can used outside the class
c) Member functions which are accessible in derived class
d) Member functions which can't be accessed inside the class
Answer: A

Each Object have it's own block of memory
A) True
B) False
C) None of the above
D) Neither A nor B
Answer: A

Constructor is invoked at the time of
A) Compilation
B) object creation
C) method calling
D) class creation
Answer: B

```
class A
   {
      boolean checkString(String s)
        {
          if(s.equals("JAVA"))
            return true;
          else
            return false;
        }

public static void main(String args[])
{
A o=new A();
System.out.println(o.checkString("Java"));
}
}
```

A) true
B) false
C) Java
D) JAVA
Answer: B

```
class ArrayDemo
{
   void show(int a[])
    {
          for(int i=0;i<a.length;i++)
            if(a[i]%2==0)
              System.out.print(a[i]+" ");
    }
  public static void main(String args[])
  {
     ArrayDemo ad=new ArrayDemo();
     int a[]={4,7,6,5};
     ad.show(a);
  }
}
```

A) 4 7
B) 7 6
C) 6 5
D) 4 6
Answer: D

this keyword refers to
A) current class instance object
B) super class instance object
C) sub class instance object
D) static class instance object
Answer: A

```
class A
{
  A()
  {
    System.out.println("World");
   }
 static
 {
   System.out.print("Hello"+" ");
 }
}
```

```
class Demo
{
  public static void main(String args[])
  {
    A o=new A();
   }
}
```
A) Hello
B) World
C) Hello World
D) World Hello
Answer: C

Which of the following is an invalid syntax for the object creation for Box class?
A) Box b=new Box();
B) Box b;b=new Box();
C) Box b1=new Box();Box b2;b2=b1;
D) Box b1=new Box();Box b2;b1=b2;
Answer: D

```
class A
{
 void A()
 {
  System.out.print("World ");
 }
}
class Demo
 {
   public static void main(String args[])
   {
     A o=new A();
     o.A();
    }
 }
```
A) Compilation Error
B) World
C) World World
D) Runtime Error
ANSWER:B

```
class A
{
void add(int x)
{
System.out.print("int );
}
void add(long x)
{
System.out.println("long ");
}

}
class Demo
{
public static void main(String args[])
{
A o=new A();
o.add(12);
o.add(1000000482);
}
}
```

A) int long
B) long int
C) int int
D) long long

Answer :C

Runtime polymorphism feature in java is
A) method overriding
B) method overloading
C) constructor overloading
D) operator overloading

Answer :A

For Cat and Animal class, correct way of inheritance in java is
A) class Cat extends Animal
B) class Animal extends Cat
C) Both are correct way
D) None is correct way

Answer: A

Which of the following are true on constructors
A) it is special type of member function
B) constructor name must be the class name
C) No need to call constructor
D) All of the above.
ANSWER:D

Which polymorphism behavior do you see in below class?

```
class Paint {
        // all methods have same name
        public void Color(int x) {
        }

        public void Color(int x, int y) {
        }

        public void Color(int x, int y, int z) {
        }
}
```

A) Method overloading
B) Constructor overloading
C) Method overriding
D) Run time polymorphism
Answer :A

Java does not support _____?
A) Inheritance
B) Multiple inheritance for classes
C) multiple inheritance of interfaces
D) compile time polymorphism
Answer: B

Garbage collection in Java is
A) Unused package in a program automatically gets deleted.
B) Memory occupied by objects with no reference is automatically reclaimed for deletion.
C) Java deletes all unused java files on the system.
D) The JVM cleans output of Java program.
Answer: B