PENTAGON SPACE
Mastering The Future

Assignment Question

Array & Pattern

Q1. ISBN-10 identifiers are ten digits long. The first nine characters are digits 0-9. The last digit can be 0-9 or X, to indicate a value of 10. An ISBN-10 number is valid if the sum of the digits multiplied by their position modulo 11 equals zero.

For example:

ISBN : 1 1 1 2 2 2 3 3 3 9
position : 1 2 3 4 5 6 7 8 9 10
This is a valid ISBN, because:

```
(1*1 + 1*2 + 1*3 + 2*4 + 2*5 + 2*6 + 3*7 + 3*8 + 3*9 + 9*10) % 11 = 0
```

Examples

1112223339 --> true
111222333 --> false

In [ ]:
```java
mport java.util.Scanner;

public class ISBN {
public static void main(String[] args) {
    Scanner scan = new Scanner(System.in);
    String input = scan.next();

    int arr [] = new int[input.length()];
    int inputnum = Integer.parseInt(input);
    int temp = inputnum;

    int i = 0;
    while(temp !=0) {
        int digits = temp % 10;
        if(i<input.length())
        arr[i++] = digits;
        temp /= 10;
    }
    int sum = 0;
    int j = 1;
    for (int k = arr.length-1; k>=0;k--) {
        sum = sum + arr[(arr.length)-(k+1)] * (j++);
    }
    if(sum % 11 ==0) {
        System.out.println("This is a valid ISBN");
    }
    else {
        System.out.println("This is a Not valid ISBN");
    }
}
}
```

Q2. Write Java Program to find sum of Array.
Example:

input:

```
x = {2,3,4,5,6,7,8,5,4}
```

output:

```
44
```

In [ ]:
```
class Test
{
    static int arr[] = {12,3,4,15};

    static int sum()
    {
        int sum = 0;
        int i;

        for (i = 0; i < arr.length; i++)
            sum += arr[i];

        return sum;
    }

    public static void main(String[] args)
    {
        System.out.println("Sum of given array is " + sum());
        }
}
```

Q3. Write Java Program to find index wise sum of two Array.
Example:

input:

```
x = {2,3,4,5,6,7,8,5,4}
y = {5,4,3,3,4,5,6,6,8}
```

output:

```
7, 7, 7, 8, 10, 12, 14, 11, 12
```

In [ ]:
```
import java.util.Scanner;
import java.util.Arrays;

public class TwoArraySum {
  public static void main(String[] args) {

    // create Scanner class object
    Scanner scan = new Scanner(System.in);

    // take number of elements in both array
    System.out.print("Enter number of elements in first array: ");
    int array1size = scan.nextInt();
    System.out.print("Enter number of elements in second array: ");
    int array2size = scan.nextInt();

    // both array must have same number of elements
    if(array1size != array2size) {
      System.out.println("Both array must have "+
                         "same number of elements");
      return; // stop
    }

    // declare three array with given size
    int array1[] = new int[array1size];
    int array2[] = new int[array1size];
    int array3[] = new int[array1size];

    // take input for array1 elements
    System.out.println("Enter first array elements: ");
    for (int i=0; i<array1.length; i++) {
      array1[i] = scan.nextInt();
    }

    // take input for array2 elements
    System.out.println("Enter second array elements: ");
    for (int i=0; i<array2.length; i++)
```

Q4 Write Java Program to find maximum,minimum values from Array.
Example:

Input:

```
num = {2,3,4,5,6,76,7,4}
```

Output:

```
minimum: 2
maximum: 76
```

In [ ]:
```java
import java.util.Arrays;
public class Exercise10 {

  static int max;
  static int min;

    public static void max_min(int my_array[]) {
        max = my_array[0];
        min = my_array[0];
        int len = my_array.length;
        for (int i = 1; i < len - 1; i = i + 2) {
            if (i + 1 > len) {
                if (my_array[i] > max) max = my_array[i];
                if (my_array[i] < min) min = my_array[i];
            }
            if (my_array[i] > my_array[i + 1]) {
                if (my_array[i] > max) max = my_array[i];
                if (my_array[i + 1] < min) min = my_array[i + 1];
            }
            if (my_array[i] < my_array[i + 1]) {
                if (my_array[i] < min) min = my_array[i];
                if (my_array[i + 1] > max) max = my_array[i + 1];
            }
        }
    }

    public static void main(String[] args) {
           int[] my_array = {2,3,4,5,6,76,7,4};
        max_min(my_array);
        System.out.println(" Original Array: "+Arrays.toString(my_array));
        System.out.println(" Maximum value for the above array = " + max);
        System.out.println(" Minimum value for the above array = " + min);
    }
}
```

Q5. Write the Java program to find duplicate values from Array.

Example

Input:

```
num = {3,4,5,6,7,6,54,45,4,3,7}
```

Output:

```
3 4 6 7
```

In [ ]:
```java
public class DuplicateElement {
    public static void main(String[] args) {

        int [] arr = new int [] {1, 2, 3, 4, 2, 7, 8, 8, 3};

        System.out.println("Duplicate elements in given array: ");
        for(int i = 0; i < arr.length; i++) {
            for(int j = i + 1; j < arr.length; j++) {
                if(arr[i] == arr[j])
                    System.out.println(arr[j]);
            }
        }
    }
}
```

Q6. Write the Java program to Print Triangle.

Output

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

In [ ]:
```java
import java.io.*;

public class GeeksForGeeks
{
    public static void printTriagle(int n)
    {

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

            for (int j=n-i; j>1; j--)
            {
                System.out.print(" ");
            }

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

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

            System.out.println();
        }
    }

    public static void main(String args[])
    {
        int n = 5;
        printTriagle(n);
    }
}
```

Q7. Write the Java program to Print Reverse Of Pyramid.
Output

```
1 2 3 4 5 6
 2 3 4 5 6
  3 4 5 6
   4 5 6
    5 6
     6
```

In [ ]:
```java
public class ReversePyramid
{
    public static void main(String[] args)
    {
        int rows = 6;

        for (int i = 1; i <= rows; i++)
        {
        for (int j = 1; j < i; j++)
            {
                System.out.print(" ");
            }
        for (int j = i; j <= rows; j++)
            {
                System.out.print(j+" ");
            }
            System.out.println();
        }



        }

}
```

Q8. Write the Java program to Print Numbers without re assigning.
Output.

```
 1
2  3
4  5  6
7  8  9  10
11  12  13  14  15
```

In [ ]:
```java
import java.io.*;

public class GeeksForGeeks
{
    public static void printNums(int n)
    {
        int i, j, num=1;

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

            for(j=0; j<=i; j++)
            {
                System.out.print(num+ " ");

                num = num + 1;
            }

            System.out.println();
        }
    }

    public static void main(String args[])
    {
        int n = 5;
        printNums(n);
    }
}
```

Thank You!

if you have any queries please feel free to contact on "Vikash@pentagonspace.in".

Vikash