CSA0976 Java Programming

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Assignment 3

1.

```java
import java.awt.Color;

import java.awt.Font;

import java.awt.Graphics;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;

import java.util.Random;

import javax.swing.JFrame;

import javax.swing.JPanel;

import javax.swing.Timer;


public class DynamicTextColor extends JPanel implements
ActionListener {
```

```java
private static final long serialVersionUID = 1L;

private final int DELAY = 50;

private final Timer timer;

private final Random random;

private Color color;

private Font font;

private String message;


public DynamicTextColor() {

setDoubleBuffered(true);

timer = new Timer(DELAY, this);

random = new Random();

font = new Font("Arial", Font.BOLD, 36);

message = "Dynamic Text Color";

timer.start();

}
```

```java
@Override

public void paintComponent(Graphics g) {

super.paintComponent(g);

g.setFont(font);

g.setColor(color);

g.drawString(message, 10, 50);

}


@Override

public void actionPerformed(ActionEvent e) {

color = new Color(random.nextInt(256),
random.nextInt(256), random.nextInt(256));

repaint();

}


public static void main(String[] args) {

JFrame frame = new JFrame("Dynamic Text Color");
```

```
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        frame.setSize(400, 100);

        DynamicTextColor panel = new DynamicTextColor();

        frame.add(panel);

        frame.setVisible(true);

    }

}
```

```
java -cp /tmp/VHiFCgDEdY DynamicTextColor
Exception in thread "main" java.awt.HeadlessException:
No X11 DISPLAY variable was set, but this program performed an
    operation which requires it.
at java.desktop/java.awt.GraphicsEnvironment.checkHeadless
    (GraphicsEnvironment.java:208)at java.desktop/java.awt.Window.<init
    >(Window.java:548)at java.desktop/java.awt.Frame.<init>(Frame.java
    :423)
at java.desktop/javax.swing.JFrame.<init>(JFrame.java:224)at
    DynamicTextColor.main(DynamicTextColor.java:44)
|
```

2

```
public class MultiplicationTableThread extends Thread {
    private int number;

    public MultiplicationTableThread(int number) {
        this.number = number;
```

```java
    }

    public void run() {
        System.out.println("Multiplication table for " + number);
        for (int i = 1; i <= 10; i++) {
            System.out.println(number + " x " + i + " = " + (number
* i));
            try {
                Thread.sleep(100);
            } catch (InterruptedException e) {
                e.printStackTrace();
            }
        }
    }

    public static void main(String[] args) {

        MultiplicationTableThread thread1 = new
MultiplicationTableThread(5);
        MultiplicationTableThread thread2 = new
MultiplicationTableThread(10);

        thread1.start();
```

```
        thread2.start();



        try {

            thread1.join();

            thread2.join();

        } catch (InterruptedException e) {

            e.printStackTrace();

        }

    }

}
```

```
 ▲ java -cp /tmp/VHiFCgDEdY MultiplicationTableThread
   Multiplication table for 5
   Multiplication table for 10
   10 x 1 = 10
   5 x 1 = 5
   10 x 2 = 20
   5 x 2 = 10
   10 x 3 = 30
   5 x 3 = 1510 x 4 = 40
   5 x 4 = 20
   10 x 5 = 50
   5 x 5 = 25
   10 x 6 = 60
   5 x 6 = 30
   10 x 7 = 70
 ▼ 5 x 7 = 35
```

3

import java.util.Scanner;

```java
public class Fibonacci
{
    public static void main(String[] args)
    {
        int n, a = 0, b = 0, c = 1;
        Scanner s = new Scanner(System.in);
        System.out.print("Enter value of n:");
        n = s.nextInt();
        System.out.print("Fibonacci Series:");
        for(int i = 1; i <= n; i++)
        {
            a = b;
            b = c;
            c = a + b;
            System.out.print(a+" ");
        }
    }
}
```

```
java -cp /tmp/Q6nrgMHi5Q Fibonacci
Enter value of n:12
Fibonacci Series:0 1 1 2 3 5 8 13 21 34 55 89 |
```

4

```java
public class Solution {

    public boolean isUgly(int n) {

        if (n <= 0) {

            return false;

        }


        while (n % 2 == 0) {

            n /= 2;

        }

        while (n % 3 == 0) {

            n /= 3;

        }
```

```
        while (n % 5 == 0) {

            n /= 5;

        }


        return n == 1;

    }

}
```

```
java -cp /tmp/Q6nrgMHi5Q GFG
150th ugly no. is 5832
```

5

class duplicate

{

// Function to remove duplicate elements

// This function returns new size of modified

// array.

static int removeDuplicates(int arr[], int n)

{

// Return, if array is empty

// or contains a single element

if (n==0 || n==1)

```
return n;

int[] temp = new int[n];

// Start traversing elements

int j = 0;

for (int i=0; i<n-1; i++)

// If current element is not equal

// to next element then store that

// current element

if (arr[i] != arr[i+1])

temp[j++] = arr[i];

// Store the last element as whether

// it is unique or repeated, it hasn't

// stored previously

temp[j++] = arr[n-1];

class duplicate

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if (arr[i] != arr[i+1])
temp[j++] = arr[i];
// Store the last element as whether
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// stored previously
temp[j++] = arr[n-1];
```

```
Microsoft Windows [Version 10.0.22621.1265]
(c) Microsoft Corporation. All rights reserved.

C:\Users\VARUN>cd OneDrive

C:\Users\VARUN\OneDrive>cd Desktop

C:\Users\VARUN\OneDrive\Desktop>cd java

C:\Users\VARUN\OneDrive\Desktop\java>javac duplicate.java

C:\Users\VARUN\OneDrive\Desktop\java>java duplicate
10 20 30 40 50
C:\Users\VARUN\OneDrive\Desktop\java>
```