PRACTICAL NO – 18

Write a java file handling program to count and display the number of palindromes present in a text file "myfile.txt". Example:

If the file "myfile.txt" contains the following lines,

My name is NITIN

Hello aaa and bbb word

How are You

ARORA is my friend

Output will be => 4

SOURCE CODE –

```
import java.io.*;
import java.util.*;
public class PalindromeCounter {
    public static void main(String[] args) throws IOException {
        int count = 0;
        FileReader fr = new FileReader("first.txt");
        BufferedReader br = new BufferedReader(fr);
        String line;
        System.out.println("Palindrome words are:");
        while ((line = br.readLine()) != null) {
            String[] words = line.split("\\s+");
            for (String word : words) {
                if (isPalindrome(word)) {
                    System.out.println(word);
                    count++;
                }
            }
        }
```


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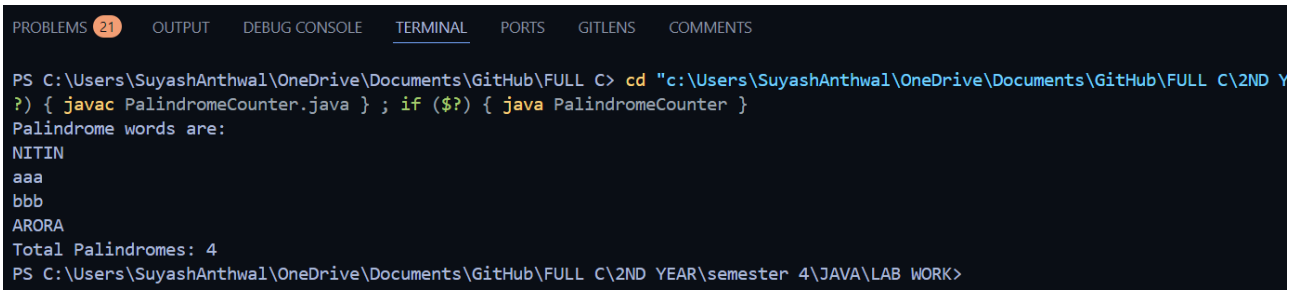
```
        br.close();
        System.out.println("Total Palindromes: " + count);
    }

    public static boolean isPalindrome(String word) {
        word = word.toLowerCase();
        int left = 0, right = word.length() - 1;

        while (left < right) {
            if (word.charAt(left) != word.charAt(right)) {
                return false;
            }
            left++;
            right--;
        }
        return true ;
    }
}
```

OUTPUT-



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PRACTICAL NO – 19

Write a program MultiThreads that creates two threads one thread with the name CSthread and the other thread named ITthread. Each thread should display its respective name and execute after a gap of 500 milliseconds. Each thread should also display a number indicating the number of times it got a chance to execute.

SOURCE CODE –

```
class CSThread extends Thread {
   public void run() {
      for (int i = 0; i < 5; i++) {
         System.out.println(getName() + " executed " + i + " times");
         try {
            Thread.sleep(500);
         } catch (InterruptedException e) {
            System.out.println(e);
         }
      }
   }
}

class ITThread extends Thread {
   public void run() {
      for (int i = 0; i < 5; i++) {
         System.out.println(getName() + " executed " + i + " times");
         try {
            Thread.sleep(500);
         } catch (InterruptedException e) {
            System.out.println(e);
         }
      }
```


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```
    }
}

public class thread {
    public static void main(String[] args) {
        // Create and start the threads
        CSThread t1 = new CSThread();
        ITThread t2 = new ITThread();

        t1.start();
        t2.start();
    }
}
```

OUTPUT-

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PRACTICAL NO – 20

Write a java program for to solve producer consumer problem in which a producer produce a value and consumer consume the value before producer generate the next value.

SOURCE CODE –

```
import java.util.* ;
class PC1 {
   LinkedList<Integer> list = new LinkedList<>();
   int capacity = 2;
   int value = 0;
   public void produce() throws Exception {
      while (true) {
         synchronized (this) {
            while (list.size() == capacity) {
               wait();
            }
            System.out.println("Producer is going to produce..... " + value);
            list.add(value++);
            notifyAll();
            Thread.sleep(500);
         }
      }
   }
   public void consume() throws Exception {
      while (true) {
         synchronized (this) {
            while (list.size() == 0) {
               wait();
            }
```


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```
                System.out.println("Consumer is going to consume ..... " + list.removeFirst());
                notifyAll();
                Thread.sleep(500);
            }
        }
    }
}
class pro extends Thread {
    PC1 p;
    public pro(PC1 p) {
        this.p = p;
    }
    public void run() {
        try {
            p.produce();
        } catch (Exception e) {
            System.out.println(e);
        }
    }
}
class con extends Thread {
    PC1 p;
    public con(PC1 p) {
        this.p = p;
    }
    public void run() {
        try {
            p.consume();
        } catch (Exception e) {
```


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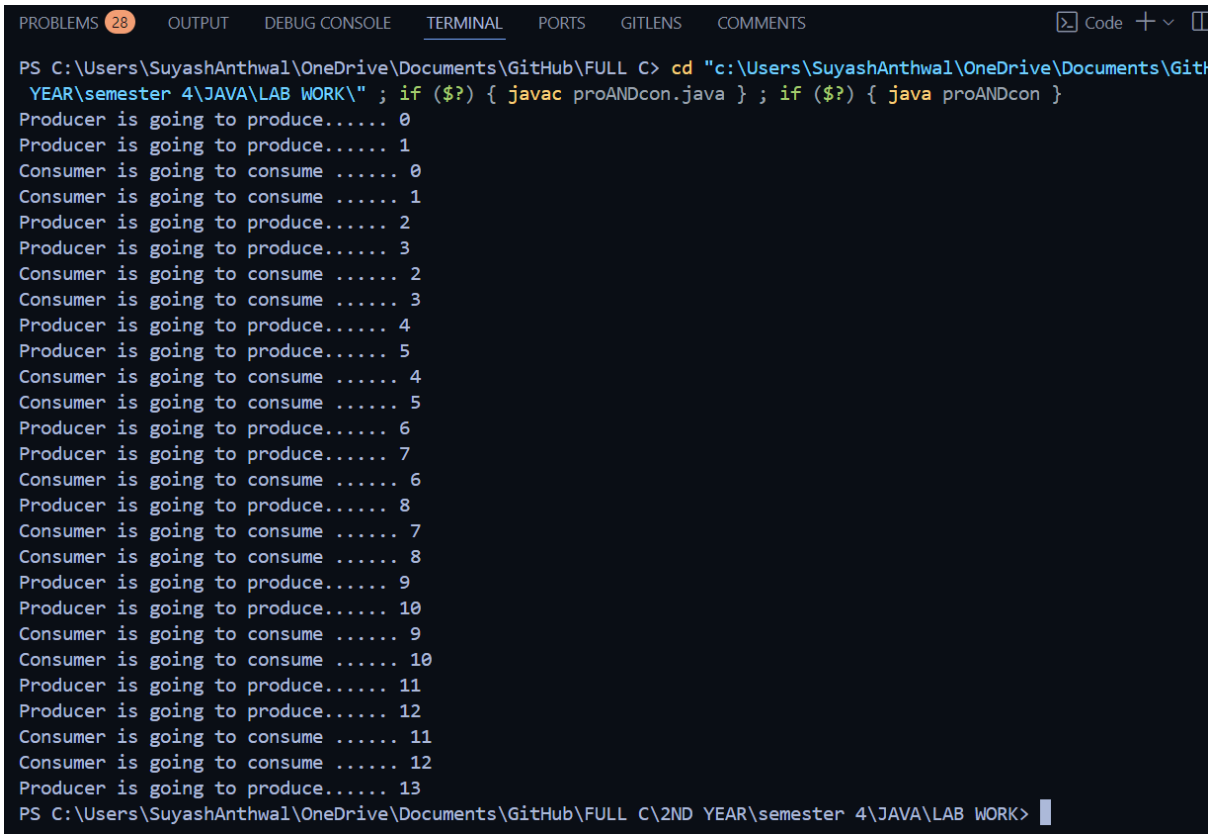
```
            System.out.println(e);
        }
    }
}
public class proANDcon {
    public static void main(String[] args) {
        PC1 p = new PC1();
        pro t1 = new pro(p);
        con t2 = new con(p);
        t1.start();
        t2.start();
    }
}
```

OUTPUT-



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