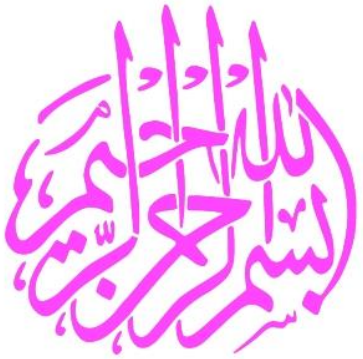

Online Lab Tasks

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First Question 5.14 --- Optimized GCD.

```java
package russi;
import java.util.*;
public class Optimal_GCD_Q_5_14 {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        //Enter number One
        System.out.print("Enter first number: ");
        int firstNumber = input.nextInt();
        //Enter number two
        System.out.print("Enter Second number: ");
        int secondNumber = input.nextInt();
        //GCD Optimized way
        int gcdDisplayed ;
        if ( firstNumber < secondNumber)
            gcdDisplayed = firstNumber;
        else
            gcdDisplayed = secondNumber;
        // Loop to encounter GCD
        while ( (firstNumber % gcdDisplayed  != 0) || (secondNumber % gcdDisplayed != 0)){
            gcdDisplayed--;
        }
        System.out.println(gcdDisplayed);
    }
}

```

Output:

```
"C:\Program Files\Java\jdk-15.0.2\bin\ja
Enter first number: 125
Enter Second number: 225
25

Process finished with exit code 0
```

Second Question 5.17: Display Pyramid

```java
package russi;
import java.util.*;
public class Display_Pyramid {
    public static void main(String[] args) {
        // Create a Scanner object
        Scanner input = new Scanner(System.in);
        // Ask user to enter integer to display Pyramid
        System.out.print("Enter the number of lines: ");
        int numberOfLines = input.nextInt();
        // Display pyramid*********************************
        for (int rows = 1; rows <= numberOfLines; rows++) {
            // Create spaces in each row
            for (int s = numberOfLines - rows; s >= 1; s--) {
                System.out.print("  ");
            }
            // Create decending numbers in each row
            for (int l = rows; l >= 2; l--){
                System.out.print(l + " ");
            }
            // Create ascending number in each row
            for (int r = 1; r <= rows; r++) {
                System.out.print(r + " ");
            }
            //*********************************
            // new Line
            System.out.println();
        }
    }
}

```

Output:

```
Enter the number of lines: 7
            1
          2 1 2
        3 2 1 2 3
      4 3 2 1 2 3 4
    5 4 3 2 1 2 3 4 5
  6 5 4 3 2 1 2 3 4 5 6
7 6 5 4 3 2 1 2 3 4 5 6 7
```

Third Question 5.41 --- Max number with occurrence.

```java
package russi;
import java.util.*;
public class OccuranceOfMaxNumbers_Q_5_41 {
    public static void main(String[] args) {

      Scanner input = new Scanner(System.in);
      // Input Frmo user
        System.out.print("Enter number: (0 to exit) ");
        int number = input.nextInt();
        // Occurance variable counter
        int occuranceOfNumber = 0;
        // Max number will be stored her
        int maximumNumber;
        // initially max has user input
        maximumNumber = number;
        // Calculations
        while (number != 0) {
            if (number > maximumNumber) {
                maximumNumber = number;
                occuranceOfNumber = 1;
            } else if (number == maximumNumber)
                occuranceOfNumber += 1;

            number = input.nextInt();
        }
        System.out.println("The largest number is: "+maximumNumber );
        System.out.println("The occurrence count of the largest number is: "+occuranceOfNumber);
    }
}
```

Output:

```
"C:\Program Files\Java\jdk-15.0.2\bin\java.exe" "-
Enter number: (0 to exit) 23 23 23 4 5 1 6 21 0
The largest number is: 23
The occurrence count of the largest number is: 3

Process finished with exit code 0
```

Fourth Question 5.49: Finding vowels & Consonants

```java
import java.util.*;
public class Vowels_Consonants {
    public static void main(String[] args) {
        Scanner input = new Scanner (System.in);
        // Input String
        System.out.print("Enter a string: ");
        String userString = input.nextLine();
        // Vowel Counter
        int vowelCounter = 0;
        // Consonants Counter
        int consonantCounter = 0;
        //String Length
        int stringLength = userString.length();
        // Vowels And Consonants finding
        for (int i = 0; i < stringLength; i++) {
            switch ( userString.charAt(i)){
                case 'a':
                case 'e':
                case 'i':
                case 'o':
                case 'u': vowelCounter += 1;break;
                default:
                    if (Character.isAlphabetic(userString.charAt(i))){
                        consonantCounter += 1;
                    }
            }
        }
        System.out.println("Vowels in String are: "+vowelCounter);
        System.out.println("Consonants in String are: "+consonantCounter);
    }
}
```

Output:

```
"C:\Program Files\Java\jdk-15.0.2\bin\j
Enter a string: Programming is fun
Vowels in String are: 5
Consonants in String are: 11
```