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Subject: Data Structures

Practical - 5

Aim: Program to GCD of two numbers using recursion also print number of recursive calls.

Program:

```
#include <stdio.h>
int gcd(int n1, int n2);
int count=0;
int main() {
   int num1 , num2;
    printf("Enter first natural numbers: ");
    scanf("%d", &num1);
    printf("Enter second natural numbers: ");
    scanf("%d", &num2);
    printf("GCD of %d and %d = %d", num1, num2, gcd(num1, num2));
    printf("\nNumber of recursive calls: %d", count);
   return 0;
}
int gcd(int n1, int n2){
   if(n2==0){
       return n1;
    }
   else{
        count++;
        return gcd(n2, n1%n2);
   }
}
```

Output:

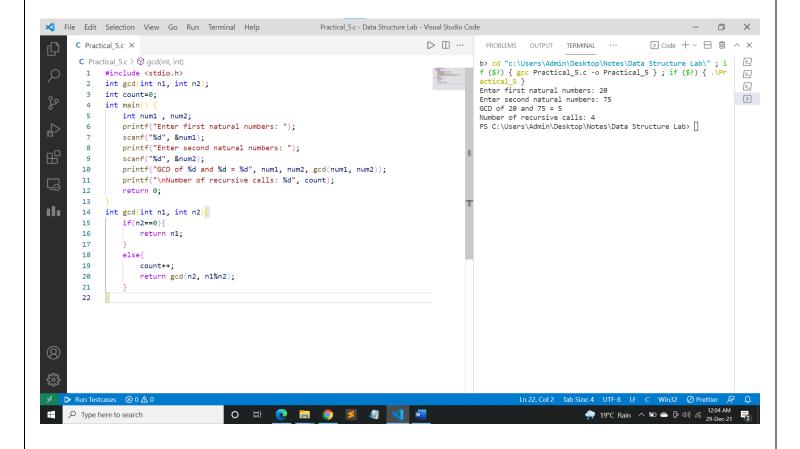
Enter first natural numbers: 20

Enter second natural numbers: 75

GCD of 20 and 75 = 5

Number of recursive calls: 4

Screenshot:



Conclusion: I have successfully completed practical 5.