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Subject: CSE 108	

1. Write a C program to find the greatest common divisor (gcd) of two numbers using Euclid's algorithm.

```
#include <stdio.h>
```

```
int gcd(int a, int b) {  
    while (b != 0) {  
        int temp = b;  
        b = a % b;  
        a = temp;  
    }  
    return a;  
}
```

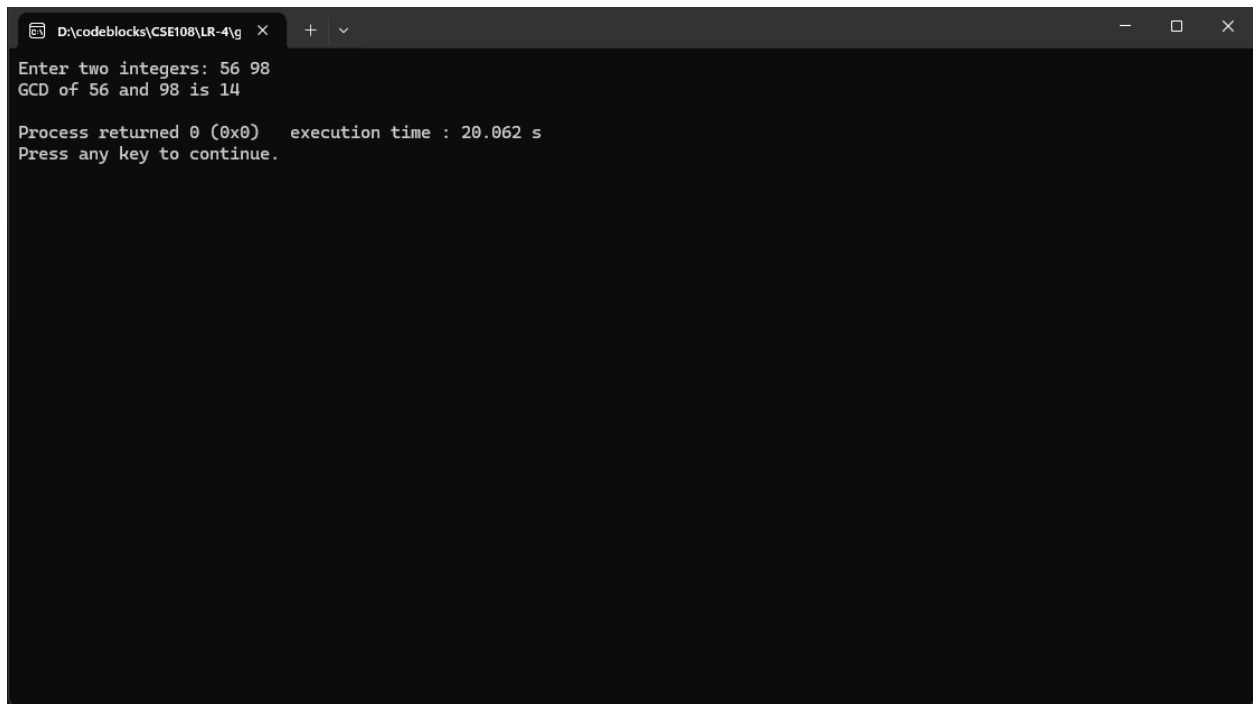
```
int main() {  
    int num1, num2;  
  
    printf("Enter two integers: ");  
    scanf("%d %d", &num1, &num2);
```

```
    int result = gcd(num1, num2);
```

```
    printf("GCD of %d and %d is %d\n", num1, num2, result);
```

```
    return 0;  
}
```

Output:

A screenshot of a Code::Blocks terminal window. The window has a title bar with the file path "D:\codeblocks\CSE108\LR-4\g" and standard window controls. The terminal output is as follows:

```
Enter two integers: 56 98
GCD of 56 and 98 is 14

Process returned 0 (0x0)   execution time : 20.062 s
Press any key to continue.
```

2 . Develop a C program to calculate the least common multiple (lcm) of two numbers using their gcd.

```
#include <stdio.h>
```

```
int main() {
```

```
    int num1,num2,i,a,b;
```

```
    printf("enter two number's : \n");
```

```
    scanf("%d %d",&num1,&num2);
```

```
    a=num1;
```

```
    b=num2;
```

```
    for(i=1;;i++){
```

```
        if(num1>num2){
```

```
            num1=num1-num2;
```

```
        }
```

```
    else if(num1<num2){
```

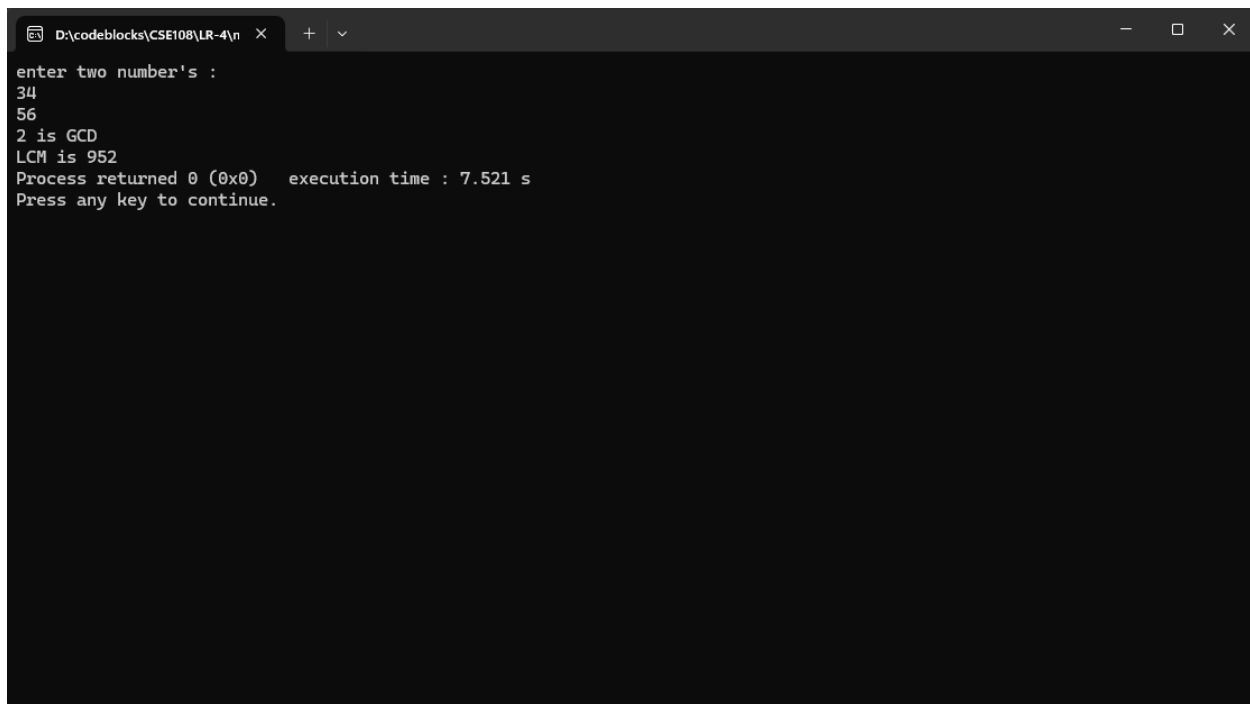
```
        num2-=num1;
```

```

    }else{
        printf("%d is GCD\n",num1);
        break;
    }
}
printf("LCM is %d",(a*b)/num1);
return 0;
}

```

Output:



```

D:\codeblocks\CSE108\LR-4\l... x + v
enter two number's :
34
56
2 is GCD
LCM is 952
Process returned 0 (0x0)   execution time : 7.521 s
Press any key to continue.

```

3 . Create a C program to check whether a given number is prime or not.

```
#include <stdio.h>
```

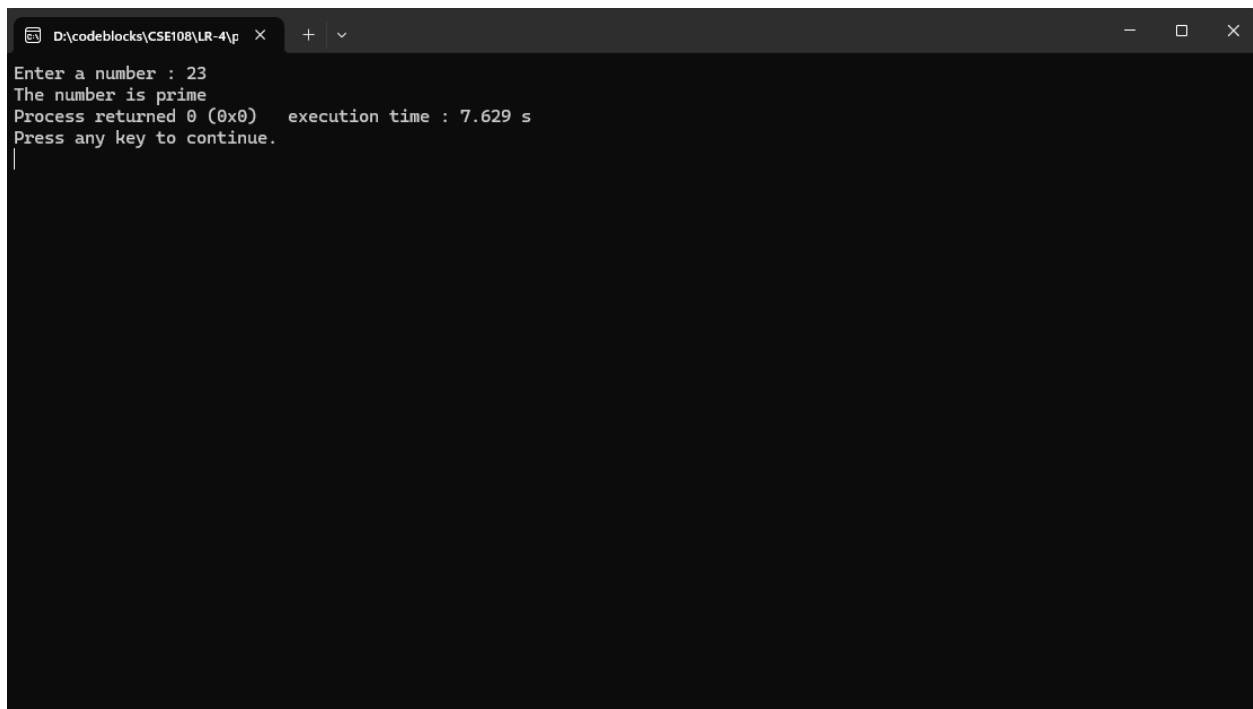
```
int main() {
```

```
    int i,num,k=1;
```

```
    printf("Enter a number : ");
```

```
scanf("%d",&num);
if (num%2!=0){
    for(i=k+2;i<=num/2;i++){
        if(num%i==0){
            k=1;
            break;
        }
        else{
            k=0;
        }
    }
    if(k==1){
        printf("The number is not prime");
    }else{
        printf("The number is prime");
    }
} else{
    if(num==2){
        printf("The number is prime");
    }else{
        printf("The number is not prime");
    }
}
return 0;
}
```

Output:



The image shows a screenshot of a Code::Blocks IDE terminal window. The window has a dark theme and a title bar with the file path "D:\codeblocks\CSE108\LR-4\p" and standard window controls. The terminal output displays the following text:

```
Enter a number : 23
The number is prime
Process returned 0 (0x0)   execution time : 7.629 s
Press any key to continue.
|
```

The vertical bar at the end of the prompt line indicates that the program is waiting for user input.