

lab 3

date:24/09/2025

// 27. PROGRAM TO CHECK WHETHER A NO IS PRIME OR NOT.

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

```
int main()
```

```
{
```

```
    int a, b, c = 0;
```

```
    printf("enter a number=");
```

```
    scanf("%d", &a);
```

```
    if (a == 0 || a == 1)
```

```
    {
```

```
        printf("not prime");
```

```
    }
```

```
    else if (a < 0)
```

```
    {
```

```
        printf("not defined for negative numbers");
```

```
    }
```

```
    else
```

```
    {
```

```
        for (b = 2; b < a; b++)
```

```
        {
```

```
            if (a % b == 0)
```

```
            {
```

```
                c = 1;
```

```
            }
```

```
        }
```

```

        if (c == 1)
        {
            printf("given number %d is not prime", a);
        }

        else

        {   printf("given number %d is prime", a);
            }
        }

    return 0;
}

```

The image shows a VS Code editor with a C program in a file named `27_prime_number.c`. The program prompts the user to enter a number and checks if it is prime. It handles three cases: numbers less than or equal to 1 (not prime), negative numbers (not defined), and numbers greater than 1 (checked for divisibility by numbers from 2 to $a-1$). If no divisor is found, it is prime.

```

1 // 27. PROGRAM TO CHECK WHETHER A NO. IS PRIME OR NOT.
2
3 #include <stdio.h>
4
5 int main()
6 {
7     int a, b, c = 0;
8     printf("enter a number-");
9     scanf("%d", &a);
10    if (a == 0 || a == 1)
11    {
12        printf("not prime");
13    }
14    else if (a < 0)
15    {
16        printf("not defined for negative numbers");
17    }
18    else
19    {
20
21        for (b = 2; b < a; b++)
22        {
23            if (a % b == 0)
24            {
25                c = 1;
26            }
27        }
28        if (c == 1)
29        {
30            printf("given number %d is not prime", a);
31        }
32        else
33        {
34            printf("given number %d is prime", a);
35        }
36    }
37    return 0;

```

The terminal window shows the execution of the program. It prompts for input, and the user enters 7, 4, and -6. The output correctly identifies 7 as prime, 4 as not prime, and -6 as not defined for negative numbers.

```

PS C:\Users\Sumit\Desktop\vscode\c> cd "C:\Users\Sumit\Desktop\vscode\c"
lg\ ; if ($?) { gcc 27_prime_number.c -o 27_prime_number } ; if ($?) { .
\27_prime_number }
enter a number-7
given number 7 is prime
PS C:\Users\Sumit\Desktop\vscode\c> cd "C:\Users\Sumit\Desktop\vscode\c"
lg\ ; if ($?) { gcc 27_prime_number.c -o 27_prime_number } ; if ($?) { .
\27_prime_number }
enter a number-4
given number 4 is not prime
PS C:\Users\Sumit\Desktop\vscode\c> cd "C:\Users\Sumit\Desktop\vscode\c"
lg\ ; if ($?) { gcc 27_prime_number.c -o 27_prime_number } ; if ($?) { .
\27_prime_number }
enter a number--6
not defined for negative numbers
PS C:\Users\Sumit\Desktop\vscode\c>

```