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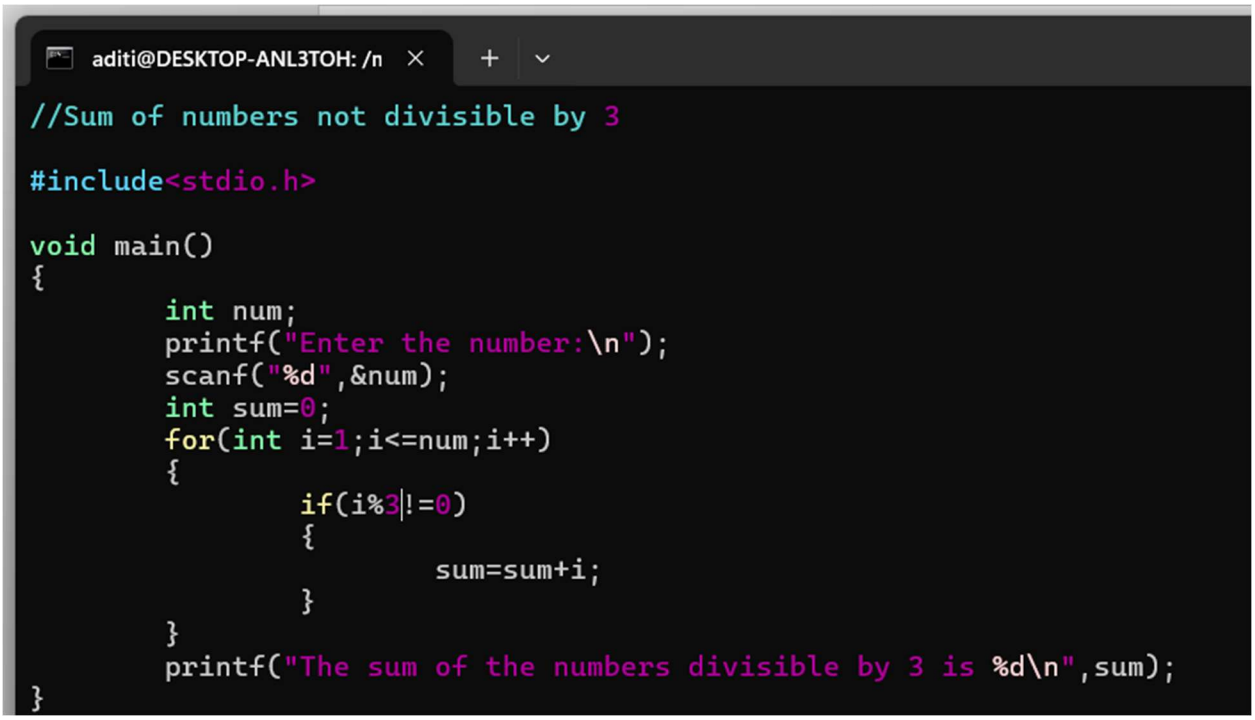
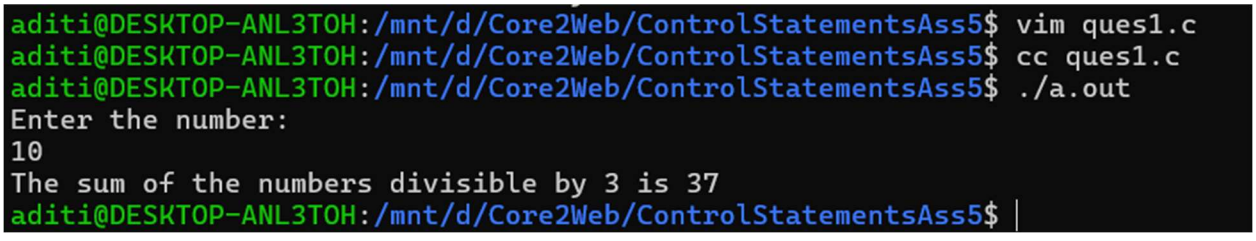
**Course: C, DSA and C++**

**Assignment 5: For Loop and While Loop**

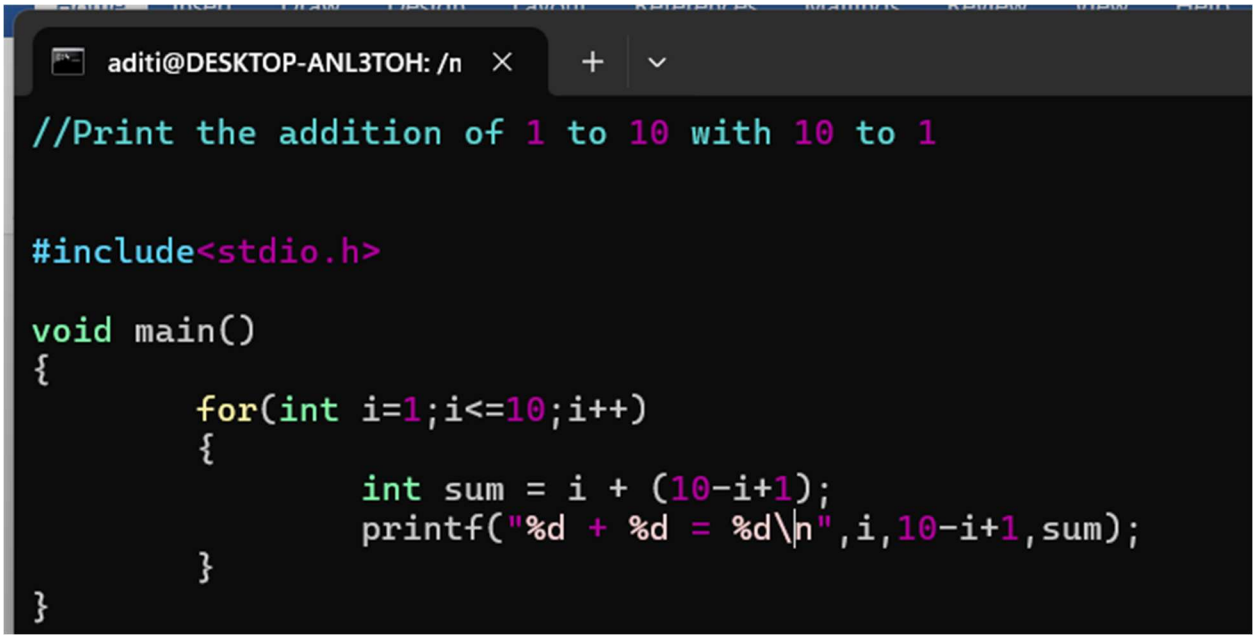
**Q.1. WAP to find the sum of the numbers that are not divisible by 3 up to a given number:**



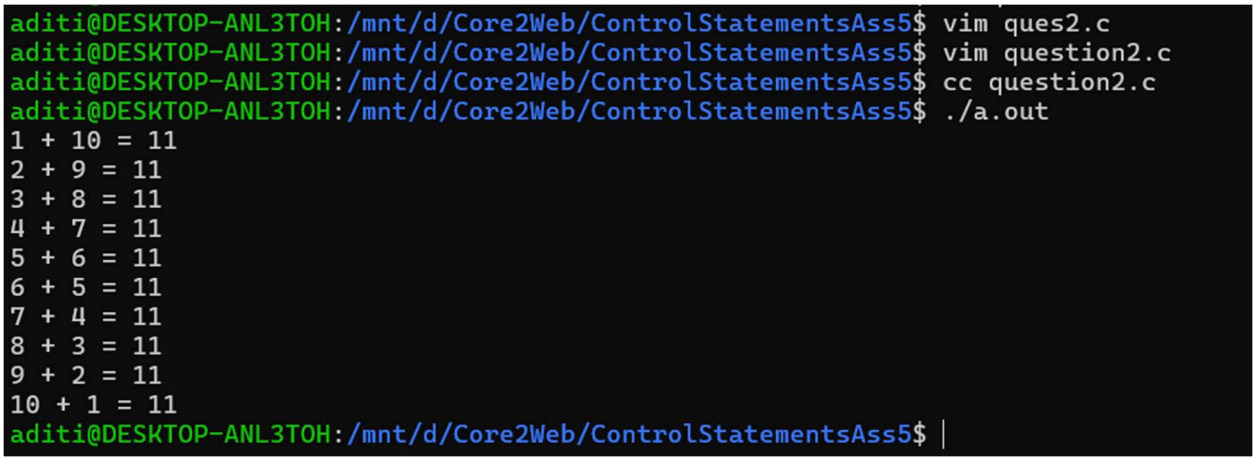

**Output:**



**Q.2. WAP to print the addition of 1 to 10 with 10 to 1:**




**Output:**



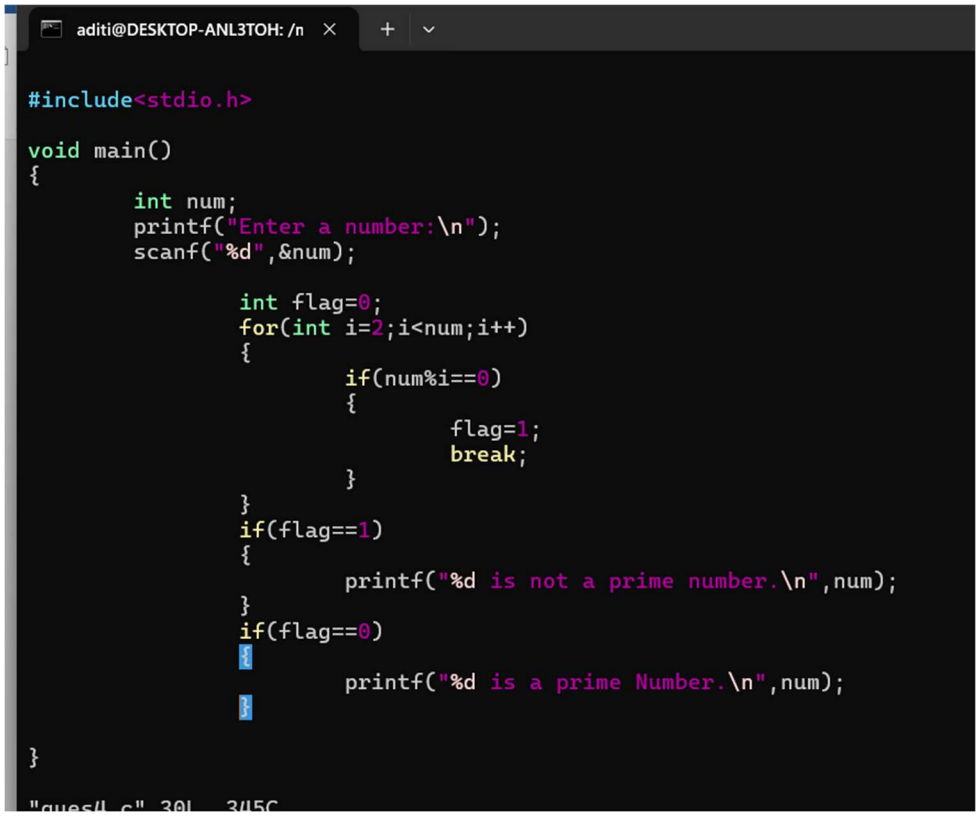
**Q.3. WAP to print the divisors and the count of no. of divisors of the entered no.:**

```c
//print divisors and count of the divisors

#include<stdio.h>

void main()
{
        int num;
        printf("Enter the number:\n");
        scanf("%d",&num);
        printf("The divisors of %d are:\n",num);
        int count=0;

        for(int i=1;i<=num;i++)
        {
                if(num%i==0)
                {
                        printf("%d\n",i);
                        count++;
                }
        }
        printf("There are total %d divisors of %d\n",count,num);
}
```

**Output:**

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ vim ques3.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ cc ques3.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the number:
42
The divisors of 42 are:
1
2
3
6
7
14
21
42
There are total 8 divisors of 42
```

## Q.4. WAP to print whether a number is prime or not:



```
aditi@DESKTOP-ANL3TOH: /n

#include<stdio.h>

void main()
{
        int num;
        printf("Enter a number:\n");
        scanf("%d",&num);

                int flag=0;
                for(int i=2;i<num;i++)
                {
                        if(num%i==0)
                        {
                                flag=1;
                                break;
                        }
                }
                if(flag==1)
                {
                        printf("%d is not a prime number.\n",num);
                }
                if(flag==0)
                {
                        printf("%d is a prime Number.\n",num);
                }

}

"ques4.c" 30L, 345C
```

## Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ vim ques4.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ cc ques4.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter a number:
5
5 is a prime Number.
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter a number:
32
32 is not a prime number.
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter a number:
71
71 is a prime Number.
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$
```

**Q.5. WAP to print all the even nos. in reverse order and odd nos. in the standard way and all within a range:**

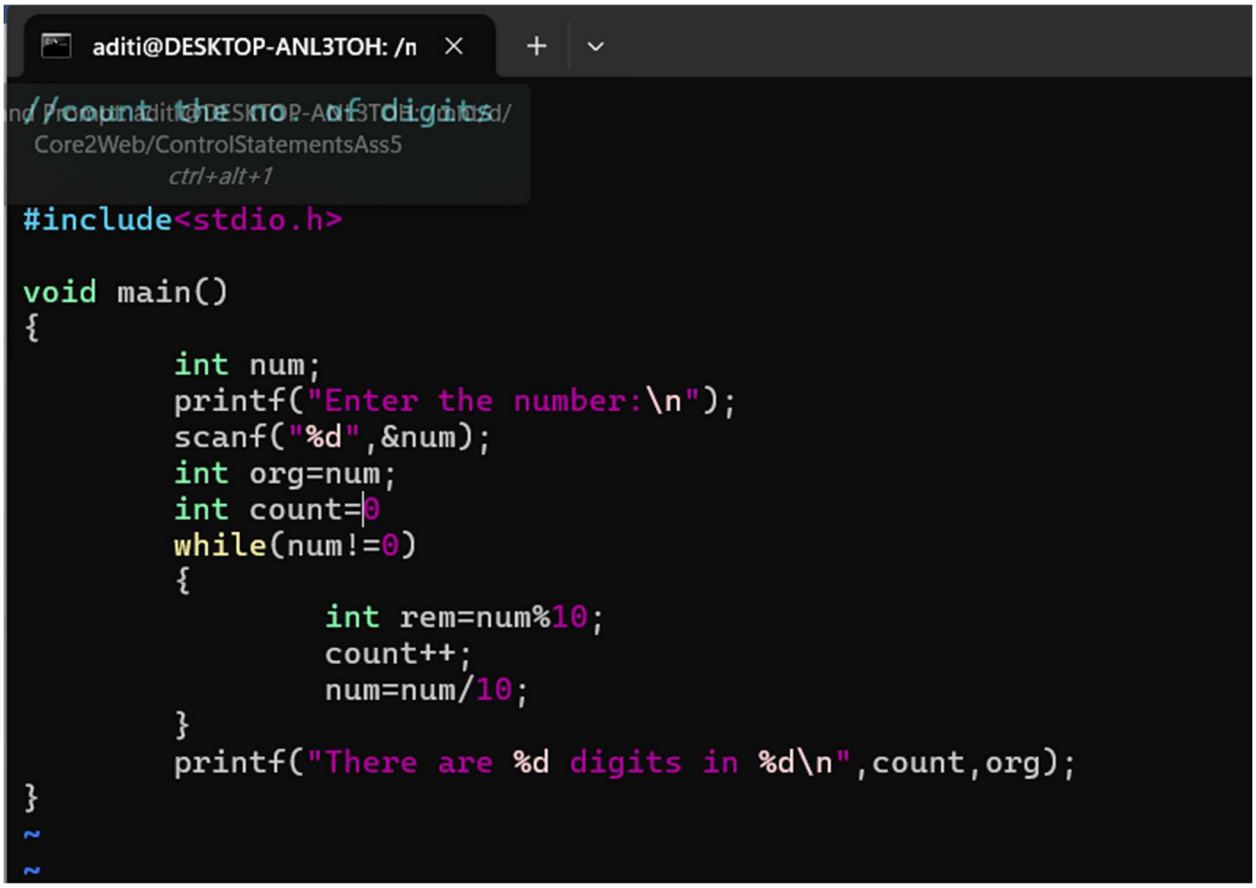
aditi@DESKTOP-ANL3TOH: /n

```c
//even in reverse and odd in standard way

#include<stdio.h>

void main()
{
        int start, end;
        printf("Enter the start and the end:\n");
        scanf("%d %d",&start,&end);
        printf("Even numbers in reverse order between %d and %d are:\n",start,end);
        for(int i=end;i>=start;i--)
        {
                if(i%2==0)
                {
                        printf("%d\n",i);
                }
        }
        printf("Odd numbers in standard order between %d and %d are:\n",start,end);
        for(int i=start;i<=end;i++)
        {
                if(i%2!=0)
                {
                printf("%d\n",i);
                }
        }
}
```

**Output:**

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ vim ques5.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ cc ques5.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the start and the end:
1 10
Even numbers in reverse order between 1 and 10 are:
10
8
6
4
2
Odd numbers in standard order between 1 and 10 are:
1
3
5
7
9
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$
```

**Q.6. WAP take an input no. from the user and count the no. of digits:**




**Output:**

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ vim ques6.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ cc ques6.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the number:
12345
There are 5 digits in 12345
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the number:
2
There are 1 digits in 2
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$
```

**Q.7. WAP that takes an input number and prints the sum of the digits:**

aditi@DESKTOP-ANL3TOH: /n

```c
//sum of digits

#include<stdio.h>

void main()
{
        int num,rem;
        int sum=0;
        printf("Enter the number:\n");
        scanf("%d",&num);
        int org=num;
        while(num!=0)
        {
                rem=num%10;
                sum+=rem;
                num=num/10;
        }
        printf("The sum of the digits of the number (%d) is %d\n",org,sum);
}
~
```

**Output:**

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ cc ques7.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the number:
123
The sum of the digits of the number (123) is 6
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the number:
526
The sum of the digits of the number (526) is 13
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$
```

## Q.8. WAP to take input from the user and print the product of the digits:

```c
//product of the digits

#include<stdio.h>

void  main()
{
        int num;
        printf("Enter the number:\n");
        scanf("%d",&num);
        int org=num;
        int pro=1;
        int rem;
        while(num!=0)
        {
                rem=num%10;
                pro=pro*rem;
                num=num/10;
        }
        printf("The product of the digits of the number %d is %d\n",org,pro);
}
```

## Output:

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ vim ques8.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ cc ques8.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the number:
123
The product of the digits of the number 123 is 6
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the number:
526
The product of the digits of the number 526 is 60
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$
```

**Q.9. WAP to take an input from the user and the print the number in reverse order:**

aditi@DESKTOP-ANL3TOH: /n

```c
//Number in reverse order

#include<stdio.h>

void main()
{
        int num;
        printf("Enter the number:\n");
        scanf("%d",&num);
        int org=num;
        int rem;
        int rev=0;
        while(num!=0)
        {
                rem=num%10;
                rev=(rev*10)+rem;
                num=num/10;
        }
        printf("The reversed number of the number %d is %d\n",org,rev);
}
```

**Output:**

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ vim ques8.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ vim ques9.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ cc ques9.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter the number:
123
The reversed number of the number 123 is 321
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$
```

**Q.10. WAP to take a number from the user and print the Fibonacci series up to that number:**

aditi@DESKTOP-ANL3TOH: /n

```c
//Fibonacci Series

#include<stdio.h>

void main()
{
        int num;
        printf("Enter a number upto which you want the fibonacci series:\n");
        scanf("%d",&num);
        int a=0;
        int b=1;
        printf("The fibonacci series upto %d is:\n",num);
        printf("%d\n%d\n",a,b);
        int sum=a+b;
        while(sum<=num)
        {
                printf("%d\n",sum);
                a=b;
                b=sum;
                sum=a+b;
        }
}
~
```

**Output:**

```
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ vim ques10.c
aditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ cc ques10.c
^[[Aaditi@DESKTOP-ANL3TOH:/mnt/d/Core2Web/ControlStatementsAss5$ ./a.out
Enter a number upto which you want the fibonacci series:
10
The fibonacci series upto 10 is:
0
1
1
2
3
5
8
```