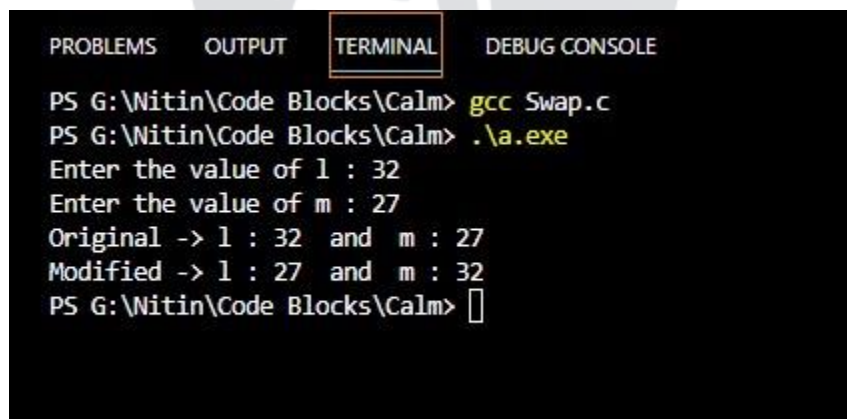


# CSB Lab-3

**Q1)** Write a program to swap values of two variables with and without using third variable.

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

int main()
{
    int l, m, n;
    printf("Enter the value of l : ");
    scanf("%d", &l);
    printf("Enter the value of m : ");
    scanf("%d", &m);
    printf("Original -> l : %d and m : %d\n", l, m);
    n = l;
    l = m;
    m = n;
    printf("Modified -> l : %d and m : %d", l, m);
}
```



The screenshot shows a terminal window with four tabs: PROBLEMS, OUTPUT, TERMINAL (which is active and highlighted with a red box), and DEBUG CONSOLE. The terminal text shows the user compiling a file named 'Swap.c' with 'gcc' and then running the resulting executable 'a.exe'. The program prompts for two integers, 32 and 27, and then displays the original and modified values, confirming the swap.

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

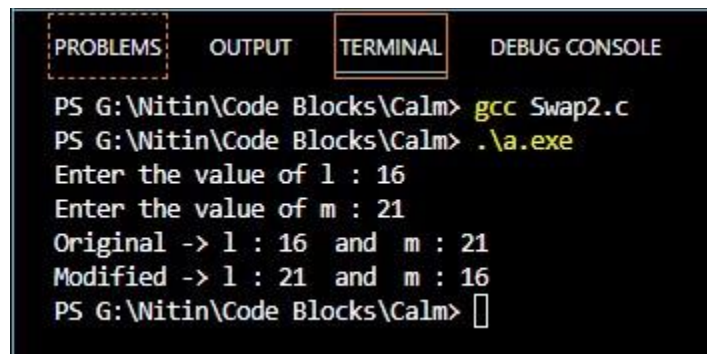
PS G:\Witin\Code Blocks\Calm> gcc Swap.c
PS G:\Witin\Code Blocks\Calm> .\a.exe
Enter the value of l : 32
Enter the value of m : 27
Original -> l : 32 and m : 27
Modified -> l : 27 and m : 32
PS G:\Witin\Code Blocks\Calm> 
```

```
#include<stdio.h>
#include<math.h>
int main()
{
    int l, m;
    printf("Enter the value of l : ");
    scanf("%d", &l);
    printf("Enter the value of m : ");
    scanf("%d", &m);
```

```

printf("Original -> l : %d and m : %d\n", l, m);
l = l + m;
m = l - m;
l = l - m;
printf("Modified -> l : %d and m : %d", l, m);
}

```



The screenshot shows a terminal window with tabs for PROBLEMS, OUTPUT, TERMINAL, and DEBUG CONSOLE. The terminal output is as follows:

```

PS G:\Nitin\Code Blocks\Calm> gcc Swap2.c
PS G:\Nitin\Code Blocks\Calm> .\a.exe
Enter the value of l : 16
Enter the value of m : 21
Original -> l : 16 and m : 21
Modified -> l : 21 and m : 16
PS G:\Nitin\Code Blocks\Calm> 

```

**Q2)** Write a program to find the largest of three numbers with and without ternary operators.

```

#include<stdio.h>

int main()
{
    int l, m, n, grt;
    printf("Enter first number: ");
    scanf("%d", &l);
    printf("Enter second number: ");
    scanf("%d", &m);
    printf("Enter third number: ");
    scanf("%d", &n);

    grt = (l>m) ? ((l>n) ? l : n) : ((m>n) ? m : n);
    printf("%d is the largest.", grt);
}

```

PROBLEMS

OUTPUT

TERMINAL

DEBUG CONSOLE

```
PS G:\Witin\Code Blocks\Calm> gcc Largest1.c
PS G:\Witin\Code Blocks\Calm> .\a.exe
Enter first number: 36
Enter second number: 21
Enter third number: 27
36 is the largest.
PS G:\Witin\Code Blocks\Calm> 
```

```
#include<stdio.h>

int main()
{
    int l, m, n, grt;
    printf("Enter first number: ");
    scanf("%d", &l);
    printf("Enter second number: ");
    scanf("%d", &m);
    printf("Enter third number: ");
    scanf("%d", &n);

    if (l>m){
        if (l>n)
        {grt = l;}
        else {grt = n;}
    }
    else{
        if (m>n)
        {grt = m;}
        else {grt = n;}
    }

    printf("%d is the largest.", grt);
}
```

```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
PS G:\Nitin\Code Blocks\Calm> gcc Largest2.c
PS G:\Nitin\Code Blocks\Calm> .\a.exe
Enter first number: 32
Enter second number: 72
Enter third number: 25
72 is the largest.
PS G:\Nitin\Code Blocks\Calm> 
```

**Q3)** Write a program to input name, marks of 5 subjects of a student and display the name of the student, the total marks scored, percentage scored and the class of result.

```
#include<stdio.h>
int main(){
    int sub1, sub2, sub3, sub4, sub5, total; float per;
    printf("Enter marks obtained in Astronomy: ");
    scanf("%d", &sub1);
    printf("Enter marks obtained in Quantum Physics: ");
    scanf("%d", &sub2);
    printf("Enter marks obtained in String Theory: ");
    scanf("%d", &sub3);
    printf("Enter marks obtained in Relativity: ");
    scanf("%d", &sub4);
    printf("Enter marks obtained in German: ");
    scanf("%d", &sub5);
    total = sub1+sub2+sub3+sub4+sub5;
    printf("Total Marks Obtained: %d\n", total);
    per = (total*100/500);
    printf("Percentage Scored: %f\n", per);
    if(per>=90) {printf("Grade : A");}
    else if(per>=80) {printf("Grade : B");}
    else if(per>=70) {printf("Grade : C");}
    else if(per>=50) {printf("Grade : D");}
    else if(per<50) {printf("Grade : F");}
    else {printf("Invalid Input.");}
}
```

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

PS G:\Witin\Code Blocks\Calm> gcc Marks.c
PS G:\Witin\Code Blocks\Calm> .\a.exe
Enter marks obtained in Astronomy: 97
Enter marks obtained in Quantum Physics: 84
Enter marks obtained in String Theory: 72
Enter marks obtained in Relativity: 91
Enter marks obtained in German: 81
Total Marks Obtained: 425
Percentage Scored: 85.000000
Grade : B
PS G:\Witin\Code Blocks\Calm> 
```

**Q4)** Write a program to read a natural number and check whether the number is

➤ Prime or not.

```
#include<stdio.h>

int main()
{
    int dig, con = 0;
    printf("Enter the number: ");
    scanf("%d", &dig);

    for(int i = 2; i<=dig/2; i++)
    {
        if (dig%i==0)
        {con = 1;}
    }
    if (con==0)
    {printf("%d is a Prime Number.", dig);}
    else {printf("%d is a Composite Number.", dig);}
}
```

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

PS G:\Nitin\Code Blocks\Calm> gcc Prime.c
PS G:\Nitin\Code Blocks\Calm> .\a.exe
Enter the number: 21
21 is a Composite Number.
PS G:\Nitin\Code Blocks\Calm> .\a.exe
Enter the number: 11
11 is a Prime Nummber.
PS G:\Nitin\Code Blocks\Calm> 
```

➤ Armstrong or not.

```
#include<stdio.h>
#include<math.h>
int main()
{
    int dig;
    printf("Enter the number: ");
    scanf("%d", &dig);
    int dummy = dig, count = 0;
    while (dummy!=0){
        dummy = dummy/10;
        count++;
    }
    int ditto = dig, new = 0;
    while (ditto!=0){
        new = new + pow(ditto%10,count);
        ditto = floor(ditto/10);
    }
    if (new == dig)
    {printf("%d is an Armstrong Number.", dig);}
    else {printf("%d is not an Armstrong Number.", dig);}
}
```

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

PS G:\Witin\Code Blocks\Calm> gcc Armstrong.c
PS G:\Witin\Code Blocks\Calm> .\a.exe
Enter the number: 371
371 is an Armstrong Nummber.
PS G:\Witin\Code Blocks\Calm> .\a.exe
Enter the number: 146
146 is not an Armstrong Number.
PS G:\Witin\Code Blocks\Calm> 
```

➤ Even or Odd.

```
#include<stdio.h>
#include<math.h>
int main()
{
    int dig;
    printf("Enter the number: ");
    scanf("%d", &dig);

    if (dig%2==0)
    {printf("%d is an Even Nummber.", dig);}
    else {printf("%d is an Odd Number.", dig);}
}
```

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

PS G:\Witin\Code Blocks\Calm> gcc Even.c
PS G:\Witin\Code Blocks\Calm> .\a.exe
Enter the number: 16
16 is an Even Nummber.
PS G:\Witin\Code Blocks\Calm> .\a.exe
Enter the number: 27
27 is an Odd Number.
PS G:\Witin\Code Blocks\Calm> 
```