CSB Lab-3

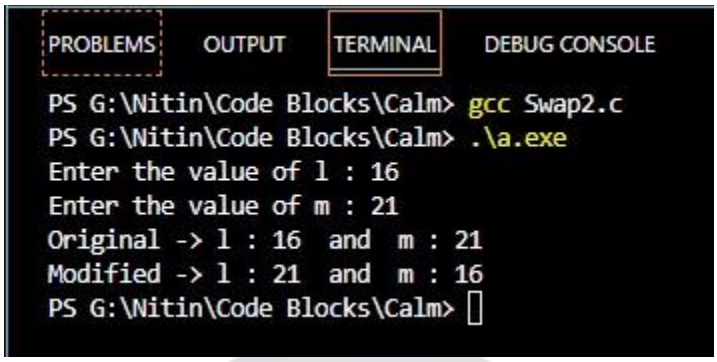
Q1) Write a program to swap values of two variables with and without using third variable.

```c
#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);
}
```

```
PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE
PS G:\Nitin\Code Blocks\Calm> gcc Swap.c
PS G:\Nitin\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:\Nitin\Code Blocks\Calm>
```

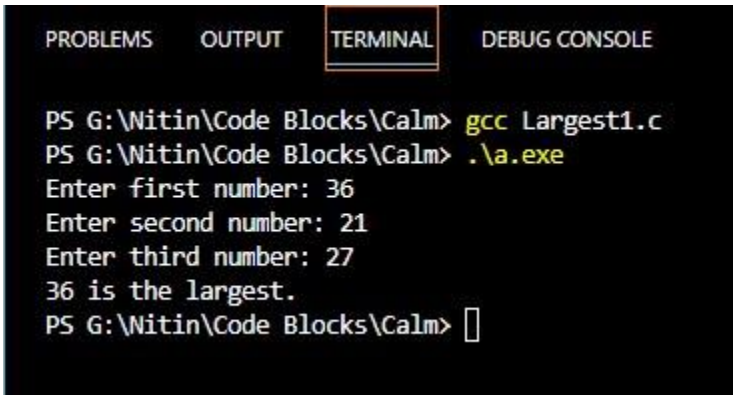
```c
#include<stdio.h>
#include<math.h>
int main()
{
    int l, m;
    printf("Enter the value of l : ");
    scanf("%d", &l);
    printf("Enter the value of m : ");
    scanf("%d", &m);
```

```
    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);
}
```



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);
}
```

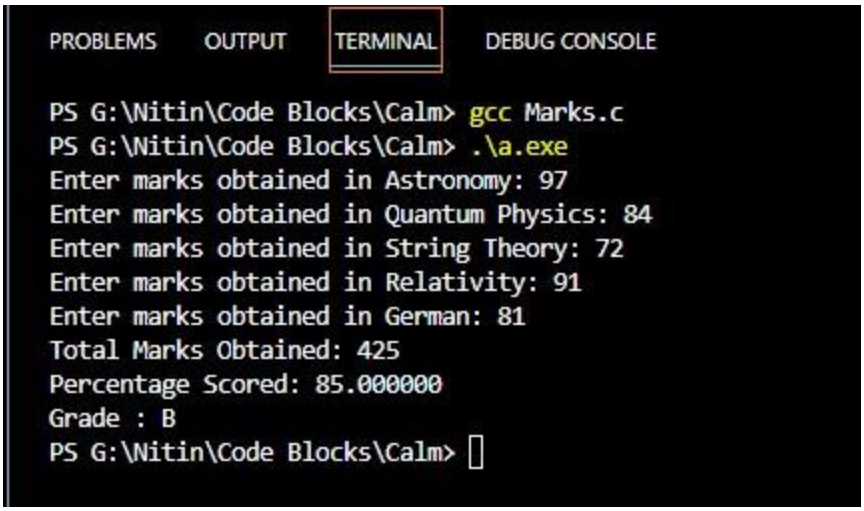



```c
#include<stdio.h>

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.

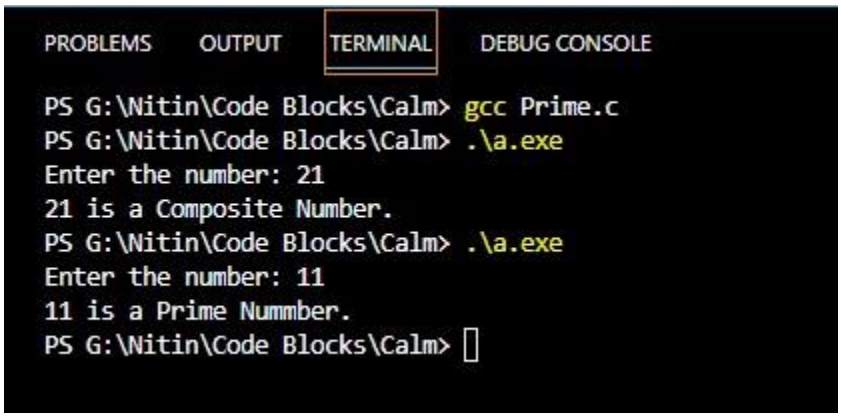
```c
#include<stdio.h>
int main(){
    int sub1, sub2, sub3, sub4, sub5, total; float per;
    printf("Enter marks obtained in Astronomy: ");
    scanf("%d", &sub1);
    printf("Enter marks obtained in Quantum Physics: ");
    scanf("%d", &sub2);
    printf("Enter marks obtained in String Theory: ");
    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.");}
}
```



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

- Prime or not.

```c
#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);}
}
```



- Armstrong or not.

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

- Even or Odd.

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