CSB Lab-4

Q1) Write a program to compute grade of students using if else ladder.

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

    if(marks>=90 && marks<=100) {printf("Grade : A+");}
    else if(marks>=80 && marks<90) {printf("Grade : A");}
    else if(marks>=70 && marks<80) {printf("Grade : B+");}
    else if(marks>=60 && marks<70) {printf("Grade : B");}
    else if(marks>=50 && marks<60) {printf("Grade : C");}
    else if(marks<50) {printf("Grade : F");}
    else {printf("Invalid Input.");}
}
```

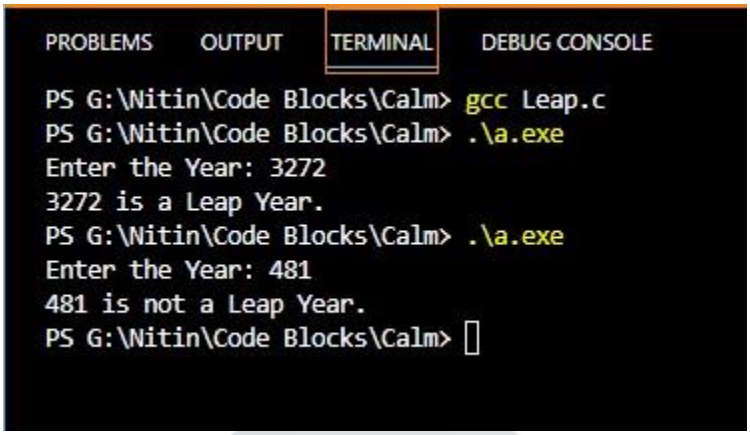
```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE

PS G:\Nitin\Code Blocks\Calm> gcc Grade.c
PS G:\Nitin\Code Blocks\Calm> .\a.exe
Enter the marks obtained: 97
Grade : A+
PS G:\Nitin\Code Blocks\Calm> .\a.exe
Enter the marks obtained: 63
Grade : B
PS G:\Nitin\Code Blocks\Calm>
```

Q2) Write a program to check whether the entered year is leap year or not.

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

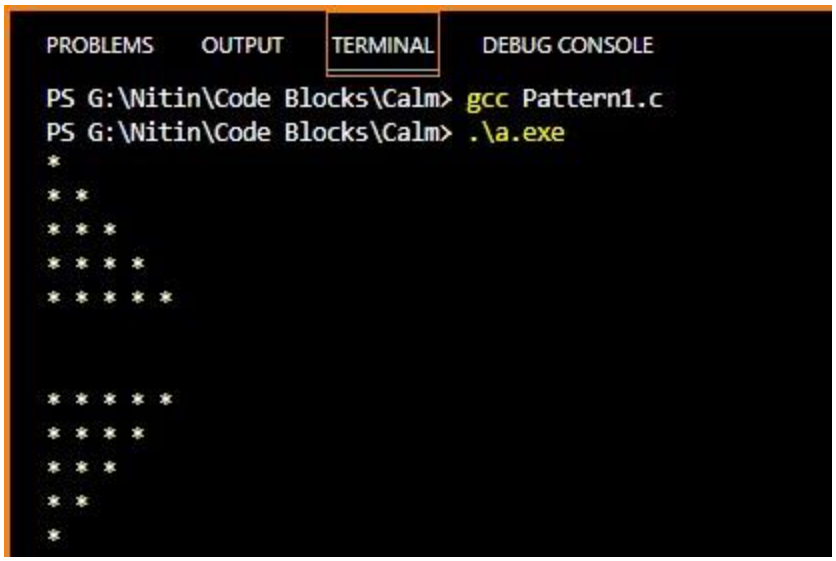
```
    if (year%4==0)
    {printf("%d is a Leap Year.", year);}
    else {printf("%d is not a Leap Year.", year);}
}
```



Q3) Write a program to display the following patterns.

```
#include<stdio.h>

int main()
{
    for (int i = 1; i<6; i++)
    {
        for (int j = 1; j<i+1; j++)
        {printf("* ");}
        printf("\n");
    }
    printf("\n\n");
    for (int i = 1; i<6; i++)
    {
        for (int j = 6-i; j>0; j--)
        {printf("* ");}
        printf("\n");
    }
}
```




```c
#include<stdio.h>
int main(){
    for (int i = 1; i<6; i++){
        for (int j = 1; j<i; j++)
        {printf(" ");}
        for (int k = 2*(6-i)-1; k>0; k--)
        {printf("*");}
        printf("\n");
    }
    printf("\n\n");
    for (int i = 1; i<6; i++){
        for (int j = 6-i; j>1; j--)
        {printf(" ");}
        for (int k = 1; k<2*i; k++)
        {printf("*");}
        printf("\n");
    }
}
```


```c
#include<stdio.h>
int main()
{
    for (int i = 1; i<6; i++){
        for (int j = 1; j<i+1; j++)
        {printf("%d ", i);}
        printf("\n");}
    printf("\n\n");
    for (int i = 1; i<7; i++){
        for (int j = 1; j<i; j++)
        {printf(" ");}
        int o = 1;
        for (int k = 7-i; k>0; k--){
            printf("%c ", 64+o);
            o++;}
        printf("\n");}
}
```

```
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE
PS G:\Nitin\Code Blocks\Calm> gcc Pattern3.c
PS G:\Nitin\Code Blocks\Calm> .\a.exe
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5


A B C D E F
 A B C D E
  A B C D
   A B C
    A B
     A
```

```c
#include<stdio.h>
int main()
{
    for (int i = 1; i<4; i++)
    {
        for(int j = 2*i-1; j>0; j--)
        {printf("%d", 2*i-j);}
        printf("\n");
    }
    for (int i = 2; i>0; i--)
    {
        for(int j = 2*i-1; j>0; j--)
        {printf("%d", 2*i-j);}
        printf("\n");
    }
}
```

```
PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE
PS G:\Nitin\Code Blocks\Calm> gcc Pattern4.c
PS G:\Nitin\Code Blocks\Calm> .\a.exe
1
123
12345
123
1
```

```c
#include<stdio.h>
int main(){
    for (int i = 1; i<5; i++){
        for(int j = 5-i; j>0; j--)
        {printf("*");}
        for(int k = 2*i-3; k>0; k--)
        {printf(" ");}
        for(int j = 5-i; j>0; j--)
        {printf("*");}
        printf("\n");}

    printf("\n\n******\n");
    for (int i = 1; i<5; i++){
        for (int j = 5-i; j>0; j--)
        {printf(" ");}
        printf("*\n");}
    printf("******");
}
```