2021

Name:	SRN:	Section:
	Date:	Week Number:

1	Write a program to calculate the grade of the student according to the specified marks.
	Grade A:Marks(>85 and <=100)
	Grade B:Marks(>60 and <=85)
	Grade C:Marks(>40 and <=60)
	Grade D:Marks(>30 and <=40)
	Fail: Marks(<30)
	Sample Input:
	Enter your marks:60
	Sample Output:
	You got grade C

```
Program:
#include<stdio.h>
int main(){
    int a;
    char grade;

    printf("Enter your Marks:");
    scanf("%d",&a);
    if (a>85&&a<=100)
    {
        grade='A';
    } else if (a>60&&a<=85)
    {
        grade='B';
    }
    else if (a>40&&a<=60)
    {
        grade='C';
```

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| | ```
    }
    else if (a>=30&&a<=40)
    {
       grade='D';
    }else if (a<30)
    {
       grade='F';
    }
    else{
       printf("INVALID MARKS TRY AGAIN\n");
       return main();
    }
    printf("You got grade %c",grade);
    return 0;
}
``` |
| | **Output Screenshot:**

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh.exe
Enter your Marks:65
You got grade B
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> |
| **2** | **Write a Program to convert all characters in a given line from lower case to upper case.**

Sample Input:

Enter characters to convert case

I am student of 2nd Semester!

Sample Output:

I AM STUDENT OF 2ND SEMESTER! |

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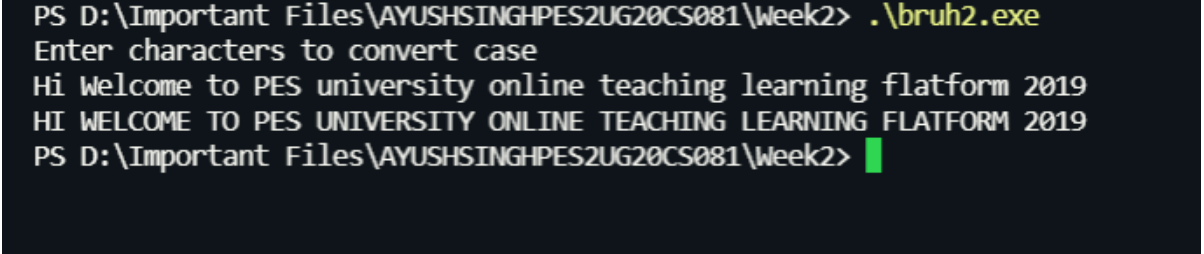Program:
#include<stdio.h>

//prototyping
int upper(char str[]);
int main(){

    char sen[100];
    printf("Enter characters to convert case\n");
    //fgets(sen,100,stdin);
    scanf("%[^\n]s%",sen);
    upper(sen);
    return 0;

}

int upper(char str[]){
    int count=0;
    //"\0" is the ascii value NUL
    //ascii A=65 Z=90
    //91 to 96 symbols
    //a=97 to z=122
    while(str[count]!='\0'){

        if (str[count]>='a' && str[count]<='z'){
            str[count]-=32;
        }
        count++;
    }
    printf("%s",str);
    return 0;
}
```

Output Screenshot:

```
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh2.exe
Enter characters to convert case
Hi Welcome to PES university online teaching learning flatform 2019
HI WELCOME TO PES UNIVERSITY ONLINE TEACHING LEARNING FLATFORM 2019
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2>
```

3	**Write a C program using bitwise operators for the following:** i) check whether specified bit is set or not ii) set the specified bit and print the result iii) clear the specified bit and print the result **Sample Input/Output:** Enter the number which you want check 25 Input number is 25 Enter the bit position, starts from zero 2 bit is not set Enter the bit position, which you want to set 4 set : 16 The number after set is 25 Enter the bit position, which bit you want to clear 3 set : 0 The number after clear is 17

```c
Program:
#include<stdio.h>
int main(){
    int a,n;
    printf("Enter the number which you want check:");
    scanf("%d",&a);
    printf("Input number is :%d\n\n\n",a);


    printf("Enter the bit position,from 0:");
    scanf("%d",&n);
    if(a==(a|1<<n)){
        printf("Bit is set:\n\n\n");
    }else{
        printf("Bit is not set:\n\n\n");
    }
```

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```
    printf("Enter the bit position,the bit u want to set:");
    scanf("%d",&n);
    printf("SET:%d\n",1<<n);
    a=(a|1<<n);
    printf("The number after SET:%d\n\n\n",a);


    printf("Enter the bit position, the bit to be cleared:");
    scanf("%d",&n);
    if(a==(a|1<<n)){
       a=a-(1<<n);
    }
    printf("Number after clear: %d",a);
    return 0;

}
```

Output Screenshot:

```
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh3.exe
Enter the number which you want check:25
Input number is :25


Enter the bit position,from 0:2
Bit is not set:


Enter the bit position,the bit u want to set:4
SET:16
The number after SET:25


Enter the bit position, the bit to be cleared:3
Number after clear 17
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2>
```

4	**a)Write a program to generate a multiplication table using for loop**
	
	b)Write a program to print the following pattern
	
	                          *
	
	                        * *
	
	                       * * *
	
	                     * * * *
	
	                    * * * * *

	Program:
	`#include<stdio.h>`
	`int pyramid(int a);`
	`int multable(int a);`
	
	`int main(){`
	   `int a;`
	   `printf("ENTER A NUMBER:");`
	   `scanf("%d",&a);`

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```
    pyramid(a);
    printf("\n\n");
    multable(a);

    return 0;
}
int pyramid(int a){
    int i,j;
    for ( i = 1; i <= a; i++)
    {
        for ( j = 1; j <= i; j++)
        {
            printf("*");
        }
        printf("\n");

    }
    return 0;
}
int multable(int a){
    int i;
    for( i = 1; i <= 10; i++)
    {
        printf("%d\n",a*i);
    }
    return 0;
}
```

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Output Screenshot:

```
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh4.exe
ENTER A NUMBER:10
*
**
***
****
*****
******
*******
********
*********
**********


10
20
30
40
50
60
70
80
90
100
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2>
```

5	**Write a program to implement a Simple Calculator using switch Statement**
	Sample input:
	Enter an operator (+, -, *,): +
	Enter two operands: 3 4
	Sample Output:
	3.0 + 4.0 = 7.0
	Sample input:
	Enter an operator (+, -, *,): -

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Enter two operands: 7 6

Sample Output:

7.0 - 6.0 = 1.0

```c
Program:
#include<stdio.h>

int main(){
    float a,b;
    char op;

    printf("Enter ur expression(a op b):");
    scanf("%f %c %f",&a,&op,&b);

    switch (op)
    {
    case '+':
        printf("%2.1f %c %2.1f = %2.1f\n",a,op,b,a+b);
        break;
    case '-':
        printf("%2.1f %c %2.1f = %2.1f\n",a,op,b,a-b);
        break;
    case '*':
        printf("%2.1f %c %2.1f = %2.1f\n",a,op,b,a*b);
        break;
    case '/':
        printf("%2.1f %c %2.1f = %2.1f\n",a,op,b,a/b);
        break;

    default:
        printf("Wrong operator:\n");
        return 0;
        break;
    }
    return 0;

}
```

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Output Screenshot:

```
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh5.exe
Enter ur expression(a op b):1 + 2
1.0 + 2.0 = 3.0
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh5.exe
Enter ur expression(a op b):1 / 2
1.0 / 2.0 = 0.5
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> 1 * 2
2
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh5.exe
Enter ur expression(a op b):1 * 2
1.0 * 2.0 = 2.0
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh5.exe
Enter ur expression(a op b):1 - 2
1.0 - 2.0 = -1.0
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2>
```

---

6   **Write a program to validate a given date and find the next date**

Sample input:

Enter the date 12

Enter the month 12

Enter the year 2000

Sample Output:

Date is valid & next date is: 13/12/2000

Sample input:

Enter the date 1

Enter the month 13

Enter the year 2000

Sample Output:

Month is invalid

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Program:
```c
#include <stdio.h>

int nextday(int day,int mon,int year,int lis[12]);
int main()
{
    int m[12] = {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31};
    int day, month, year;

    printf("Enter the day: ");
    scanf("%d", &day);
    printf("Enter the month: ");
    scanf("%d", &month);
    printf("Enter the year:");
    scanf("%d", &year);

    // leap year change feb to 29
    if ( year > 0 &&
        year % 4 == 0 &&
        year % 400 == 0)
    {
        m[1] = 29;
    }

    //limits for date
    if ((year >= 0) &&
    (month >= 1 && month <= 12) &&
    (day >= 1 && day <= m[month-1]))
    {
        printf("Date is Valid.\n");
    }
    else
    {
        printf("Date is Invalid\n");
    }
    nextday(day,month,year,m);
    return 0;
}
int nextday(int day,int mon,int year,int lis[12]){
```

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```c
    int newday,newm,newyear;
    if (day<lis[mon-1]){
        newday=day+1;
        newm=mon;
        newyear=year;
    }else{
        newday=1;
        newm=mon+1;
        if(newm<13){
            newyear=year;
        }else{
            newyear=year+1;
            newm=1;
        }
    }
    printf("NEXT DAY IS:%d %d %d",newday,newm,newyear);
    return 0;
}
```

Output Screenshot:

```
PROBLEMS  4    OUTPUT    TERMINAL    DEBUG CONSOLE                    ⊵ Code  + ∨

PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh6.exe
Enter the day: 31 12 2000
Enter the month: Enter the year:Date is Valid.
NEXT DAY IS:1 1 2001
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2> .\bruh6.exe
Enter the day: 30 2 2000
Enter the month: Enter the year:Date is Invalid
PS D:\Important Files\AYUSHSINGHPES2UG20CS081\Week2>
```

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