National University of Computer and Emerging Sciences, Lahore Campus

	Lab No 3			
	Course Name:	Programming Fundamentals	Course Code:	CS 188
	Program:	BS(SE)	Semester:	Fall 2020
	Duration:	2.5 hours	Total Points:	20 + 30 + 50
	Lab Date:	Saturday, October 10, 2020	Weight	5%
	Section:	SE-1A and SE-1B	Page(s):	

Instruction/Notes:	Cheating during the lab will result in negative marks

Topics Covered: Computational problem solving and writing programs using C++

Main Tasks involve planning and writing a C++ program to solve a given problem

You might use any IDE available at your computer or use one of the online IDE available at http://cpp.sh/, https://www.codechef.com/ide, https://ideone.com/, https://www.onlinegdb.com/

Problem No 1:

Write and run a program that reads a six-digit integer and prints the sum of its six digits. Make sure that the number has to be a six digit number i.e. the numbers are in the range (100000 to 999999).

    Sample Input: 153426

    Sample output: 21

In this problem you are allowed to use only two integer type variables named **sum** and **number**.

Problem No 2:

Write a program that takes coordinates of a point **P** in 2D space and that of left-top and Right-bottom corner of a rectangle region. The program should be able to tell whether P lies inside the Rectangle or Not. Please remember that each point in 2D space has two coordinates (x, y)

        Sample Input 1:

            P(1, 1)   **LEFT-TOP (0, 0)** **Right-Bottom (2, 2)**

    Output 1: P lies inside the region

        Sample Input 2:

            P(1, 4)   **LEFT-TOP (0, 0)** **Right-Bottom (2, 2)**

    Output 2: P lies outside the region

Problem No 3:

Use the following three functions to write any number between 1 and 9999 in English

```
void Show_Units(int D){
        if(D == 1)
                cout<<"One"
        if(D == 2)
                cout<<"Two"
        if(D == 3)
                cout<<"Three"
        if(D == 4)
                cout<<"Four"
        if(D == 5)
                cout<<"Five"
        if(D == 6)
                cout<<"Six"
        if(D == 7)
                cout<<"Seven"
        if(D == 8)
                cout<<"Eight"
        if(D == 9)
                cout<<"Nine"
        return;
}
```

```
void Show_Teen(int D){
        if(D == 10)
                cout<<"Ten"
        if(D == 11)
                cout<<"Eleven"
        if(D == 12)
                cout<<"Twelve"
        if(D == 13)
                cout<<"Thirteen"
        if(D == 14)
                cout<<"Fourteen"
        if(D == 15)
                cout<<"Fifteen"
        if(D == 16)
                cout<<"Sixteen"
        if(D == 17)
                cout<<"Seventeen"
        if(D == 18)
                cout<<"Eighteen"
        if(D == 19)
                cout<<"Nineteen"
        return;
}
```

```
void Show_Tens(int D){
        if(D == 2)
                cout<<"Twenty"
        if(D == 3)
                cout<<"Thirty"
        if(D == 4)
                cout<<"Forty"
        if(D == 5)
                cout<<"Fifty"
        if(D == 6)
                cout<<"Sixty"
        if(D == 7)
                cout<<"Seventy"
        if(D == 8)
                cout<<"Eighty"
        if(D == 9)
                cout<<"Ninety"
        return;
}
```

Sample input	Sample output
7	Seven
10	Ten
16	Sixteen
20	Twenty
29	Twenty Nine
98	Ninety Eight
167	One Hundred Sixty Seven
980	Nine Hundred Eighty
9012	Nine Thousand Twelve
1927	One Thousand Twenty Seven

You might write more functions if needed or just write the main function.

Please remember that these functions must be written above the main function if you want to use these in your main function.