1. Write a program to imitate the calculator. Use *switch case* statement.

```cpp
#include <iostream>
using namespace std;

int main (){
    char op;
    int num1;
    int num2;

    cout << "Enter an Operator (+,-,*,/): ";
    cin >> op;

    cout << "Enter two operands: ";
    cin >> num1 >>num2;

    switch (op){
        case '+':
            cout << num1 << "+" << num2 << "=" <<num1+num2<<endl;
            break;

        case '-':
            cout << num1 << "-" << num2 << "=" <<num1-num2<<endl;
            break;

        case '*':
            cout << num1 << "*" << num2 << "=" <<num1*num2<<endl;
            break;

        case '/':
            cout << num1 << "/" << num2 << "=" <<num1/num2<<endl;
            break;

        default:
            cout << "Invalid operator"<<endl;
            break;
```

```
C:\Users\muhda\Desktop\Lab 1 (Part 2)\Q1.exe

Enter an Operator (+,-,*,/): +
Enter two operands: 10 20
10+20=30

--------------------------------
Process exited after 16.76 seconds with return value 0
Press any key to continue . . .
```

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2. Write a program to produce the following pattern. Use nested loops.

```cpp
1   #include <iostream>
2   using namespace std;
3
4   int main ()
5   {
6   //use nested loops
7
8   for (int i =1; i <6; i++){
9
10      for (int j=1; j<=i; j++){
11          cout << j << " ";
12      }
13      cout << endl;
14  }
15
16  return 0;
17  }
```

```
C:\Users\muhda\Desktop\Lab 1 (Part 2)\Q2.exe

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

--------------------------------
Process exited after 0.04949 seconds with return value 0
Press any key to continue . . .
```

3. A class of five students took a quiz. Write a program that will prompt the user to enter five student's marks and calculate the average quiz marks. Use while loops to prompt all the five marks.

```cpp
1   #include <iostream>
2   using namespace std;
3
4   int main (){
5
6       int mark[5], sum = 0, i = 0;
7
8       while (i<5){
9           cout << "Enter mark: " ;
10          cin >> mark[i];
11          sum = sum + mark[i];
12          i++;
13      }
14
15      double avg = sum / 5;
16      cout <<"Mark average is: "<<avg<<endl;
17  return 0;
18  }
```

```
C:\Users\muhda\Desktop\Lab 1 (Part 2)\Q3.exe

Enter mark: 56
Enter mark: 88
Enter mark: 95
Enter mark: 45
Enter mark: 78
Mark average is: 72

--------------------------------
Process exited after 14.99 seconds with return value 0
Press any key to continue . . .
```

4. Prompt user to key in five integer values and store the values in an array. Pass the array to a function name Sum( ) that will calculate and display the sum of all the elements.

```cpp
1   #include <iostream>
2   using namespace std;
3
4   void Sum (int arr[], int size){
5       int sum=0;
6       //loop sum of the number
7       for (int i=0; i<size; i++){
8           sum += arr[i];
9       }
10      cout << "Sum of the numbers entered is : "<<sum<<endl;
11  }
12
13  int main ()
14  {
15      int arr[5];
16
17      cout << "Enter five numbers and the program will calculate su
18      for (int i =0; i<5; i++){
19          cout << "Enter number "<<i+1 <<" : ";
20          cin >> arr[i];
21      }
22
23      cout <<"You have entered: ";
24      for (int i = 0; i<5; i++){
25          cout << arr[i];
26          if (i<4){
27              cout << ", ";
28          }
29      }
30
31      cout << endl;
32      Sum(arr, 5);
33
34      return 0;
```

```
C:\Users\muhda\Desktop\Lab 1 (Part 2)\Q4.exe

Enter five numbers and the program will calculate sum of the number.
Enter number 1 : 1
Enter number 2 : 6
Enter number 3 : 4
Enter number 4 : 3
Enter number 5 : 3
You have entered: 1, 6, 4, 3, 3
Sum of the numbers entered is : 17

--------------------------------
Process exited after 3.622 seconds with return value 0
Press any key to continue . . .
```

Submissive Question

Create a struct called employee. Members of the struct will be first_name type string, last_name type string, emp_num type string, and age type int. Create an instance of the structure called record to access the members of type employee.

```cpp
1   #include <iostream>
2   #include <string.h>
3   using namespace std;
4
5   struct employee{
6       string first_name;
7       string last_name;
8       string emp_num;
9       int age;
10
11  };
12
13  int main (){
14      employee record;
15
16      cout << "First name: ";
17      getline (cin, record.first_name);
18
19      cout << "Last name: ";
20      getline (cin, record.last_name);
21
22      cout << "Employee number: ";
23      getline (cin,record.emp_num);
24
25      cout << "Age: ";
26      cin >> record.age;
27
28      cout <<endl;
29
30      cout <<"Hello "<<record.first_name<<endl;
31      cout <<"Your Employee number "<<record.emp_num<<endl;
32      cout <<"You are "<<record.age <<" years old"<<endl;
33
34      return 0;
```

```
C:\Users\muhda\Desktop\Lab 1 (Part 2)\Q5.exe

First name: Megan
Last name: Bright
Employee number: x001
Age: 23

Hello Megan
Your Employee number x001
You are 23 years old

-------------------------------
Process exited after 5.986 seconds with return value 0
Press any key to continue . . .
```