**Program:**

**(Without Class)**

#include<iostream>

using namespace std;

int main()

{

    int ch;

    double a,b,result;

    cout<<"Welcome to simple Arithmetic calculator"<<endl;

        cout<<"1. Addition"<<endl;

        cout<<"2. Subtraction"<<endl;

        cout<<"3. Multiplication"<<endl;

        cout<<"4. Division"<<endl;

        cout<<"5. Exit"<<endl;

    do {

        cout<<"Enter your choice:";

        cin>>ch;

        if(ch>=1&&ch<=4){

            cout<<"Enter two numbers:"<<endl;

            cin>>a>>b;

        }

        switch(ch){

            case 1:

            result=a+b;

            cout<<a<<" + "<<b<<" = "<<result<<endl;

            break;

            case 2:

            result=a-b;

            cout<<a<<" - "<<b<<" = "<<result<<endl;

            break;

            case 3:

            result=a\*b;

            cout<<a<<" \* " <<b<<" = "<<result<<endl;

            break;

            case 4:

            if(b==0){

                cout<<"Error: Division by zero is not allowed."<<endl;

            }

            else {

                result=a/b;

                cout<<a<<" / "<<b<<" = "<<result<<endl;

            }

            break;

            case 5:

            cout<<"Exiting the calculator."<<endl;

            break;

            default:

            cout<<"Invalid choice. Please try again."<<endl;

            }

    } while(ch != 5);

        return 0;

}

**(With Class)**

#include<iostream>

using namespace std;

class Calculator {

public:

    double add(double a, double b) {

        return a + b;

    }

    double subtract(double a, double b) {

        return a - b;

    }

    double multiply(double a, double b) {

        return a \* b;

    }

    double divide(double a, double b) {

        if (b == 0) {

            cout << "Error: Division by zero is not allowed." << endl;

            return 0; // Or some other error indicator

        }

        return a / b;

    }

};

int main()

{

    Calculator calc; // Create an instance of the Calculator class

    int ch;

    double a, b, result;

    cout << "Welcome to simple Arithmetic calculator" << endl;

    cout << "1. Addition" << endl;

    cout << "2. Subtraction" << endl;

    cout << "3. Multiplication" << endl;

    cout << "4. Division" << endl;

    cout << "5. Exit" << endl;

    do {

        cout << "Enter your choice: ";

        cin >> ch;

        if (ch >= 1 && ch <= 4) {

            cout << "Enter two numbers:" << endl;

            cin >> a >> b;

        }

        switch (ch) {

            case 1:

                result = calc.add(a, b);

                cout << a << " + " << b << " = " << result << endl;

                break;

            case 2:

                result = calc.subtract(a, b);

                cout << a << " - " << b << " = " << result << endl;

                break;

            case 3:

                result = calc.multiply(a, b);

                cout << a << " \* " << b << " = " << result << endl;

                break;

            case 4:

                // Error handling is now inside the divide method

                if (b != 0) {

                    result = calc.divide(a, b);

                    cout << a << " / " << b << " = " << result << endl;

                } else {

                    calc.divide(a, b);

                }

                break;

            case 5:

                cout << "Exiting the calculator." << endl;

                break;

            default:

                cout << "Invalid choice. Please try again." << endl;

        }

    } while (ch != 5);

    return 0;

}

**OUTPUT:**

PS C:\Users\btm9d\Desktop\College\CPP> g++ Ass-2.cpp

PS C:\Users\btm9d\Desktop\College\CPP> ./a.exe

Welcome to simple Arithmetic calculator

1. Addition

2. Subtraction

3. Multiplication

4. Division

5. Exit

Enter your choice:1

Enter two numbers:

5 9

5 + 9 = 14

Enter your choice:2

Enter two numbers:

5 4

5 - 4 = 1

Enter your choice:3

Enter two numbers:

8 9

8 \* 9 = 72

Enter your choice:4

Enter two numbers:

12 6

12 / 6 = 2

Enter your choice:5

Exiting the calculator.

PS C:\Users\btm9d\Desktop\College\CPP>