PIMPRI CHINCHWAD EDUCATION TRUST's.

PIMPRI CHINCHWAD COLLEGE OF ENGINEERING

(An Autonomous Institute)

Class : SY BTech **Acad. Yr. 2025-26** **Semester : I**

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Department: Computer Engineering **Division : A**

Course Name : Data Structures Laboratory **Code:BCE23PC02**

Completion Date : 15/10/2025

Assignment No. 6

Problem Statement: Write a program for Mathematical Expression Evaluation in Calculator: Implement a calculator that supports evaluation of complex arithmetic expressions using stacks for operands and operators.

Source Code :

```
#include <bits/stdc++.h>
using namespace std;

int main()
{
   string exp;
   stack<char> st;
   cout << "Enter Exp: ";
   getline(cin, exp);
   // getchar();
   for (int i = 0; i < exp.size(); i++)
   {
      if (exp[i] == '+' || exp[i] == '-' || exp[i] == '*' || exp[i] == '/')
      {
         int t1 = st.top() - '0';
         st.pop();
         int t2 = st.top() - '0';
         st.pop();
         int sol = 0;
         switch (exp[i])
         {
         case '+':
```

```
            sol = t1 + t2;
            break;
        case '-':
            sol = t2 - t1;
            break;
        case '*':
            sol = t1 * t2;
            break;
        case '/':
            sol = t2 / t1;
            break;
        default:
            break;
        }
        st.push(char(sol)+'0');
    }else{
        st.push(exp[i]);
    }
  }

  cout<<"Ans is: "<<st.top();

  return 0;
}
```

Screen Shot of Output :

```
Enter Exp: 45+
Ans is: 9
```

Conclusion: Hence we have successfully implemented a calculator using stack.