

Praneesh R V
CB.SC.U4CYS23036

Secure Coding Assignment 3

Calculator using SafeInt

```
#include <iostream>
#include "SafeInt.hpp"
using namespace std;
int main() {
    int num1, num2;
    char op;
    cout << "Enter first number: ";
    cin >> num1;
    cout << "Enter operator (+ - * /): ";
    cin >> op;
    cout << "Enter second number: ";
    cin >> num2;

    SafeInt<int> a = num1;
    SafeInt<int> b = num2;
    int answer;

    bool success = false;
    if(op == '+') {
        success = SafeAdd(num1, num2, answer);
    }
    else if(op == '-') {
        success = SafeSubtract(num1, num2, answer);
    }
    else if(op == '*') {
        success = SafeMultiply(num1, num2, answer);
    }
}
```

```

        else if(op == '/') {
            success = SafeDivide(num1, num2, answer);
        }
        else {
            cout << "Bad operator!" << endl;
            return 1;
        }

        if(success) {
            cout << "Answer: " << answer << endl;
        } else {
            cout << "Error, Integer Overflow or divided by zero"
<< endl;
        }

        return 0;
    }
}

```

Output:

```

> cd "/home/crimson/Praneesh/Academics/Sem5/Secure Coding/" && g++ safeIntCalculator.cpp -o safeIntCalculator && "/home/crimson/Praneesh/Academics/Sem5/Secure Coding/"sa
feIntCalculator
Enter first number: 32
Enter operator (+ - * /): -
Enter second number: 23
Answer: 9
> cd "/home/crimson/Praneesh/Academics/Sem5/Secure Coding/" && g++ safeIntCalculator.cpp -o safeIntCalculator && "/home/crimson/Praneesh/Academics/Sem5/Secure Coding/"sa
feIntCalculator
Enter first number: 2147483647
Enter operator (+ - * /): +
Enter second number: 1
Error, Integer Overflow or divided by zero
> cd "/home/crimson/Praneesh/Academics/Sem5/Secure Coding/" && g++ safeIntCalculator.cpp -o safeIntCalculator && "/home/crimson/Praneesh/Academics/Sem5/Secure Coding/"sa
feIntCalculator
Enter first number: 21474836
Enter operator (+ - * /): *
Enter second number: 435332
Error, Integer Overflow or divided by zero
> cd "/home/crimson/Praneesh/Academics/Sem5/Secure Coding/" && g++ safeIntCalculator.cpp -o safeIntCalculator && "/home/crimson/Praneesh/Academics/Sem5/Secure Coding/"sa
feIntCalculator
Enter first number: 4
Enter operator (+ - * /): /
Enter second number: 0
Error, Integer Overflow or divided by zero
~/Praneesh/Academics/Sem5/Secure Coding main* > 

```