**Week 12: In-Class Lab**

**Calculator Program (10 pts)**

**Problem statement:**

Write a program that lets the user perform arithmetic operations on two numbers. Your program must be menu driven, allowing the user to select the operation (+, -, \*, or /) and input the numbers. Furthermore, your program must consist of following functions:

1. **Function showChoice**: This function shows the options to the user and explains

how to enter data.

1. **Function add**: This function accepts two number as arguments and returns sum.

3. **Function subtract**: This function accepts two number as arguments and

returns their difference.

1. **Function mulitiply**: This function accepts two number as arguments and returns

product.

1. **Function divide**: This function accepts two number as arguments and returns

quotient.

**Output should look like below:**

MENU

1: Add

2: Subtract

3: Multiply

4: Divide

5: Exit

Enter your choice :1

Enter two numbers: 12 24

Sum 36

MENU

1: Add

2: Subtract

3: Multiply

4: Divide

5: Exit

Enter your choice :4

Enter two numbers: 10 4

Product 2.5

MENU

1: Add

2: Subtract

3: Multiply

4: Divide

5: Exit

Enter your choice :7

Invalid input

**Note**: Test all the possible inputs from the menu, 1-5 and invalid entry. Also only write algorithm for this program along with IPO chart.

**ALGORITHM:**

Calc.h -> DECLARE ALL NEEDED METHODS

void showChoices();

float add(float, float);

float subtract(float, float);

float multiply(float, float);

float divide(float, float);

CalcClass.cpp -> DEFINE ALL METHODS

void showChoices()

{

cout << "MENU" << endl;

cout << "1: Add " << endl;

cout << "2: Subtract" << endl;

cout << "3: Multiply " << endl;

cout << "4: Divide " << endl;

cout << "5: Exit " << endl;

cout << "Enter your choice :";

}

float add(float a, float b)

{

return a + b;

}

float subtract(float a, float b)

{

return a - b;

}

float multiply(float a, float b)

{

return a \* b;

}

float divide(float a, float b)

{

return a / b;

}

Main.cpp or CalcMain.cpp -> OPERATE PROGRAM VIA USER

DECLARE NEEDED VARS

float x, y;

int choice;

SWITCH STATEMENT AND DISPLAY CHOICES VIA showChoices();

USE SUBTRACT, DIVIDE, ADD, MULTIPLY methods depending on user choice

GET NUMBERS FROM USER

PRINT EITHER DIFFERENCE, QUOTIENT, SUM, OR PRODUCT depending on method used

ASK USER FOR NEXT PROBLEM

|  |  |  |
| --- | --- | --- |
| Input | Processing | Output |
| Switch statement : int choice  Use numbers : float fl1, fl2 | Choice decides to +,-,\*, or / using fl1 & fl2 | Printed either sum, difference, product, or quotient |