**Question:**

Write a simple calculator program.

Your program runs once and then exits.

Perform Add, Subtract, Multiply, and Divide.

You should check for Division by Zero if Divide.

Print out a menu that prompts the user to make a choice.

Ask the user to enter two numbers.

Determine the operation selected **using an IF statement**.

Perform the calculation.

Output the result.

In a Word document, write out your **Outline**and **Logic**sections and upload that document along with your main.cpp file or you can paste your C++ code in your Word document under " **Code**"

**ANS:**

**Outline:**

1) Need 4 variables: result, num1, num2, opt

2) Ask the user to select an option from 4 options: Addition, Subtraction, Multiplication and Division

3) Take user input for the option

4) Then ask the user to input two numbers

5) Calculate the result based on selected option

6) Print the result

**Logic:**

1) Need 4 variables:

float result, num1, num2;

int opt;

2) Prints Welcome message

3) Asks the user to select from 4 operations:

1.Addition

2.Subtraction

3.Multiplication

4.Division

4) Takes user input for the option:

cin >> opt;

5) Checks if user gave correct selection option with an if statement:

if (opt ==1 || opt==2 || opt==3 || opt==4){}

6) If correct opt, asks the user to input first number:

cin >> num1;

Then asks the user to input second number:

cin >> num2;

Then calculate the result based on a selected option:

If (opt==1), addition takes place, result = num1 + num2

Else if (opt==2), subtraction takes place, result = num1 - num2

Else if (opt==3), multiplication takes place, result = num1 \* num2

Else if (opt==4), then checks for num2 that is denominator. If num2 is 0, then prints division by 0 and result is infinity. Else division takes place, result = num1/num2

Prints the output result

7) else, prints asking the user to give correct option from (1-4).

**Code:**

#include <stdio.h>

#include <iostream>

using namespace std;

int main()

{

//Declaration section

float result, num1, num2;

int opt;

//Menu section

cout << "Welcome to the Calculator program" << endl;

cout << "\nSelect one option from the list below:\n" ;

cout << "1. Addition\n";

cout << "2. Subtraction\n";

cout << "3. Multiplication\n";

cout << "4. Division\n";

//Get operation

cout << "Please enter your selection:\n";

cin >> opt;

//Checking if user gave right selection

if (opt == 1 || opt == 2 || opt == 3 || opt == 4 ){

//Input first number

cout << "Enter first number:\n";

cin >> num1;

//Input second number

cout << "Enter second number:\n";

cin >> num2;

//Calculate result based on option

if (opt == 1){

result = num1 + num2;

}

else if ( opt == 2){

result = (num1) - (num2);

}

else if (opt == 3){

result = num1 \* num2;

}

else if (opt == 4){

//Checking if division by 0

if (num2 == 0 ){

cout << "\nDivision by 0" << endl;

result = num1/num2;

}

else {

result = num1/num2;

}

}

//Output result

cout << "\nThe result is :" << result << endl;

}

else {

cout << "\nPlease select an option from 1 to 4 \n";

}

return 0;

}