LAB TASK #9

Write a C++ program that performs basic arithmetic operations using functions.

Your program must:

1. Ask the user to enter two numbers.

2. Display a menu showing the available operations:

o Addition (+)

o Subtraction (−)

o Multiplication (*)

o Division (/)

o Power (p)

3. Ask the user to enter their choice.

4. Use a switch statement to call the correct function based on the user's choice.

5. Each operation must be implemented in a separate function:

6. Display the result of the selected operation.

7. Handle division by zero properly.

Solution:

```
#include<iostream>
using namespace std;

double add(double, double);
double sub(double, double);
double mul(double, double);
double div(double, double);
double power(double);
void menu(void);

int main()
{
        double n1 = 0;
        double n2 = 0;
```

```
double sum = 0;
double minus = 0;
double product = 0;
double division = 0;
double c= 0;
int choice = 0;

cout << "Name: MUHAMMAD SALMAN\nSap Id: 72373\nLab Task #9" << endl;
cout << "Enter two numbers:" << endl;// User will enter 2 numbers
cin >> n1 >> n2;

menu();// displays menu using function call
cout << "Now enter choice:" << endl;//User will enter choice from menu
cin >> choice;
switch (choice)//switch statement is used to call the correct functionbased on the user choice
{
case 1:
	sum = add(n1, n2);
	cout << "Addition of " << n1 << "+" << n2 << " is=" << sum << endl;
	break;
case 2:
	minus = sub(n1, n2);
	cout << "Subtraction of " << n1 << "-" << n2 << " is=" << minus << endl;
	break;
case 3:
	product = mul(n1, n2);
	cout << "Multiplication of " << n1 << "*" << n2 << " is=" << product << endl;
	break;
case 4:
	if (n2 == 0)//Here i handled division of 0
		cout << "Error number is 0 it is not divisible" << endl;
	else
	{
		division = div(n1, n2);
```

```
                cout << "Division of " << n1 << "/" << n2 << " is=" << division << endl;
            }
            break;
        case 5:
            c = power(n1);
            cout << "Power of " << n1 <<" is=" << c << endl;
            break;
        default:
            cout << "Invalid Choice Entry Please Try Again" << endl;
        }
        return 0;
}
void menu(void)
{
        cout << "\n----------Arithmetic Operations----------\n";
        cout << "1. ADDITION (+)\n";
        cout << "2. SUBTRACTION (-)\n";
        cout << "3. MULTIPLICATION (*)\n";
        cout << "4. DIVISION (/)\n";
        cout << "5. POWER (p)\n";
        cout << "-----------------------------------------\n";
}
//Each operation is implemented in an specific function: function definition used here
double add(double n1, double n2)
{
        double x;
        x = n1 + n2;
        return x;
}
double sub(double n1, double n2)
{
        double x;
        x = n1 - n2;
        return x;
```

```
}
double mul(double n1, double n2)
{
	double x;
	x = n1 * n2;
	return x;
}
double div(double n1, double n2)
{
	double x;
	x = n1 / n2;
	return x;
}
double power(double n1)
{
	double x;
	x = n1 * n1;
	return x;
}
```

OUTPUT: