ASSIGNMENT – 3

Simple Calculator is a C language-based application used for  
performing all the simple arithmetic operations like addition,  
multiplication, division, and subtraction. The application can be  
made using basic knowledge of C like if-else statements, loops,  
etc.  
The functionalities of the application are mentioned below:  
1. Addition  
2. Subtraction  
3. Multiplication  
4. Division  
5. Logarithmic values  
6. Square roots

Solution:

#include <stdio.h>

#include <math.h>

void addition();

void subtraction();

void multiplication();

void division();

void logarithm();

void squareRoot();

int main() {

int choice;

do {

printf("\nSelect an operation:\n");

printf("1. Addition\n");

printf("2. Subtraction\n");

printf("3. Multiplication\n");

printf("4. Division\n");

printf("5. Logarithmic values\n");

printf("6. Square roots\n");

printf("7. Exit\n");

printf("Enter your choice (1-7): ");

scanf("%d", &choice);

switch (choice) {

case 1:

addition();

break;

case 2:

subtraction();

break;

case 3:

multiplication();

break;

case 4:

division();

break;

case 5:

logarithm();

break;

case 6:

squareRoot();

break;

case 7:

printf("Exiting the program.\n");

break;

default:

printf("Invalid choice!Please enter a number IN RANGE 1-7.\n");

}

} while (choice != 7);

return 0;

}

void addition() {

double a, b;

printf("Enter two numbers: ");

scanf("%f %f", &a, &b);

printf("Result: %f\n", a + b);

}

void subtraction() {

double a, b;

printf("Enter two numbers: ");

scanf("%f %f", &a, &b);

printf("Result: %f\n", a - b);

}

void multiplication() {

double a, b;

printf("Enter two numbers: ");

scanf("%f %f", &a, &b);

printf("Result: %.2lf\n", a \* b);

}

void division() {

double a, b;

printf("Enter two numbers: ");

scanf("%f %f", &a, &b);

if (b != 0) {

printf("Result: %f\n", a / b);

} else {

printf("Error: Division by zero is not allowed.\n");

}

}

void logarithm() {

double a;

printf("Enter a positive number: ");

scanf("%f", &a);

if (a > 0) {

printf("Logarithm (base e): %f\n", log(a)); // Natural logarithm

printf("Logarithm (base 10): %f\n", log10(a));

} else {

printf("Error: Logarithm is defined for positive numbers only.\n");

}

}

void squareRoot() {

double a;

printf("Enter a non-negative number: ");

scanf("%f", &a);

if (a >= 0) {

printf("Square root: %f\n", sqrt(a));

} else {

printf("Error: Square root is not defined for negative numbers.\n");

}

}