#include<stdio.h>

#include<conio.h>

#include<math.h>

#include<stdlib.h>

#define KEY "Enter the calculator Operation you want to do:"

**void** addition();

**void** subtraction();

**void** multiplication();

**void** division();

**void** modulus();

**void** power();

**int** factorial();

**void** calculator\_operations();

**int** main()

{

**int** X=1;

**char** Calc\_oprn;

    calculator\_operations();

**while**(X)

    {

**printf**("\n");

**printf**("%s : ", KEY);

        Calc\_oprn=getche();

**switch**(Calc\_oprn)

        {

**case** '+': addition();

**break**;

**case** '-': subtraction();

**break**;

**case** '\*': multiplication();

**break**;

**case** '/': division();

**break**;

**case** '?': modulus();

**break**;

**case** '!': factorial();

**break**;

**case** '^': power();

**break**;

**case** 'H':

**case** 'h': calculator\_operations();

**break**;

**case** 'Q':

**case** 'q': exit(0);

**break**;

**case** 'c':

**case** 'C': system("cls");

                      calculator\_operations();

**break**;

**default** : system("cls");

**printf**("\n\*\*\*\*\*\*\*\*\*\*You have entered unavailable option");

**printf**("\*\*\*\*\*\*\*\*\*\*\*\n");

**printf**("\n\*\*\*\*\*Please Enter any one of below available ");

**printf**("options\*\*\*\*\n");

                      calculator\_operations();

        }

    }

}

**void** calculator\_operations()

{

**printf**("\n             Welcome to C calculator \n\n");

**printf**("\*\*\*\*\*\*\* Press 'Q' or 'q' to quit ");

**printf**("the program \*\*\*\*\*\*\*\*\n");

**printf**("\*\*\*\*\* Press 'H' or 'h' to display ");

**printf**("below options \*\*\*\*\*\n\n");

**printf**("Enter 'C' or 'c' to clear the screen and");

**printf**(" display available option \n\n");

**printf**("Enter + symbol for Addition \n");

**printf**("Enter - symbol for Subtraction \n");

**printf**("Enter \* symbol for Multiplication \n");

**printf**("Enter / symbol for Division \n");

**printf**("Enter ? symbol for Modulus\n");

**printf**("Enter ^ symbol for Power \n");

**printf**("Enter ! symbol for Factorial \n\n");

}

**void** addition()

{

**int** n, total=0, k=0, number;

**printf**("\nEnter the number of elements you want to add:");

    scanf("%d",&n);

**printf**("Please enter %d numbers one by one: \n",n);

**while**(k<n)

    {

        scanf("%d",&number);

        total=total+number;

        k=k+1;

    }

**printf**("Sum of %d numbers = %d \n",n,total);

}

**void** subtraction()

{

**int** a, b, c = 0;

**printf**("\nPlease enter first number  : ");

    scanf("%d", &a);

**printf**("Please enter second number : ");

    scanf("%d", &b);

    c = a - b;

**printf**("\n%d - %d = %d\n", a, b, c);

}

**void** multiplication()

{

**int** a, b, mul=0;

**printf**("\nPlease enter first numb   : ");

    scanf("%d", &a);

**printf**("Please enter second number: ");

    scanf("%d", &b);

    mul=a\*b;

**printf**("\nMultiplication of entered numbers = %d\n",mul);

}

**void** division()

{

**int** a, b, d=0;

**printf**("\nPlease enter first number  : ");

    scanf("%d", &a);

**printf**("Please enter second number : ");

    scanf("%d", &b);

    d=a/b;

**printf**("\nDivision of entered numbers=%d\n",d);

}

**void** modulus()

{

**int** a, b, d=0;

**printf**("\nPlease enter first number   : ");

    scanf("%d", &a);

**printf**("Please enter second number  : ");

    scanf("%d", &b);

    d=a%b;

**printf**("\nModulus of entered numbers = %d\n",d);

}

**void** power()

{

**double** a,num, p;

**printf**("\nEnter two numbers to find the power \n");

**printf**("number: ");

    scanf("%lf",&a);

**printf**("power : ");

    scanf("%lf",&num);

    p=pow(a,num);

**printf**("\n%lf to the power %lf = %lf \n",a,num,p);

}

**int** factorial()

{

**int** i,fact=1,num;

**printf**("\nEnter a number to find factorial : ");

    scanf("%d",&num);

**if** (num<0)

    {

**printf**("\nPlease enter a positive number to");

**printf**(" find factorial and try again. \n");

**printf**("\nFactorial can't be found for negative");

**printf**(" values. It can be only positive or 0  \n");

**return** 1;

    }

**for**(i=1;i<=num;i++)

    fact=fact\*i;

**printf**("\n");

**printf**("Factorial of entered number %d is:%d\n",num,fact);

**return** 0;

}