**Assignment 03 Using Type 2**

#include <stdio.h>

void OneToTen();

void tableOfNum();

int sumOfNumdinrange();

int isPrime();

int armstrong();

int perfect();

int factorial();

int strong();

int palindrome();

int sumOfFirstAndLastDigit();

void main()

{

    int ch = 1;

    while (ch)

    {

        printf("\n Eneter your choice : \n");

        printf("1) one to ten: \n");

        printf("2) Table of Num: \n");

        printf("3) Sum of nums in range : \n");

        printf("4) is prime: \n");

        printf("5) Armstrong: \n");

        printf("6) Perfect No: \n");

        printf("7) Factorial: \n");

        printf("8) Strong Num: \n");

        printf("9) Palindrome: \n");

        printf("10) Sum Of Frirst and Last Digit: \n");

        scanf("%d", &ch);

        if (ch > 10 || ch <= 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            OneToTen();

        }

        else if (ch == 2)

        {

            tableOfNum();

        }

        else if (ch == 3)

        {

            printf("\n %d : is sum", sumOfNumdinrange());

        }

        else if (ch == 4)

        {

            isPrime() ? printf("num is  Prime. \n") : printf("num is not Prime. \n");

        }

        else if (ch == 5)

        {

            (armstrong()) ? printf("Number is Armstrong Number.") : printf("Number is not Armstrong Number.");

        }

        else if (ch == 6)

        {

            perfect() ? printf(" perfect number") : printf("not perfect number");

        }

        else if (ch == 7)

        {

            printf("%d is factorial of entered number", factorial());

        }

        else if (ch == 8)

        {

            strong() ? printf("strong number") : printf("Not strong number");

        }

        else if (ch == 9)

        {

            palindrome() ? printf("it is Palindrome Number.") : printf("Not palindrome Number.");

        }

        else if (ch == 10)

        {

            printf("%d is sum of first and last digit of given numbr.", sumOfFirstAndLastDigit());

        }

    }

}

void OneToTen()

{

    int num = 1;

    while (num <= 10)

    {

        printf("%d \n", num);

        num++;

    }

    printf("%d is exit value of num.", num);

}

void tableOfNum()

{

    int num;

    printf("Enter a number. \n");

    scanf("%d", &num);

    int i = 1;

    while (i <= 10)

    {

        printf("%d \* %d = %d \n", num, i, num \* i);

        i++;

    }

    printf("Exit value of i = %d", i);

}

int sumOfNumdinrange()

{

    int start, end;

    printf("Enter starting range :");

    scanf("%d", &start);

    // printf("\n");

    printf("Enter Ending range : ");

    scanf("%d", &end);

    int sum = 0;

    int temp = start;

    while (temp <= end)

    {

        sum += temp;

        temp++;

    }

    return sum;

    // printf("Sum of numbers between %d to %d is = %d", start, end, sum);

}

int isPrime()

{

    printf("Enter a number to cheack Prime or Not :");

    int num;

    scanf("%d", &num);

    int i = 2, cnt = 0;

    while (i <= num / 2)

    {

        if (num % i == 0)

        {

            return 0;

        }

        i++;

    }

    printf("Exit value of I is : %d", i);

    return 1;

}

int armstrong()

{

    int num, rem = 0;

    int armN = 0;

    printf("Enter A 3 digit number to cheack armstrong. : ");

    scanf("%d", &num);

    int temp = num;

    while (temp)

    {

        rem = temp % 10;

        armN += rem \* rem \* rem;

        temp /= 10;

    }

    if ((armN == num))

    {

        return 1;

    }

    else

    {

        return 0;

    }

}

int perfect()

{

    printf("Enter A number :");

    int num, i = 1, cnt = 0, sumOfDivisor = 0;

    scanf("%d", &num);

    while (i < num)

    {

        if (num % i == 0)

        {

            sumOfDivisor += i;

            cnt++;

        }

        i++;

    }

    if (sumOfDivisor == num)

    {

        return 1;

    }

    else

    {

        return 0;

    }

}

int factorial()

{

    int num;

    int Fact = 1;

    printf("Enter A number :");

    scanf("%d", &num);

    if (num < 0)

    {

        printf("Invalid number!");

    }

    else if (num > 0)

    {

        // while (num)

        // {

        //     Fact \*= num;

        //     num--;

        // }

        for (int i = 2; i <= num; i++)

            Fact \*= i;

    }

    return Fact;

}

int strong()

{

    printf("Enter a number : ");

    int num;

    scanf("%d", &num);

    int temp = num;

    int FcatSum = 0;

    while (temp != 0)

    {

        int rem = temp % 10;

        int fact = 1;

        if (rem > 0)

        {

            while (rem)

            {

                fact \*= rem;

                rem--;

            }

            FcatSum += fact;

            temp /= 10;

        }

        else

        {

            FcatSum += fact;

            temp /= 10;

        }

    }

    // printf("%d is factsum.", FcatSum);

    if (FcatSum == num)

    {

        return 1;

    }

    else

    {

        return 0;

    }

}

int palindrome()

{

    printf("Enter A number :");

    int num;

    scanf("%d", &num);

    int temp = num;

    int rev = 0;

    while (temp > 0)

    {

        int rem = temp % 10;

        rev = (rev \* 10) + rem;

        temp /= 10;

    }

    if (rev == num)

    {

        return 1;

    }

    else

    {

        return 0;

    }

}

int sumOfFirstAndLastDigit()

{

    printf("Enter A number : ");

    int num;

    scanf("%d", &num);

    int lastDigit, firstDigit;

    lastDigit = num % 10;

    firstDigit = num / 10;

    while (firstDigit >= 10)

    {

        firstDigit /= 10;

    }

    int sum = firstDigit + lastDigit;

    return sum;

}

Output:

PS C:\Code> & 'c:\Users\bhagv\.vscode\.... \TDM-GCC-64\bin\gdb.exe' '--interpreter=mi'

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

1

1

2

3

4

5

6

7

8

9

10

11 is exit value of num.

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

2

Enter a number.

23

23 \* 1 = 23

23 \* 2 = 46

23 \* 3 = 69

23 \* 4 = 92

23 \* 5 = 115

23 \* 6 = 138

23 \* 7 = 161

23 \* 8 = 184

23 \* 9 = 207

23 \* 10 = 230

Exit value of i = 11

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

3

Enter starting range :1

Enter Ending range : 9

45 : is sum

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

4

Enter a number to cheack Prime or Not :34

num is not Prime.

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

5

Enter A 3 digit number to cheack armstrong. : 223

Number is not Armstrong Number.

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

6

Enter A number :345

not perfect number

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

7

Enter A number :5

120 is factorial of entered number

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

8

Enter a number : 6

Not strong number

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

9

Enter A number :141

it is Palindrome Number.

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

10

Enter A number : 3342589

12 is sum of first and last digit of given numbr.

Eneter your choice :

1) one to ten:

2) Table of Num:

3) Sum of nums in range :

4) is prime:

5) Armstrong:

6) Perfect No:

7) Factorial:

8) Strong Num:

9) Palindrome:

10) Sum Of Frirst and Last Digit:

0

Inavalid Choice !

PS C:\Code>