**Assignment 03 Using Type 1**

#include <stdio.h>

void OneToTen();

void tableOfNum();

void sumOfNumdinrange();

void isPrime();

void armstrong();

void perfect();

void factorial();

void strong();

void palindrome();

void sumOfFirstAndLastDigit();

void main()

{

    int ch = 1;

    while (ch)

    {

        printf("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");

        printf(" Enter 0 to exit.\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)

        {

            sumOfNumdinrange();

        }

        else if (ch == 4)

        {

            isPrime();

        }

        else if (ch == 5)

        {

            armstrong();

        }

        else if (ch == 6)

        {

            perfect();

        }

        else if (ch == 7)

        {

            factorial();

        }

        else if (ch == 8)

        {

            strong();

        }

        else if (ch == 9)

        {

            palindrome();

        }

        else if (ch == 10)

        {

            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);

}

void 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++;

    }

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

}

void 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)

        {

            cnt++;

        }

        i++;

    }

    if (cnt > 0 || num == 1)

    {

        printf("num %d is not Prime. \n", num);

    }

    else

    {

        printf("num %d is  Prime. \n", num);

    }

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

}

void armstrong()

{

    int num, rem = 0;

    int armN = 0;

    printf("Enter A number to cheack armstrong. \n: ");

    scanf("%d", &num);

    int temp = num;

    while (temp)

    {

        // printf("Im stuck help me !!!!");

        rem = temp % 10;

        armN += rem \* rem \* rem;

        temp /= 10;

    }

    if (armN == num)

    {

        printf("Number %d is Armstrong Number.", num);

    }

    else

    {

        printf("Number %d is not Armstrong Number.", num);

    }

}

void perfect()

{

    printf("Enter A number :");

    int num, i = 1, sumOfDivisor = 0;

    scanf("%d", &num);

    while (i < num)

    {

        if (num % i == 0)

        {

            sumOfDivisor += i;

            // cnt++;

        }

        i++;

    }

    if (sumOfDivisor == num)

    {

        printf("Number %d is perfect number \n", num);

    }

    else

    {

        printf("%d is not perfect number \n", num);

    }

}

void 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;

        }

    }

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

}

void 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)

    {

        printf("%d is a strong number", num);

    }

    else

    {

        printf("%d is not a strong number.", num);

    }

}

void 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)

    {

        printf("%d is a palindrome Number.", num);

    }

    else

    {

        printf("%d Is not a palindrome number", num);

    }

}

void 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;

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

}

Output :

PS C:\Code> & 'c:\Users\bhagv\…..:\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:

Enter 0 to exit.

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:

Enter 0 to exit.

2

Enter a number.

3

3 \* 1 = 3

3 \* 2 = 6

3 \* 3 = 9

3 \* 4 = 12

3 \* 5 = 15

3 \* 6 = 18

3 \* 7 = 21

3 \* 8 = 24

3 \* 9 = 27

3 \* 10 = 30

Exit value of i = 11Eneter 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:

Enter 0 to exit.

4

Enter a number to cheack Prime or Not :34

num 34 is not Prime.

Exit value of I is : 18Eneter 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:

Enter 0 to exit.

3

Enter starting range :1

Enter Ending range : 6

Sum of numbers between 1 to 6 is = 21Eneter 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:

Enter 0 to exit.

5

Enter A number to cheack armstrong.

: 345

Number 345 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:

Enter 0 to exit.

6

Enter A number :6

Number 6 is 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:

Enter 0 to exit.

7

Enter A number :5

120 is factorial of entered numberEneter 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:

Enter 0 to exit.

8

Enter a number : 67

67 is not a 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:

Enter 0 to exit.

9

Enter A number :121

121 is a 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:

Enter 0 to exit.

10

Enter A number : 10003

4 is sum of first and last digit of given numbr 10003.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:

Enter 0 to exit.

0

Inavalid Choice !

PS C:\Code>