**Assignment 3**

Loop

1. Print numbes from 1 to 10.

// Print numbes from 1 to 10.

#include <stdio.h>

void main()

{

    int num = 1;

    while (num <= 10)

    {

        printf("%d \n", num);

        num++;

    }

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

}

Output :

1

2

3

4

5

6

7

8

9

10

11 is exit value of num.

PS C:\Code>

1. Print table for the given number.

// Print table for the given number.

#include <stdio.h>

void main()

{

    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);

}

Output:

Enter a number.

45

45 \* 1 = 45

45 \* 2 = 90

45 \* 3 = 135

45 \* 4 = 180

45 \* 5 = 225

45 \* 6 = 270

45 \* 7 = 315

45 \* 8 = 360

45 \* 9 = 405

45 \* 10 = 450

Exit value of i = 11

PS C:\Code>

1. Calculate sum of numbers in the given range.

// Calculate sum of numbers in the given range.

#include <stdio.h>

void main()

{

    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);

}

Output:

Enter starting range :2

Enter Ending range : 15

Sum of numbers between 2 to 15 is = 119

PS C:\Code>

1. Check number is prime or not.

// Check number is prime or not.

#include <stdio.h>

void main()

{

    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);

}

Output :

Enter a number to cheack Prime or Not :13

num 13 is Prime.

Exit value of I is : 7

PS C:\Code>

1. Check number is armstrong or not?

#include <stdio.h>

void main() {

    int num, rem = 0, armN = 0;

    printf("Enter a number to check if it's an Armstrong number: ");

    scanf("%d", &num);

    int temp = num;

    while (temp > 0) {

        rem = temp % 10;

        armN += rem \* rem \* rem;

        temp /= 10;

    }

    if (armN == num) {

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

    } else {

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

    }

}

Output:

Enter a number to check if it's an Armstrong number: 145

Number 145 is not an Armstrong Number.

PS C:\Code>

1. Check number is perfect or not.

// Check number is perfect or not.

#include <stdio.h>

void main()

{

    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)

    {

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

    }else{

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

    }

}

Output:

Enter A number :145

145 is not perfect number

PS C:\Code>

1. Find factorial of number.

// Find factorial of number.

#include <stdio.h>

void main()

{

    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);

}

Output:

Enter A number :5

120 is factorial of entered number

PS C:\Code>

1. Check number is strong or not.

// Check number is strong or not.

#include <stdio.h>

void main()

{

    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);

    }

}

Output:

Enter a number : 6

6 is not a strong number.

PS C:\Code>

1. Check the given number is palindrome or not?

// Check the given number is palindrome or not?

#include <stdio.h>

void main()

{

    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);

    }

}

Output:

Enter A number :121

121 is a palindrome Number.

PS C:\Code>

1. Add the (first and last) digit of a given number?

// Add the (first and last) digit of a given number?

#include <stdio.h>

void main()

{

    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:

Enter A number : 12345

6 is sum of first and last digit of given numbr 12345.

PS C:\Code>

Assignment 3 using Function of 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;

    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");

    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. : ");

    scanf("%d", &num);

    int temp = num;

    while (temp >= 0)

    {

        rem = temp % 10;

        armN += rem \* rem \* rem;

        temp /= 10;

    }

    if (armN == num)

    {

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

    }

    else

    {

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

    }

}

void 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)

    {

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

    }

    else

    {

        printf("%d is not perfect number", 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:

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.

PS C:\Code>

.

.

.

.

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 : 4598

12 is sum of first and last digit of given numbr 4598.

PS C:\Code>