**Assignment 01 Using Type 1**

#include <stdio.h>

void tempConvert();

void areaAndPerimetere();

void sumOfDigitAndReverse();

void evenOdd();

void salary();

void marriageEligibility();

void circumference();

void areaofCircle();

void perimeter();

void areaofRect();

void main()

{

    int ch = 1;

    while (ch)

    {

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

        printf("1) Temp Convert: \n");

        printf("2) Area And Perimeter: \n");

        printf("3) Sum Of Digits and Reverse: \n");

        printf("4) Even Odd : \n");

        printf("5) Salary: \n");

        printf("6) Marriage Eligibility: \n");

        printf("0) Enter zero to exit: \n");

        scanf("%d", &ch);

        if (ch > 6 || ch <= 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            tempConvert();

        }

        else if (ch == 2)

        {

            areaAndPerimetere();

        }

        else if (ch == 3)

        {

            sumOfDigitAndReverse();

        }

        else if (ch == 4)

        {

            evenOdd();

        }

        else if (ch == 5)

        {

            salary();

        }

        else if (ch == 6)

        {

            marriageEligibility();

        }

    }

}

void tempConvert()

{

    int CL = 010;

    float fr = (9.0 / 5.0) \* CL + 32;

    printf("Temparature In Celcius is :%d \n", CL);

    printf("Temparature In Feranhite is :%f", fr);

}

void areaAndPerimetere()

{

    areaofCircle();

    printf("\n");

    areaofRect();

    printf("\n");

    perimeter();

    printf("\n");

    circumference();

}

void areaofCircle()

{

    const float PI = 3.14;

    float radious = 9.0;

    float areaOfCir = PI \* (radious \* radious);

    printf("%f is area of circle", areaOfCir);

}

void areaofRect()

{

    int L = 15, W = 45;

    int areaOfRect = L \* W;

    printf("%d is area of rect", areaOfRect);

}

void perimeter()

{

    int L = 15, W = 45;

    int areaOfRect = L \* W;

    int periMeter = 2 \* (L + W);

    printf("\n %d is perimeter of Reactangle. \n ", periMeter);

}

void circumference()

{

    const float PI = 3.14;

    float radious = 9.0;

    float Circumfer = 2.0 \* PI \* radious;

    printf("\n %f is circumference \n", Circumfer);

}

void sumOfDigitAndReverse()

{

    int num = 234;

    int sum = 0;

    int rev = 0;

    int r1 = num % 10;

    int q1 = num / 10;

    sum += r1;

    rev = (rev \* 10) + r1;

    r1 = q1 % 10;

    q1 /= 10;

    rev = (rev \* 10) + r1;

    sum += r1;

    r1 = q1 % 10;

    q1 /= 10;

    rev = (rev \* 10) + r1;

    sum += r1;

    printf("Sum of %d digits is: %d \n Also Reverse of num: %d", num, sum, rev);

}

void evenOdd()

{

    int num = 7;

    if (num % 2 == 0)

    {

        printf("Number is even \n");

    }

    else

    {

        printf("Number is odd \n");

    }

}

void salary()

{

    float baseSalary = 7777.0, totalSalary;

    float DA, TA, HRA;

    if (baseSalary <= 5000)

    {

        DA = 0.10 \* baseSalary;

        TA = 0.20 \* baseSalary;

        HRA = 0.25 \* baseSalary;

    }

    else

    {

        DA = 0.15 \* baseSalary;

        TA = 0.25 \* baseSalary;

        HRA = 0.30 \* baseSalary;

    }

    totalSalary = DA + TA + HRA + baseSalary;

    printf("%f is total salary.", totalSalary);

}

void marriageEligibility()

{

    int maleAge = 25, femaleAge = 29;

    char gender = 'f';

    if (gender == 'f' && femaleAge >= 18 || gender == 'm' && maleAge >= 21)

    {

        printf("Eligible to marry");

    }

    else

    {

        printf("Not Eligible to marry");

    }

}

Output :

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

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0) Enter zero to exit:

1

Temparature In Celcius is :8

Temparature In Feranhite is :46.400002

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0) Enter zero to exit:

2

254.340012 is area of circle

675 is area of rect

120 is perimeter of Reactangle.

56.520000 is circumference

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0) Enter zero to exit:

3

Sum of 234 digits is: 9

Also Reverse of num: 432

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0) Enter zero to exit:

4

Number is odd

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0) Enter zero to exit:

5

13220.900391 is total salary.

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0) Enter zero to exit:

6

Eligible to marry

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0) Enter zero to exit:

0

Inavalid Choice !

PS C:\Code>

**Assignment 02 Using Type 1**

#include <stdio.h>

void discount();

void greatestOfThree();

void UseChoice();

void discountStudent();

void calculator();

void addition();

void substraction();

void multiplication();

void division();

void evenOdd();

void salary();

void main()

{

    int ch = 1;

    while (ch)

    {

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

        printf("1) Discount: \n");

        printf("2) Greatest of Three: \n");

        printf("3) calculator: \n");

        printf("4) UserChoice : \n");

        printf("5) Student Discount: \n");

        printf("Enter 0 To exit");

        scanf("%d", &ch);

        if (ch > 5 || ch < 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            discount();

        }

        else if (ch == 2)

        {

            greatestOfThree();

        }

        else if (ch == 3)

        {

            calculator();

        }

        else if (ch == 4)

        {

            UseChoice();

        }

        else if (ch == 5)

        {

            discountStudent();

        }

        else if (ch == 0)

        {

            break;

        }

    }

}

void discount()

{

    float Op;

    printf("Enter Original Price broo:");

    scanf("%f", &Op);

    float finalPrice;

    if (Op <= 1000)

    {

        finalPrice = Op - (0.05 \* Op);

        printf("%.2f is final price with 5%% discount on original price %.2f ", finalPrice, Op);

    }

    else if (Op <= 5000)

    {

        finalPrice = Op - (0.10 \* Op);

        printf("%.2f is final price with 10%% discount on original price %.2f ", finalPrice, Op);

    }

    else if (Op <= 10000)

    {

        finalPrice = Op - (0.20 \* Op);

        printf("%.2f is final price with 20%% discount on original price %.2f  ", finalPrice, Op);

    }

    else if (Op > 10000)

    {

        finalPrice = Op - (0.25 \* Op);

        printf("%.2f is final price with 25%% discount on original price %.2f ", finalPrice, Op);

    }

}

void greatestOfThree()

{

    int A, B, C;

    printf("Enter Three Numbers : ");

    scanf("%d%d%d", &A, &B, &C);

    printf("\n");

    printf("%d is the greatest.", A > B && A > C ? A : B > C ? B

                                                             : C);

}

void calculator()

{

    printf("Enetr your Choice: \n");

    printf("A Addition \n");

    printf("S Substraction \n");

    printf("M Multiplication \n");

    printf("D Dividion \n");

    char op = getch();

    if (op == 'A')

    {

        printf("Chosen Operation is Addition.. \n ");

        addition();

    }

    else if (op == 'S')

    {

        printf("Chosen Operation is Substraction.. \n ");

        substraction();

    }

    else if (op == 'M')

    {

        printf("Chosen Operation is Multiplication.. \n ");

        multiplication();

    }

    else if (op == 'D')

    {

        printf("Chosen Operation is Division.. \n ");

        division();

    }

}

void addition()

{

    printf("Enter Two numbers : ");

    int A, B;

    scanf("%d%d", &A, &B);

    printf("\n %d is a Addition.", (A + B));

}

void division()

{

    printf("Enter Two numbers : ");

    int A, B;

    scanf("%d%d", &A, &B);

    if (A < B)

    {

        printf("\n %d is Division. \n", (B / A));

    }

    else

    {

        printf("\n %d is Division. \n", (A / B));

    }

}

void substraction()

{

    printf("Enter Two numbers : ");

    int A, B;

    scanf("%d%d", &A, &B);

    printf("\n %d is Substraction. \n", (B - A));

}

void multiplication()

{

    printf("Enter Two numbers : ");

    int A, B;

    scanf("%d%d", &A, &B);

    printf("\n %d is a Multiplication.", (A \* B));

}

void UseChoice()

{ // Choice to be taken from user when learn about Scan

    printf("\n Enter Your choice \n");

    printf("\n E for EvenOdd \n");

    printf("\n S for Slary Calculation \n");

    printf("\n G for Finding greatest of three. \n");

    char choice = getch();

    if (choice == 'E')

    {

        evenOdd();

    }

    else if (choice == 'S')

    {

        printf("Salary calculation \n");

       salary();

    }

    else if (choice == 'G')

    {

        printf("Gretest of Three Numbers \n");

        // get value of a b c from user

        printf("\n Enter 3 Numbers :");

        int A, B, C;

        scanf("%d%d%d", &A, &B, &C);

        printf("%d is the greatest.\n", A > B && A > C ? A : (B > C ? B : C));

    }

}

void discountStudent()

{

    float price, finalprice;

    printf("Enter Price of the product : \n");

    scanf("%f", &price);

    printf("Are you a Student ? (Y/N) \n");

    char std = getch();

    if (std == 'Y')

    {

        if (price >= 500)

        {

            finalprice = price - (price \* 0.20);

        }

        else

        {

            finalprice = price - (price \* 0.10);

        }

    }

    else if (std == 'N' && price > 600)

    {

        finalprice = price - (price \* 0.15);

    }

    else

    {

        finalprice = price;

    }

    printf("Final price is : %.2f", finalprice);

}

void evenOdd()

{

    int num;

    printf("Enter A number to check Even or Odd \n");

    scanf("%d", &num);

    if (num % 2 == 0)

    {

        printf("Number is Even \n");

    }

    else

    {

        printf("Number is odd.");

    }

}

void salary()

{

    float baseSalary, totalSalary;

    printf("Enter Base salary: \n");

    scanf("%f", &baseSalary);

    float DA, TA, HRA;

    if (baseSalary <= 5000)

    {

        DA = 0.10 \* baseSalary;

        TA = 0.20 \* baseSalary;

        HRA = 0.25 \* baseSalary;

    }

    else

    {

        DA = 0.15 \* baseSalary;

        TA = 0.25 \* baseSalary;

        HRA = 0.30 \* baseSalary;

    }

    printf("\n %.4f is Totalsalary.", DA + TA + HRA + baseSalary);

}

Output:

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

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit1

Enter Original Price broo:560

532.00 is final price with 5% discount on original price 560.00

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit2

Enter Three Numbers : 12

234

999

999 is the greatest.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit3

Enetr your Choice:

A Addition

S Substraction

M Multiplication

D Dividion

Chosen Operation is Addition..

Enter Two numbers : 12

33

45 is a Addition.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit4

Enter Your choice

E for EvenOdd

S for Slary Calculation

G for Finding greatest of three.

Enter A number to check Even or Odd

45

Number is odd.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit5

Enter Price of the product :

45666

Are you a Student ? (Y/N)

Final price is : 36532.80

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit0

PS C:\Code>

**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>

**Assignment 04 Using Type 1**

#include <stdio.h>

void armstrongInRange();

void primeInRange();

void perfectInRange();

void strongInRange();

void main()

{

    int ch = 1;

    while (ch)

    {

        printf("\n What do you want to do : \n1> Armstrong Numbers in range.\n2> Prime numbers in range \n");

        printf("3> Perfect Numbers in range. \n4> Strong numbers in range \nEnter Your choice (1,2,3,4) :");

        scanf("%d", &ch);

        if (ch == 1)

        {

            armstrongInRange();

        }

        else if (ch == 2)

        {

            primeInRange();

        }

        else if (ch == 3)

        {

            perfectInRange();

        }

        else if (ch == 4)

        {

            strongInRange();

        }

        else

        {

            printf("Invalid choice");

        }

    }

}

void armstrongInRange()

{

    int start, end;

    printf("\n Enter The range start :");

    scanf("%d", &start);

    printf("\n Enter The range end :");

    scanf("%d", &end);

    for (int i = start; i <= end; i++)

    {

        int rem, armN = 0;

        // printf("\n Inside For loop \n");

        int temp = i;

        while (temp)

        {

            // printf("Inside While \n");

            // printf("Temp : %d\n", temp);

            rem = temp % 10;

            armN += rem \* rem \* rem;

            temp /= 10;

        }

        if (armN == i)

        {

            printf("\n %d is Armstrong", i);

        }

        else

        {

            continue;

        }

    }

}

void primeInRange()

{

    int start, end;

    printf("Enter The range start :");

    scanf("%d", &start);

    printf("Enter The range end :");

    scanf("%d", &end);

    for (int i = start; i <= end; i++)

    {

        int j;

        if (i == 1 || i == 0)

        {

            continue;

        }

        for (j = 2; j <= (i / 2); j++)

        {

            if (i % j == 0)

            {

                break;

            }

        }

        if (j == (i / 2) + 1)

        {

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

        }

    }

}

void perfectInRange()

{

    int start, end;

    printf("Enter The range start :");

    scanf("%d", &start);

    printf("Enter The range end :");

    scanf("%d", &end);

    for (int i = start; i <= end; i++)

    {

        int sumOfDivisor = 0;

        for (int j = 1; j < i; j++)

        {

            if (i % j == 0)

            {

                sumOfDivisor += j;

            }

        }

        if (sumOfDivisor == i && i != 0)

        {

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

        }

    }

}

void strongInRange()

{

    int start, end;

    printf("Enter The range start :");

    scanf("%d", &start);

    printf("Enter The range end :");

    scanf("%d", &end);

    for (int i = start; i <= end; i++)

    {

        int sumOfFactorials = 0;

        int temp = i;

        while (temp > 0)

        {

            int digit = temp % 10;

            int factorial = 1;

            for (int j = 1; j <= digit; j++)

            {

                factorial \*= j;

            }

            sumOfFactorials += factorial;

            temp /= 10;

        }

        if (sumOfFactorials == i)

        {

            printf("Number %d is a strong number \n", i);

        }

    }

}

Output :

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

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :1

Enter The range start :100

Enter The range end :999

153 is Armstrong

370 is Armstrong

371 is Armstrong

407 is Armstrong

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :2

Enter The range start :1

Enter The range end :100

2 is Prime.

3 is Prime.

5 is Prime.

7 is Prime.

11 is Prime.

13 is Prime.

17 is Prime.

19 is Prime.

23 is Prime.

29 is Prime.

31 is Prime.

37 is Prime.

41 is Prime.

43 is Prime.

47 is Prime.

53 is Prime.

59 is Prime.

61 is Prime.

67 is Prime.

71 is Prime.

73 is Prime.

79 is Prime.

83 is Prime.

89 is Prime.

97 is Prime.

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :3

Enter The range start :1

Enter The range end :10000

Number 6 is perfect number

Number 28 is perfect number

Number 496 is perfect number

Number 8128 is perfect number

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :4

Enter The range start :1

Enter The range end :10000

Number 1 is a strong number

Number 2 is a strong number

Number 145 is a strong number

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :0

Invalid choice

PS C:\Code>

**Assignment 01 Using Type 2**

#include <stdio.h>

float tempConvert();

void areaAndPerimetere();

void sumOfDigitAndReverse();

int evenOdd();

float salary();

void marriageEligibility();

int sumOfDigits();

int reverseNum();

float circumference();

float areaofCircle();

int perimeter();

int areaofRect();

void main()

{

    int ch = 1;

    while (ch)

    {

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

        printf("1) Temp Convert: \n");

        printf("2) Area And Perimeter: \n");

        printf("3) Sum Of Digits and Reverse: \n");

        printf("4) Even Odd : \n");

        printf("5) Salary: \n");

        printf("6) Marriage Eligibility: \n");

        scanf("%d", &ch);

        if (ch > 6 || ch <= 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            printf("Temparature In Feranhite is :%.2f", tempConvert());

        }

        else if (ch == 2)

        {

            areaAndPerimetere();

        }

        else if (ch == 3)

        {

            sumOfDigitAndReverse();

        }

        else if (ch == 4)

        {

            if (evenOdd())

            {

                printf("Number is Even \n");

            }

            else

            {

                printf("Number is odd.");

            }

        }

        else if (ch == 5)

        {

            printf("Total Salary is : %f ", salary());

        }

        else if (ch == 6)

        {

            marriageEligibility();

        }

    }

}

float tempConvert()

{

    int CL;

    printf("Enter Teparature in Celcious :");

    scanf("%d", &CL);

    float fr = (9.0 / 5.0) \* CL + 32;

    printf("Temparature In Celcius is :%d \n", CL);

    return fr;

}

void areaAndPerimetere()

{

    printf("What do you want to do brooo. \n");

    int ch;

    printf("1> Area of Circle\n");

    printf("2> Area of Reactangle\n");

    printf("3> Perimeter of Circle \n");

    printf("4> Circumference of Circle\n");

    scanf("%d", &ch);

    if (ch == 0 || ch > 4 || ch < 0)

    {

        printf("Invalid Choice broooo!!!");

    }

    else if (ch == 1)

    {

        printf("%.2f is area of Circle...! \n", areaofCircle());

    }

    else if (ch == 2)

    {

        printf("\n");

        printf("%d is area of Rectangle...! \n", areaofRect());

    }

    else if (ch == 3)

    {

        printf("\n");

        printf("%d is Perimeter of Rectangle..! \n", perimeter());

    }

    else if (ch == 4)

    {

        printf("\n");

        printf("%.2f is Circumference of circle..! \n", circumference());

    }

}

float areaofCircle()

{

    const float PI = 3.14;

    float radious;

    printf("\n Enter Radious Of Circle : \n");

    scanf("%f", &radious);

    float areaOfCir = PI \* (radious \* radious);

    return areaOfCir;

}

int areaofRect()

{

    int L, W;

    printf("\n Enter Length and Width of Reactangle : \n");

    scanf("%d%d", &L, &W);

    int areaOfRect = L \* W;

    return areaOfRect;

}

int perimeter()

{

    int L, W;

    printf("\n Enter Length and Width of Reactangle : \n");

    scanf("%d%d", &L, &W);

    int periMeter = 2 \* (L + W);

    return periMeter;

}

float circumference()

{

    const float PI = 3.14;

    float radious;

    printf("\n Enter Radious Of Circle : \n");

    scanf("%f", &radious);

    float Circumfer = 2.0 \* PI \* radious;

    return Circumfer;

}

void sumOfDigitAndReverse()

{

    printf("What do you Whant to do : \n");

    printf("1> Sum Of Digits of number: \n");

    printf("2> Reverse the number : \n");

    int ch;

    scanf("%d", &ch);

    if (ch == 1)

    {

        printf(" \n %d is Sum of digits.\n", sumOfDigits());

    }

    else if (ch == 2)

    {

        printf(" \n %d is Reverse Number \n", reverseNum());

    }

    else

    {

        printf("Invalid Choice brooo!! \n");

    }

}

int sumOfDigits()

{

    printf("Enter a Number : \n");

    int num, sum = 0;

    scanf("%d", &num);

    for (num; num > 0; num /= 10)

    {

        sum += (num % 10);

    }

    return sum;

}

int reverseNum()

{

    printf("Enter a Number : \n");

    int num, rev = 0;

    scanf("%d", &num);

    for (num; num > 0; num /= 10)

    {

        rev = (rev \* 10) + (num % 10);

    }

    return rev;

}

int evenOdd()

{

    int num;

    printf("\n Enter A Number : \n ");

    scanf("%d", &num);

    if (num % 2 == 0)

    {

        return 1;

    }

    else

    {

        return 0;

    }

}

float salary()

{

    float baseSalary, totalSalary;

    printf("\n Enter Base Salary :  \n");

    scanf("%f", &baseSalary);

    float DA, TA, HRA;

    if (baseSalary <= 5000)

    {

        DA = 0.10 \* baseSalary;

        TA = 0.20 \* baseSalary;

        HRA = 0.25 \* baseSalary;

    }

    else

    {

        DA = 0.15 \* baseSalary;

        TA = 0.25 \* baseSalary;

        HRA = 0.30 \* baseSalary;

    }

    totalSalary = DA + TA + HRA + baseSalary;

    return totalSalary;

}

void marriageEligibility()

{

    int maleAge, femaleAge;

    char gender;

    printf("\n Enter Your Gender (f/m): ");

    fflush(stdin);

    scanf("%c", &gender);

    if (gender == 'm')

    {

        printf("\n Enter age of male: \n");

        scanf("%d", &maleAge);

    }

    else if (gender == 'f')

    {

        printf("\n Enter age of Female: \n");

        scanf("%d", &femaleAge);

    }

    if (gender == 'f' && femaleAge >= 18 || gender == 'm' && maleAge >= 21)

    {

        printf("Eligible to marry");

    }

    else

    {

        printf("Not Eligible to marry");

    }

}

Output :

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

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

1

Enter Teparature in Celcious :23

Temparature In Celcius is :23

Temparature In Feranhite is :73.40

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

2

What do you want to do brooo.

1> Area of Circle

2> Area of Reactangle

3> Perimeter of Circle

4> Circumference of Circle

1

Enter Radious Of Circle :

23

1661.06 is area of Circle...!

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

3

What do you Whant to do :

1> Sum Of Digits of number:

2> Reverse the number :

1

Enter a Number :

123456

21 is Sum of digits.

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

4

Enter A Number :

23

Number is odd.

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

5

Enter Base Salary :

12000

Total Salary is : 20400.000000

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

6

Enter Your Gender (f/m): m

Enter age of male:

26

Eligible to marry

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0

Inavalid Choice !

PS C:\Code>

**Assignment 02 Using Type 2**

#include <stdio.h>

void discount();

void greatestOfThree();

void calculator();

void UseChoice();

void discountStudent();

int addition();

int substraction();

int multiplication();

float division();

int evenOdd();

float salary();

void main()

{

    int ch = 1;

    while (ch)

    {

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

        printf("1) Discount: \n");

        printf("2) Greatest of Three: \n");

        printf("3) calculator: \n");

        printf("4) UserChoice : \n");

        printf("5) Student Discount: \n");

        printf("Enter 0 To exit");

        scanf("%d", &ch);

        if (ch > 5 || ch < 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            discount();

        }

        else if (ch == 2)

        {

            greatestOfThree();

        }

        else if (ch == 3)

        {

            calculator();

        }

        else if (ch == 4)

        {

            UseChoice();

        }

        else if (ch == 5)

        {

            discountStudent();

        }

        else if (ch == 0)

        {

            break;

        }

    }

}

void discount()

{

    float Op;

    printf("Enter Original Price broo:");

    scanf("%f", &Op);

    float finalPrice;

    if (Op <= 1000)

    {

        finalPrice = Op - (0.05 \* Op);

        printf("%.2f is final price with 5%% discount on original price %.2f ", finalPrice, Op);

    }

    else if (Op <= 5000)

    {

        finalPrice = Op - (0.10 \* Op);

        printf("%.2f is final price with 10%% discount on original price %.2f ", finalPrice, Op);

    }

    else if (Op <= 10000)

    {

        finalPrice = Op - (0.20 \* Op);

        printf("%.2f is final price with 20%% discount on original price %.2f  ", finalPrice, Op);

    }

    else if (Op > 10000)

    {

        finalPrice = Op - (0.25 \* Op);

        printf("%.2f is final price with 25%% discount on original price %.2f ", finalPrice, Op);

    }

}

void greatestOfThree()

{

    int A, B, C;

    printf("Enter Three Numbers : ");

    scanf("%d%d%d", &A, &B, &C);

    // if (A > B && A > C)

    // {

    //     printf("%d A is greatest.", A);

    // }

    // else if (B > C)

    // {

    //     printf("%d B is greatest.", B);

    // }

    // else

    // {

    //     printf("%d C is greatest.", C);

    // }

    // using Ternary operator

    printf("\n");

    printf("%d is the greatest.", A > B && A > C ? A : B > C ? B

                                                             : C);

}

void calculator()

{

    printf("Enetr your Choice: \n");

    printf("A Addition \n");

    printf("S Substraction \n");

    printf("M Multiplication \n");

    printf("D Dividion \n");

    char op = getch();

    // printf("%c", op);

    if (op == 'A')

    {

        printf("Chosen Operation is Addition.. \n ");

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

    }

    else if (op == 'S')

    {

        printf("Chosen Operation is Substraction.. \n ");

        printf("%d is Substraction.", substraction());

    }

    else if (op == 'M')

    {

        printf("Chosen Operation is Multiplication.. \n ");

        printf("%d is Multiplication.", multiplication());

    }

    else if (op == 'D')

    {

        printf("Chosen Operation is Division.. \n ");

        printf("%.2f is result of division.", division());

    }

}

int addition()

{

    printf("Enter Two numbers : ");

    int A, B;

    scanf("%d%d", &A, &B);

    return (A + B);

}

float division()

{

    printf("Enter Two numbers : ");

    int A, B;

    scanf("%d%d", &A, &B);

    if (A < B)

    {

        return (B / A);

    }

    else

    {

        return (A / B);

    }

}

int substraction()

{

    printf("Enter Two numbers : ");

    int A, B;

    scanf("%d%d", &A, &B);

    if (A < B)

    {

        return (B - A);

    }

    else

    {

        return (A - B);

    }

}

int multiplication()

{

    printf("Enter Two numbers : ");

    int A, B;

    scanf("%d%d", &A, &B);

    return (A \* B);

}

void UseChoice()

{ // Choice to be taken from user when learn about Scan

    printf("\n Enter Your choice \n");

    printf("\n E for EvenOdd \n");

    printf("\n S for Slary Calculation \n");

    printf("\n G for Finding greatest of three. \n");

    char choice = getch();

    if (choice == 'E')

    {

        if (evenOdd())

        {

            printf("Number is Even \n");

        }

        else

        {

            printf("Number is odd.");

        }

    }

    else if (choice == 'S')

    {

        printf("Salary calculation \n");

        printf("Total Salary is : %f \n", salary());

    }

    else if (choice == 'G')

    {

        printf("Gretest of Three Numbers \n");

        // get value of a b c from user

        printf("\n Enter 3 Numbers :");

        int A, B, C;

        scanf("%d%d%d", &A, &B, &C);

        printf("%d is the greatest.\n", A > B && A > C ? A : (B > C ? B : C));

    }

}

void discountStudent()

{

    float price, finalprice;

    printf("Enter Price of the product : \n");

    scanf("%f", &price);

    printf("Are you a Student ? (Y/N) \n");

    char std = getch();

    if (std == 'Y')

    {

        if (price >= 500)

        {

            finalprice = price - (price \* 0.20);

        }

        else

        {

            finalprice = price - (price \* 0.10);

        }

    }

    else if (std == 'N' && price > 600)

    {

        finalprice = price - (price \* 0.15);

    }

    else

    {

        finalprice = price;

    }

    printf("Final price is : %.2f", finalprice);

}

int evenOdd()

{

    int num;

    printf("Enter A number to check Even or Odd \n");

    scanf("%d", &num);

    if (num % 2 == 0)

    {

        return 1;

    }

    else

    {

        return 0;

    }

}

float salary()

{

    float baseSalary, totalSalary;

    printf("Enter Base salary: \n");

    scanf("%f", &baseSalary);

    float DA, TA, HRA;

    if (baseSalary <= 5000)

    {

        DA = 0.10 \* baseSalary;

        TA = 0.20 \* baseSalary;

        HRA = 0.25 \* baseSalary;

    }

    else

    {

        DA = 0.15 \* baseSalary;

        TA = 0.25 \* baseSalary;

        HRA = 0.30 \* baseSalary;

    }

    totalSalary = DA + TA + HRA + baseSalary;

    return totalSalary;

}

Output :

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

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit1

Enter Original Price broo:1200

1080.00 is final price with 10% discount on original price 1200.00

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit2

Enter Three Numbers : 12

45

777

777 is the greatest.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit3

Enetr your Choice:

A Addition

S Substraction

M Multiplication

D Dividion

Chosen Operation is Addition..

Enter Two numbers :

12

22

34 is addition.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit4

Enter Your choice

E for EvenOdd

S for Slary Calculation

G for Finding greatest of three.

Enter A number to check Even or Odd

23

Number is odd.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit5

Enter Price of the product :

452

Are you a Student ? (Y/N)

Final price is : 406.80

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit0

PS C:\Code>

**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>

**Assignment 01 Using Type 3**

#include <stdio.h>

void tempConvert(int);

void evenOdd(int);

void areaAndPerimetere();

void circumference(float);

void areaofCircle(float);

void areaofRect(int, int);

void perimeter(int, int);

void sumOfDigitAndReverse();

void sumOfDigits(int);

void reverseNum(int);

void salary(float);

void marriageEligibility();

void main()

{

    int ch = 1;

    while (ch)

    {

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

        printf("1) Temp Convert: \n");

        printf("2) Area And Perimeter: \n");

        printf("3) Sum Of Digits and Reverse: \n");

        printf("4) Even Odd : \n");

        printf("5) Salary: \n");

        printf("6) Marriage Eligibility: \n");

        scanf("%d", &ch);

        if (ch > 6 || ch <= 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            int cel;

            printf("Enter Teperature in Celcious.");

            scanf("%d", &cel);

            tempConvert(cel);

        }

        else if (ch == 2)

        {

            areaAndPerimetere();

        }

        else if (ch == 3)

        {

            sumOfDigitAndReverse();

        }

        else if (ch == 4)

        {

            int num;

            printf("Enter A Number : \n");

            scanf("%d", &num);

            evenOdd(num);

        }

        else if (ch == 5)

        {

            float baseSalary, totalSalary;

            printf("\n Enter Base Salary :  \n");

            scanf("%f", &baseSalary);

            salary(baseSalary);

        }

        else if (ch == 6)

        {

            marriageEligibility();

        }

    }

}

void tempConvert(int CL)

{

    float fr = (9.0 / 5.0) \* CL + 32;

    printf("Temparature In feranhite is :%.2f \n", fr);

}

void areaAndPerimetere()

{

    printf("What do you want to do brooo. \n");

    int ch;

    printf("1> Area of Circle\n");

    printf("2> Area of Reactangle\n");

    printf("3> Perimeter of Reactangle \n");

    printf("4> Circumference of Circle\n");

    scanf("%d", &ch);

    if (ch == 0 || ch > 4 || ch < 0)

    {

        printf("Invalid Choice broooo!!!");

    }

    else if (ch == 1)

    {

        float rad;

        printf("Enter Radious of Circle");

        scanf("%f", &rad);

        areaofCircle(rad);

    }

    else if (ch == 2)

    {

        printf("\n");

        int L, W;

        printf("\n Enter Length and Width of Reactangle : \n");

        scanf("%d%d", &L, &W);

        areaofRect(L, W);

    }

    else if (ch == 3)

    {

    }

    else if (ch == 4)

    {

        float rad;

        printf("Enter Radious of Circle");

        scanf("%f", &rad);

        circumference(rad);

    }

}

void areaofCircle(float rad)

{

    const float PI = 3.14;

    float areaOfCir = PI \* (rad \* rad);

    printf("\n %.2f is area of Circle. \n", areaOfCir);

}

void circumference(float rad)

{

    const float PI = 3.14;

    float Circumfer = 2.0 \* PI \* rad;

    printf("\n %f is circumference of the circle.", Circumfer);

}

void areaofRect(int L, int W)

{

    printf("%d is area of Rectangle: ", L \* W);

}

void perimeter(int L, int W)

{

    printf("\n %d is perimeter of Rectangle. \n", (2 \* (L + W)));

}

void sumOfDigitAndReverse()

{

    printf("What do you Whant to do : \n");

    printf("1> Sum Of Digits of number: \n");

    printf("2> Reverse the number : \n");

    int ch, num;

    scanf("%d", &ch);

    printf("Enter a Number : \n");

    scanf("%d", &num);

    if (ch == 1)

    {

        sumOfDigits(num);

    }

    else if (ch == 2)

    {

        reverseNum(num);

    }

    else

    {

        printf("Invalid Choice brooo!! \n");

    }

}

void sumOfDigits(int num)

{

    int sum = 0;

    for (num; num > 0; num /= 10)

    {

        sum += (num % 10);

    }

    printf("\n %d is A Sum Of digits of number. \n", sum);

}

void reverseNum(int num)

{

    int rev = 0;

    for (num; num > 0; num /= 10)

    {

        rev = (rev \* 10) + (num % 10);

    }

    printf("\n %d is Reverse Number. \n", rev);

}

void evenOdd(int num)

{

    if (num % 2 == 0)

    {

        printf("\n Number is Even! \n");

    }

    else

    {

        printf("\n Number is odd! \n");

    }

}

void salary(float baseSalary)

{

    float DA, TA, HRA;

    if (baseSalary <= 5000)

    {

        DA = 0.10 \* baseSalary;

        TA = 0.20 \* baseSalary;

        HRA = 0.25 \* baseSalary;

    }

    else

    {

        DA = 0.15 \* baseSalary;

        TA = 0.25 \* baseSalary;

        HRA = 0.30 \* baseSalary;

    }

    printf("\n %.4f is your Total Salary \n", (DA + TA + HRA + baseSalary));

}

void marriageEligibility()

{

    int maleAge, femaleAge;

    char gender;

    printf("\n Enter Your Gender (f/m): ");

    fflush(stdin);

    scanf("%c", &gender);

    if (gender == 'm')

    {

        printf("\n Enter age of male: \n");

        scanf("%d", &maleAge);

    }

    else if (gender == 'f')

    {

        printf("\n Enter age of Female: \n");

        scanf("%d", &femaleAge);

    }

    if (gender == 'f' && femaleAge >= 18 || gender == 'm' && maleAge >= 21)

    {

        printf("Eligible to marry");

    }

    else

    {

        printf("Not Eligible to marry");

    }

}

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

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

1

Enter Teperature in Celcious.23

Temparature In feranhite is :73.40

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

2

What do you want to do brooo.

1> Area of Circle

2> Area of Reactangle

3> Perimeter of Reactangle

4> Circumference of Circle

2

Enter Length and Width of Reactangle :

12

2

24 is area of Rectangle:

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

3

What do you Whant to do :

1> Sum Of Digits of number:

2> Reverse the number :

2

Enter a Number :

987654321

123456789 is Reverse Number.

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

4

Enter A Number :

12

Number is Even!

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

5

Enter Base Salary :

55550

94435.0000 is your Total Salary

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

6

Enter Your Gender (f/m): f

Enter age of Female:

29

Eligible to marry

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0

Inavalid Choice !

PS C:\Code>

**Assignment 02 Using Type 3**

#include <stdio.h>

void discount(float);

void greatestOfThree();

void calculator();

void addition(int, int);

void UseChoice();

void substraction(int, int);

void multiplication(int, int);

void division(int, int);

void greatOfThree(int, int, int);

void discountStudent(float);

void evenOdd(int);

void salary(float);

void main()

{

    int ch = 1;

    while (ch)

    {

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

        printf("1) Discount: \n");

        printf("2) Greatest of Three: \n");

        printf("3) calculator: \n");

        printf("4) UserChoice : \n");

        printf("5) Student Discount: \n");

        printf("Enter 0 To exit");

        scanf("%d", &ch);

        if (ch > 5 || ch < 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            float Op;

            printf("Enter Original Price broo:");

            scanf("%f", &Op);

            discount(Op);

        }

        else if (ch == 2)

        {

            greatestOfThree();

        }

        else if (ch == 3)

        {

            calculator();

        }

        else if (ch == 4)

        {

            UseChoice();

        }

        else if (ch == 5)

        {

            float price, finalprice;

            printf("Enter Price of the product : \n");

            scanf("%f", &price);

            discountStudent(price);

        }

        else if (ch == 0)

        {

            break;

        }

    }

}

void discount(float Op)

{

    float finalPrice;

    if (Op <= 1000)

    {

        finalPrice = Op - (0.05 \* Op);

        printf("%.2f is final price with 5%% discount on original price %.2f ", finalPrice, Op);

    }

    else if (Op <= 5000)

    {

        finalPrice = Op - (0.10 \* Op);

        printf("%.2f is final price with 10%% discount on original price %.2f ", finalPrice, Op);

    }

    else if (Op <= 10000)

    {

        finalPrice = Op - (0.20 \* Op);

        printf("%.2f is final price with 20%% discount on original price %.2f  ", finalPrice, Op);

    }

    else if (Op > 10000)

    {

        finalPrice = Op - (0.25 \* Op);

        printf("%.2f is final price with 25%% discount on original price %.2f ", finalPrice, Op);

    }

}

void greatestOfThree()

{

    int A, B, C;

    printf("Enter Three Numbers : ");

    scanf("%d%d%d", &A, &B, &C);

    printf("\n");

    printf("%d is the greatest.", A > B && A > C ? A : B > C ? B

                                                             : C);

}

void calculator()

{

    printf("Enetr your Choice: \n");

    printf("A Addition \n");

    printf("S Substraction \n");

    printf("M Multiplication \n");

    printf("D Dividion \n");

    char op = getch();

    int A, B;

    if (op == 'A')

    {

        printf("Chosen Operation is Addition.. \n ");

        printf("Enter Two numbers : ");

        scanf("%d%d", &A, &B);

        addition(A, B);

    }

    else if (op == 'S')

    {

        printf("Chosen Operation is Substraction.. \n ");

        printf("Enter Two numbers : ");

        scanf("%d%d", &A, &B);

        substraction(A, B);

    }

    else if (op == 'M')

    {

        printf("Chosen Operation is Multiplication.. \n ");

        printf("Enter Two numbers : ");

        scanf("%d%d", &A, &B);

        multiplication(A, B);

    }

    else if (op == 'D')

    {

        printf("Enter Two numbers : ");

        scanf("%d%d", &A, &B);

        printf("Chosen Operation is Division.. \n ");

        division(A, B);

    }

}

void addition(int A, int B)

{

    printf("\n %d is a Addition.", (A + B));

}

void division(int A, int B)

{

    if (A < B)

    {

        printf("\n %d is Division. \n", (B / A));

    }

    else

    {

        printf("\n %d is Division. \n", (A / B));

    }

}

void substraction(int A, int B)

{

    printf("\n %d is Substraction. \n", (B - A));

}

void multiplication(int A, int B)

{

    printf("\n %d is a Multiplication.", (A \* B));

}

void UseChoice()

{ // Choice to be taken from user when learn about Scan

    printf("\n Enter Your choice \n");

    printf("\n E for EvenOdd \n");

    printf("\n S for Slary Calculation \n");

    printf("\n G for Finding greatest of three. \n");

    char choice = getch();

    if (choice == 'E')

    {

        int num;

        printf("Enter A number to check Even or Odd \n");

        scanf("%d", &num);

        evenOdd(num);

    }

    else if (choice == 'S')

    {

        printf("Salary calculation \n");

        float baseSalary;

        printf("Enter Base salary: \n");

        scanf("%f", &baseSalary);

        salary(baseSalary);

    }

    else if (choice == 'G')

    {

        printf("Gretest of Three Numbers \n");

        // get value of a b c from user

        printf("\n Enter 3 Numbers :");

        int A, B, C;

        scanf("%d%d%d", &A, &B, &C);

        greatestOfThree(A, B, C);

    }

}

void greatOfThree(int A, int B, int C)

{

    printf("%d is the greatest.\n", A > B && A > C ? A : (B > C ? B : C));

}

void discountStudent(float price)

{

    float finalprice;

    printf("Are you a Student ? (Y/N) \n");

    char std = getch();

    if (std == 'Y')

    {

        if (price >= 500)

        {

            finalprice = price - (price \* 0.20);

        }

        else

        {

            finalprice = price - (price \* 0.10);

        }

    }

    else if (std == 'N' && price > 600)

    {

        finalprice = price - (price \* 0.15);

    }

    else

    {

        finalprice = price;

    }

    printf("Final price is : %.2f", finalprice);

}

void evenOdd(int num)

{

    if (num % 2 == 0)

    {

        printf("Number is Even \n");

    }

    else

    {

        printf("Number is odd.");

    }

}

void salary(float baseSalary)

{

    float DA, TA, HRA;

    if (baseSalary <= 5000)

    {

        DA = 0.10 \* baseSalary;

        TA = 0.20 \* baseSalary;

        HRA = 0.25 \* baseSalary;

    }

    else

    {

        DA = 0.15 \* baseSalary;

        TA = 0.25 \* baseSalary;

        HRA = 0.30 \* baseSalary;

    }

    printf("\n %.4f is Totalsalary.", DA + TA + HRA + baseSalary);

}

Output:

PS C:\Code> & 'c:\Users\bhagv\.vscode\extensions\ms-vscode.cpptools-1.21.6-win32-x64\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-q3yo1oqb.c3r' '--stdout=Microsoft-MIEngine-Out-yqvtcxvs.3yg' '--stderr=Microsoft-MIEngine-Error-oiivdsjs.ebp' '--pid=Microsoft-MIEngine-Pid-dhbojsea.ntc' '--dbgExe=C:\TDM-GCC-64\bin\gdb.exe' '--interpreter=mi'

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit1

Enter Original Price broo:1230

1107.00 is final price with 10% discount on original price 1230.00

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit2

Enter Three Numbers : 23

45

11

45 is the greatest.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit3

Enetr your Choice:

A Addition

S Substraction

M Multiplication

D Dividion

Chosen Operation is Addition..

Enter Two numbers : 12

34

46 is a Addition.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit4

Enter Your choice

E for EvenOdd

S for Slary Calculation

G for Finding greatest of three.

Enter A number to check Even or Odd

4

Number is Even

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit5

Enter Price of the product :

12334

Are you a Student ? (Y/N)

Final price is : 9867.20

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit0

PS C:\Code>

**Assignment 03 Using Type 3**

#include <stdio.h>

void OneToTen(int);

void tableOfNum(int);

void sumOfNumdinrange(int, int);

void isPrime(int);

void armstrong(int);

void perfect(int);

void factorial(int);

void strong(int);

void palindrome(int);

void sumOfFirstAndLastDigit(int);

void main()

{

    int ch = 1;

    int num = 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");

        printf("0) Exit : \n");

        scanf("%d", &ch);

        if (ch > 10 || ch <= 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            OneToTen(num);

        }

        else if (ch == 2)

        {

            printf("Enter a number. \n");

            scanf("%d", &num);

            tableOfNum(num);

        }

        else if (ch == 3)

        {

            int start, end;

            printf("Enter starting range :");

            scanf("%d", &start);

            // printf("\n");

            printf("Enter Ending range : ");

            scanf("%d", &end);

            sumOfNumdinrange(start, end);

        }

        else if (ch == 4)

        {

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

            scanf("%d", &num);

            isPrime(num);

        }

        else if (ch == 5)

        {

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

            scanf("%d", &num);

            armstrong(num);

        }

        else if (ch == 6)

        {

            printf("Enter A number :");

            scanf("%d", &num);

            perfect(num);

        }

        else if (ch == 7)

        {

            printf("Enter A number :");

            scanf("%d", &num);

            factorial(num);

        }

        else if (ch == 8)

        {

            printf("Enter a number : ");

            scanf("%d", &num);

            strong(num);

        }

        else if (ch == 9)

        {

            printf("Enter a number : ");

            scanf("%d", &num);

            palindrome(num);

        }

        else if (ch == 10)

        {

            printf("Enter A number : ");

            scanf("%d", &num);

            sumOfFirstAndLastDigit(num);

        }

    }

}

void OneToTen(num)

{

    while (num <= 10)

    {

        printf("%d \n", num);

        num++;

    }

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

}

void tableOfNum(int 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, int 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(int num)

{

    int i = 2, cnt = 0;

    while (i <= num / 2)

    {

        if (num % i == 0)

        {

            cnt = 1;

            break;

        }

        i++;

    }

    (cnt > 0 || num == 1) ? printf("num %d is not Prime. \n", num) : printf("num %d is  Prime. \n", num);

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

}

void armstrong(int num)

{

    int rem = 0;

    int armN = 0;

    int temp = num;

    while (temp)

    {

        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(int num)

{

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

    while (i < num)

    {

        if (num % i == 0)

        {

            sumOfDivisor += i;

            cnt++;

        }

        i++;

    }

    (sumOfDivisor == num) ? printf("Number %d is perfect number", num) : printf("%d is not perfect number", num);

}

void factorial(int num)

{

    int Fact = 1;

    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(int 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(int num)

{

    int temp = num;

    int rev = 0;

    while (temp)

    {

        // printf("\n %d temp ", temp);

        int rem = temp % 10;

        rev = (rev \* 10) + rem;

        temp /= 10;

    }

    (rev == num) ? printf("%d is a palindrome Number.", num) : printf("%d Is not a palindrome number", num);

}

void sumOfFirstAndLastDigit(int 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\.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:

0) 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:

0) Exit :

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:

0) Exit :

3

Enter starting range :1

Enter Ending range : 6

Sum of numbers between 1 to 6 is = 21

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) Exit :

4

Enter a number to cheack Prime or Not :33

num 33 is not Prime.

Exit value of I is : 3

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) Exit :

5

Enter A number to cheack armstrong. : 213

Number 213 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:

0) 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:

0) Exit :

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:

0) Exit :

8

Enter a number : 6

6 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:

0) 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:

0) Exit :

10

Enter A number : 123

4 is sum of first and last digit of given numbr 123.

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) Exit :

0

Inavalid Choice !

PS C:\Code>

**Assignment 04 Using Type 3**

#include <stdio.h>

void armstrongInRange(int, int);

void primeInRange(int, int);

void perfectInRange(int, int);

void strongInRange(int, int);

void main()

{

    int ch = 1;

    while (ch)

    {

        int start, end;

        printf("\n What do you want to do : \n1> Armstrong Numbers in range.\n2> Prime numbers in range \n");

        printf("3> Perfect Numbers in range. \n4> Strong numbers in range \nEnter Your choice (1,2,3,4) :");

        scanf("%d", &ch);

        if (ch == 1)

        {

            printf("\n Enter The range start 3 digit  :");

            scanf("%d", &start);

            printf("\n Enter The range end 3 digit:");

            scanf("%d", &end);

            armstrongInRange(start, end);

        }

        else if (ch == 2)

        {

            printf("\n Enter The range start :");

            scanf("%d", &start);

            printf("\n Enter The range end :");

            scanf("%d", &end);

            primeInRange(start, end);

        }

        else if (ch == 3)

        {

            printf("\n Enter The range start :");

            scanf("%d", &start);

            printf("\n Enter The range end :");

            scanf("%d", &end);

            perfectInRange(start, end);

        }

        else if (ch == 4)

        {

            printf("\n Enter The range start :");

            scanf("%d", &start);

            printf("\n Enter The range end :");

            scanf("%d", &end);

            strongInRange(start, end);

        }

        else

        {

            printf("Invalid choice");

        }

    }

}

void armstrongInRange(int start, int end)

{

    for (int i = start; i <= end; i++)

    {

        int rem, armN = 0;

        // printf("\n Inside For loop \n");

        int temp = i;

        while (temp)

        {

            // printf("Inside While \n");

            // printf("Temp : %d\n", temp);

            rem = temp % 10;

            armN += rem \* rem \* rem;

            temp /= 10;

        }

        if (armN == i)

        {

            printf("\n %d is Armstrong", i);

        }

        else

        {

            continue;

        }

    }

}

void primeInRange(int start, int end)

{

    for (int i = start; i <= end; i++)

    {

        int j;

        if (i == 1 || i == 0)

        {

            continue;

        }

        for (j = 2; j <= (i / 2); j++)

        {

            if (i % j == 0)

            {

                break;

            }

        }

        if (j == (i / 2) + 1)

        {

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

        }

    }

}

void perfectInRange(int start, int end)

{

    for (int i = start; i <= end; i++)

    {

        int sumOfDivisor = 0;

        for (int j = 1; j < i; j++)

        {

            if (i % j == 0)

            {

                sumOfDivisor += j;

            }

        }

        if (sumOfDivisor == i && i != 0)

        {

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

        }

    }

}

void strongInRange(int start, int end)

{

    for (int i = start; i <= end; i++)

    {

        int sumOfFactorials = 0;

        int temp = i;

        while (temp > 0)

        {

            int digit = temp % 10;

            int factorial = 1;

            for (int j = 1; j <= digit; j++)

            {

                factorial \*= j;

            }

            sumOfFactorials += factorial;

            temp /= 10;

        }

        if (sumOfFactorials == i)

        {

            printf("Number %d is a strong number \n", i);

        }

    }

}

Output:

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

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :1

Enter The range start 3 digit :2

Enter The range end 3 digit:334

153 is Armstrong

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :2

Enter The range start :1

Enter The range end :99

2 is Prime.

3 is Prime.

5 is Prime.

7 is Prime.

11 is Prime.

13 is Prime.

17 is Prime.

19 is Prime.

23 is Prime.

29 is Prime.

31 is Prime.

37 is Prime.

41 is Prime.

43 is Prime.

47 is Prime.

53 is Prime.

59 is Prime.

61 is Prime.

67 is Prime.

71 is Prime.

73 is Prime.

79 is Prime.

83 is Prime.

89 is Prime.

97 is Prime.

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :3

Enter The range start :1

Enter The range end :999

Number 6 is perfect number

Number 28 is perfect number

Number 496 is perfect number

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :4

Enter The range start :1

Enter The range end :999

Number 1 is a strong number

Number 2 is a strong number

Number 145 is a strong number

What do you want to do :

1> Armstrong Numbers in range.

2> Prime numbers in range

3> Perfect Numbers in range.

4> Strong numbers in range

Enter Your choice (1,2,3,4) :0

Invalid choice

PS C:\Code>

**Assignment 01 Type 4**

#include <stdio.h>

float tempConvert(int);

int evenOdd(int);

void areaAndPerimetere();

float circumference(float);

float areaofCircle(int);

int perimeter(int, int);

int areaofRect(int, int);

void sumOfDigitAndReverse();

int sumOfDigits(int);

int reverseNum(int);

float salary(float);

int marriageEligibility(int, char);

void main()

{

    int ch = 1;

    while (ch)

    {

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

        printf("1) Temp Convert: \n");

        printf("2) Area And Perimeter: \n");

        printf("3) Sum Of Digits and Reverse: \n");

        printf("4) Even Odd : \n");

        printf("5) Salary: \n");

        printf("6) Marriage Eligibility: \n");

        scanf("%d", &ch);

        if (ch > 6 || ch <= 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            int cel;

            printf("Enter Teperature in Celcious.");

            scanf("%d", &cel);

            printf("Temparature In Feranhite is :%.2f", tempConvert(cel));

        }

        else if (ch == 2)

        {

            areaAndPerimetere();

        }

        else if (ch == 3)

        {

            sumOfDigitAndReverse();

        }

        else if (ch == 4)

        {

            int num;

            printf("Enter A Number : \n");

            scanf("%d", &num);

            evenOdd(num);

            (evenOdd(num)) ? printf("Number is Even \n") : printf("Number is odd. \n");

        }

        else if (ch == 5)

        {

            float baseSalary;

            printf("\n Enter Base Salary :  \n");

            scanf("%f", &baseSalary);

            printf("Total Salary is : %f ", salary(baseSalary));

        }

        else if (ch == 6)

        {

            int age;

            char gender;

            printf("\n Enter Your Gender (f/m): ");

            fflush(stdin);

            scanf("%c", &gender);

            printf("\n Enter age of Person: \n");

            scanf("%d", &age);

            (marriageEligibility(age, gender)) ? printf("Eligible to marry") : printf("Not Eligible to marry");

        }

    }

}

float tempConvert(int CL)

{

    float fr = (9.0 / 5.0) \* CL + 32;

    printf("Temparature In Celcius is :%d \n", CL);

    return fr;

}

void areaAndPerimetere()

{

    printf("What do you want to do brooo. \n");

    int ch;

    printf("1> Area of Circle\n");

    printf("2> Area of Reactangle\n");

    printf("3> Perimeter of Circle \n");

    printf("4> Circumference of Circle\n");

    scanf("%d", &ch);

    int L, W;

    float rad;

    if (ch == 0 || ch > 4 || ch < 0)

    {

        printf("Invalid Choice broooo!!!");

    }

    else if (ch == 1)

    {

        printf("Enter Radious of Circle");

        scanf("%f", &rad);

        printf("%.2f is area of Circle...! \n", areaofCircle(rad));

    }

    else if (ch == 2)

    {

        printf("\n Enter Length and Width of Reactangle : \n");

        scanf("%d%d", &L, &W);

        printf("\n");

        printf("%d is area of Rectangle...! \n", areaofRect(L, W));

    }

    else if (ch == 3)

    {

        printf("\n Enter Length and Width of Reactangle : \n");

        scanf("%d%d", &L, &W);

        printf("\n");

        printf("%d is Perimeter of Rectangle..! \n", perimeter(L, W));

    }

    else if (ch == 4)

    {

        printf("Enter Radious of Circle");

        scanf("%f", &rad);

        printf("\n");

        printf("%.2f is Circumference of circle..! \n", circumference(rad));

    }

}

float areaofCircle(int radious)

{

    const float PI = 3.14;

    float areaOfCir = PI \* (radious \* radious);

    return areaOfCir;

}

int areaofRect(int L, int W)

{

    int areaOfRect = L \* W;

    return areaOfRect;

}

int perimeter(int L, int W)

{

    int periMeter = 2 \* (L + W);

    return periMeter;

}

float circumference(float radious)

{

    const float PI = 3.14;

    float Circumfer = 2.0 \* PI \* radious;

    return Circumfer;

}

void sumOfDigitAndReverse()

{

    printf("What do you Whant to do : \n");

    printf("1> Sum Of Digits of number: \n");

    printf("2> Reverse the number : \n");

    int ch;

    scanf("%d", &ch);

    int num;

    if (ch == 1)

    {

        printf("Enter a Number : \n");

        scanf("%d", &num);

        printf(" \n %d is Sum of digits.\n", sumOfDigits(num));

    }

    else if (ch == 2)

    {

        printf("Enter a Number : \n");

        scanf("%d", &num);

        printf(" \n %d is Reverse Number \n", reverseNum(num));

    }

    else

    {

        printf("Invalid Choice brooo!! \n");

    }

}

int sumOfDigits(int num)

{

    int sum = 0;

    for (num; num > 0; num /= 10)

    {

        sum += (num % 10);

    }

    return sum;

}

int reverseNum(int num)

{

    int rev = 0;

    for (num; num > 0; num /= 10)

    {

        rev = (rev \* 10) + (num % 10);

    }

    return rev;

}

int evenOdd(int num)

{

    if (num % 2 == 0)

    {

        return 1;

    }

    else

    {

        return 0;

    }

}

float salary(float baseSalary)

{

    float totalSalary;

    float DA, TA, HRA;

    if (baseSalary <= 5000)

    {

        DA = 0.10 \* baseSalary;

        TA = 0.20 \* baseSalary;

        HRA = 0.25 \* baseSalary;

    }

    else

    {

        DA = 0.15 \* baseSalary;

        TA = 0.25 \* baseSalary;

        HRA = 0.30 \* baseSalary;

    }

    totalSalary = DA + TA + HRA + baseSalary;

    return totalSalary;

}

int marriageEligibility(int age, char gender)

{

    return ((gender == 'f' && age >= 18 || gender == 'm' && age >= 21) ? 1 : 0);

}

Output:

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

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

1

Enter Teperature in Celcious.45

Temparature In Celcius is :45

Temparature In Feranhite is :113.00

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

2

What do you want to do brooo.

1> Area of Circle

2> Area of Reactangle

3> Perimeter of Circle

4> Circumference of Circle

1

Enter Radious of Circle22

1519.76 is area of Circle...!

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

3

What do you Whant to do :

1> Sum Of Digits of number:

2> Reverse the number :

1

Enter a Number :

34

7 is Sum of digits.

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

4

Enter A Number :

322

Number is Even

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

5

Enter Base Salary :

34225

Total Salary is : 58182.500000

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

6

Enter Your Gender (f/m): f

Enter age of Person:

45

Eligible to marry

Eneter your choice :

1) Temp Convert:

2) Area And Perimeter:

3) Sum Of Digits and Reverse:

4) Even Odd :

5) Salary:

6) Marriage Eligibility:

0

Inavalid Choice !

PS C:\Code>

**Assignment 02 Using Type 4**

#include <stdio.h>

float discount(float);

int greatestOfThree(int, int, int);

void calculator();

int addition(int, int);

void UseChoice();

int substraction(int, int);

int multiplication(int, int);

int division(int, int);

int greatOfThree(int, int, int);

float discountStudent(float, char);

void evenOdd(int);

void salary(float);

void main()

{

    int ch = 1;

    while (ch)

    {

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

        printf("1) Discount: \n");

        printf("2) Greatest of Three: \n");

        printf("3) calculator: \n");

        printf("4) UserChoice : \n");

        printf("5) Student Discount: \n");

        printf("Enter 0 To exit");

        scanf("%d", &ch);

        if (ch > 5 || ch < 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            float Op;

            printf("Enter Original Price broo:");

            scanf("%f", &Op);

            printf("%.4f is final Price \n ", discount(Op));

        }

        else if (ch == 2)

        {

            printf("Gretest of Three Numbers \n");

            // get value of a b c from user

            printf("\n Enter 3 Numbers :");

            int A, B, C;

            scanf("%d%d%d", &A, &B, &C);

            printf("%d is greatest. \n", greatestOfThree(A, B, C));

        }

        else if (ch == 3)

        {

            calculator();

        }

        else if (ch == 4)

        {

            UseChoice();

        }

        else if (ch == 5)

        {

            float price, finalprice;

            printf("Enter Price of the product : \n");

            scanf("%f", &price);

            printf("Are you a Student ? (Y/N) \n");

            char std = getch();

            printf("%.2f is Final Price. \n", discountStudent(price, std));

        }

        else if (ch == 0)

        {

            break;

        }

    }

}

float discount(float Op)

{

    float finalPrice;

    if (Op <= 1000)

    {

        finalPrice = Op - (0.05 \* Op);

        return finalPrice;

    }

    else if (Op <= 5000)

    {

        finalPrice = Op - (0.10 \* Op);

        return finalPrice;

    }

    else if (Op <= 10000)

    {

        finalPrice = Op - (0.20 \* Op);

        return finalPrice;

    }

    else if (Op > 10000)

    {

        finalPrice = Op - (0.25 \* Op);

        return finalPrice;

    }

}

int greatestOfThree(int A, int B, int C)

{

    return A > B && A > C ? A : B > C ? B

                                      : C;

}

void calculator()

{

    printf("Enetr your Choice: \n");

    printf("A Addition \n");

    printf("S Substraction \n");

    printf("M Multiplication \n");

    printf("D Dividion \n");

    char op = getch();

    int A, B;

    if (op == 'A')

    {

        printf("Chosen Operation is Addition.. \n ");

        printf("Enter Two numbers : ");

        scanf("%d%d", &A, &B);

        printf("%d is Addition.", addition(A, B));

    }

    else if (op == 'S')

    {

        printf("Chosen Operation is Substraction.. \n ");

        printf("Enter Two numbers : ");

        scanf("%d%d", &A, &B);

        printf("%d is Substraction.", substraction(A, B));

    }

    else if (op == 'M')

    {

        printf("Chosen Operation is Multiplication.. \n ");

        printf("Enter Two numbers : ");

        scanf("%d%d", &A, &B);

        printf("%d is Multiplication ", multiplication(A, B));

    }

    else if (op == 'D')

    {

        printf("Enter Two numbers : ");

        scanf("%d%d", &A, &B);

        printf("Chosen Operation is Division.. \n ");

        printf("%d is Division \n", division(A, B));

    }

}

int addition(int A, int B)

{

    return (A + B);

}

int division(int A, int B)

{

    if (A == 0 || B == 0)

    {

        printf("Divide by zero exception !!!");

        return 0;

    }

    else if (A < B)

    {

        return (B / A);

    }

    else

    {

        return (A / B);

    }

}

int substraction(int A, int B)

{

    return (B - A);

}

int multiplication(int A, int B)

{

    return (A \* B);

}

void UseChoice()

{ // Choice to be taken from user when learn about Scan

    printf("\n Enter Your choice \n");

    printf("\n E for EvenOdd \n");

    printf("\n S for Slary Calculation \n");

    printf("\n G for Finding greatest of three. \n");

    char choice = getch();

    if (choice == 'E')

    {

        int num;

        printf("Enter A number to check Even or Odd \n");

        scanf("%d", &num);

        evenOdd(num);

    }

    else if (choice == 'S')

    {

        printf("Salary calculation \n");

        float baseSalary;

        printf("Enter Base salary: \n");

        scanf("%f", &baseSalary);

        salary(baseSalary);

    }

    else if (choice == 'G')

    {

        printf("Gretest of Three Numbers \n");

        // get value of a b c from user

        printf("\n Enter 3 Numbers :");

        int A, B, C;

        scanf("%d%d%d", &A, &B, &C);

        printf("%d is greatest. \n", greatestOfThree(A, B, C));

    }

}

float discountStudent(float price, char std)

{

    float finalprice;

    if (std == 'Y')

    {

        if (price >= 500)

        {

            finalprice = price - (price \* 0.20);

        }

        else

        {

            finalprice = price - (price \* 0.10);

        }

    }

    else if (std == 'N' && price > 600)

    {

        finalprice = price - (price \* 0.15);

    }

    else

    {

        finalprice = price;

    }

    return (finalprice);

}

void evenOdd(int num)

{

    if (num % 2 == 0)

    {

        printf("Number is Even \n");

    }

    else

    {

        printf("Number is odd.");

    }

}

void salary(float baseSalary)

{

    float DA, TA, HRA;

    if (baseSalary <= 5000)

    {

        DA = 0.10 \* baseSalary;

        TA = 0.20 \* baseSalary;

        HRA = 0.25 \* baseSalary;

    }

    else

    {

        DA = 0.15 \* baseSalary;

        TA = 0.25 \* baseSalary;

        HRA = 0.30 \* baseSalary;

    }

    printf("\n %.4f is Totalsalary.", DA + TA + HRA + baseSalary);

}

Output:

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

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit1

Enter Original Price broo:1800

1620.0000 is final Price

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit2

Gretest of Three Numbers

Enter 3 Numbers :67

89

09

89 is greatest.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit3

Enetr your Choice:

A Addition

S Substraction

M Multiplication

D Dividion

Chosen Operation is Addition..

Enter Two numbers :

45

667

712 is Addition.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit4

Enter Your choice

E for EvenOdd

S for Slary Calculation

G for Finding greatest of three.

Enter A number to check Even or Odd

44

Number is Even

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit5

Enter Price of the product :

1400

Are you a Student ? (Y/N)

1190.00 is Final Price.

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit0

PS C:\Code>

**Assignment 03 Type 4**

#include <stdio.h>

void OneToTen(int);

void tableOfNum(int);

int sumOfNumdinrange(int, int);

int isPrime(int);

int armstrong(int);

int perfect(int);

int factorial(int);

int strong(int);

int palindrome(int);

int sumOfFirstAndLastDigit(int);

int power(int, int);

int getCount(int);

void main()

{

    int ch = 1;

    int num = 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");

        printf("0) Exit : \n");

        scanf("%d", &ch);

        if (ch > 10 || ch <= 0)

        {

            printf("Inavalid Choice !");

        }

        else if (ch == 1)

        {

            OneToTen(num);

        }

        else if (ch == 2)

        {

            printf("Enter a number. \n");

            scanf("%d", &num);

            tableOfNum(num);

        }

        else if (ch == 3)

        {

            int start, end;

            printf("Enter starting range :");

            scanf("%d", &start);

            // printf("\n");

            printf("Enter Ending range : ");

            scanf("%d", &end);

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

        }

        else if (ch == 4)

        {

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

            scanf("%d", &num);

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

        }

        else if (ch == 5)

        {

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

            scanf("%d", &num);

            armstrong(num) ? printf("Number %d is Armstrong Number.", num) : printf("Number %d is NOT Armstrong Number.", num);

        }

        else if (ch == 6)

        {

            printf("Enter A number :");

            scanf("%d", &num);

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

        }

        else if (ch == 7)

        {

            printf("Enter A number :");

            scanf("%d", &num);

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

        }

        else if (ch == 8)

        {

            printf("Enter a number : ");

            scanf("%d", &num);

            strong(num) ? printf("%d is a strong number", num) : printf("%d is Not  strong number", num);

        }

        else if (ch == 9)

        {

            printf("Enter a number : ");

            scanf("%d", &num);

            palindrome(num) ? printf("%d is a palindrome Number.", num) : printf("%d Is not a palindrome number", num);

        }

        else if (ch == 10)

        {

            printf("Enter A number : ");

            scanf("%d", &num);

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

        }

    }

}

void OneToTen(num)

{

    while (num <= 10)

    {

        printf("%d \n", num);

        num++;

    }

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

}

void tableOfNum(int 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, int end)

{

    int sum = 0;

    int temp = start;

    while (temp <= end)

    {

        sum += temp;

        temp++;

    }

    return sum;

}

int isPrime(int num)

{

    int i = 2, cnt = 0;

    while (i <= num / 2)

    {

        if (num % i == 0)

        {

            return 0;

        }

        i++;

    }

    return 1;

}

int armstrong(int num)

{

    int rem = 0;

    int armN = 0;

    int temp = num;

    int cnt = getCount(temp);

    // printf("\n couynt = %d", cnt);

    while (temp)

    {

        rem = temp % 10;

        armN += power(rem, cnt);

        temp /= 10;

    }

    if (armN == num)

    {

        return 1;

    }

    else

    {

        return 0;

    }

}

int power(int b, int e)

{

    // printf("\n Inside Power");

    while (e)

    {

        // printf("\n %d= b inside powr while", b);

        b \*= b;

        e--;

    }

    return b;

}

int getCount(int num)

{

    // printf("\n Inmside Getcount");

    int count = 0;

    while (num)

    {

        count++;

        num /= 10;

    }

    return count;

}

int perfect(int num)

{

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

    while (i < num)

    {

        if (num % i == 0)

        {

            sumOfDivisor += i;

            cnt++;

        }

        i++;

    }

    return (sumOfDivisor == num);

}

int factorial(int num)

{

    int Fact = 1;

    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(int 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;

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

    }

}

int palindrome(int num)

{

    int temp = num;

    int rev = 0;

    while (temp > 0)

    {

        int rem = temp % 10;

        rev = (rev \* 10) + rem;

        temp /= 10;

    }

    return (rev == num);

}

int sumOfFirstAndLastDigit(int num)

{

    int lastDigit, firstDigit;

    lastDigit = num % 10;

    firstDigit = num / 10;

    while (firstDigit >= 10)

    {

        firstDigit /= 10;

    }

    return (firstDigit + lastDigit);

}

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:

0) 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:

0) 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 = 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:

0) Exit :

3

Enter starting range :4

Enter Ending range : 44

984 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:

0) Exit :

5

Enter A number to cheack armstrong. : 6

Number 6 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:

0) Exit :

5

Enter A number to cheack armstrong. : 555

Number 555 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:

0) 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:

0) Exit :

7

Enter A number :6

720 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:

0) Exit :

8

Enter a number : 6

6 is 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:

0) Exit :

9

Enter a number : 212

2

212 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:

0) Exit :

10

Enter A number : 122

3 is sum of first and last digit of given numbr 122.

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) Exit :

0

Inavalid Choice !

PS C:\Code>