**Assignment 2**

Nested if-else

1. Find the price of item when discount is given (specify different discount based on price)

// Find the price of item when discount is given (specify different discount based on price)

#include <stdio.h>

void main()

{

    float Op = 5200;

    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);

    }

}

Output :

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

4160.00 is final price with 20% discount on original price 5200.00

PS C:\Code>

1. Write a program to find greatest of three numbers using nested if-else.

 // Write a program to find greatest of three numbers using nested if-else.

    #include <stdio.h>

    void main()

    {

        int A = 19, B = 40, C = 300;

        // if (A > B)

        // {

        //     if (A > C)

        //     {

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

        //     }

        //     else

        //     {

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

        //     }

        // }

        // else if (B > C)

        // {

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

        // }

        // else

        // {

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

    }

Output :

300 C is greatest.

300 is the greatest.

PS C:\Code>

1. Accept two numbers from user and an operator (+,-,/,\*,%) based on that perform the desired operations.

// Accept two numbers from user and an operator (+,-,/,\*,%) based on that perform the desired operations.

#include <stdio.h>

void main()

{

    // To be accepted from user in future when i will learn about scanf

    int A = 12, B = 0;

    char op = 'D';

    if (op == 'A')

    {

        printf("Operation choosen is Addition \n");

        printf("%d is addition of A %d and B %d", A + B, A, B);

    }

    else if (op == 'S')

    {

        if (A < B)

        {

            printf("Operation choosen is  Substraction\n");

            printf("%d is Substraction of B %d and A %d", B - A, B, A);

        }

        else

        {

            printf("Operation choosen is  Substraction\n");

            printf("%d is Substraction of A %d and B %d", A - B, A, B);

        }

    }

    else if (op == 'M')

    {

        printf("Operation choosen is Multiplication \n");

        printf("%d is Multiplication of A %d and B %d", A \* B, A, B);

    }

    else if (op == 'D')

    {

        if (A == 0 || B == 0)

        {

            printf("Zero is not divisible \n");

        }

        else

        {

            printf("Operation choosen is Division \n");

            printf("%d is Division of A %d and B %d", A / B, A, B);

        }

    }

}

Output :

Zero is not divisible

PS C:\Code>

Operation choosen is Division

2 is Division of A 12 and B 6

PS C:\Code>

Operation choosen is Addition

18 is addition of A 12 and B 6

PS C:\Code>

1. Display a menu to the user (like 1.Even Odd 2. Basic salary etc), ask the user to enter his choice, then based on that perform the desired operations.

// Display a menu to the user (like 1.Even Odd 2. Basic salary etc), ask the user to enter his choice, then based on that perform the desired operations.

#include <stdio.h>

void main()

{

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

    char choice = 'E';

    int A = 10, B = 13, C = 45;

    if (choice == 'E')

    {

        printf("EvenOdd \n");

        // get Num from user

        int num = 12;

        num % 2 == 0 ? printf("%d num is Even \n", num) : printf("%d num is Odd \n", num);

    }

    else if (choice == 'S')

    {

        printf("Salary calculation \n");

        // Get baseSalary from user

        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("Total Salary for bsae %f is : %f \n", baseSalary, totalSalary);

    }

    else if (choice == 'G')

    {

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

        // get value of a b c from user

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

    }

}

Output:

EvenOdd

12 num is Even

PS C:\Code>

1. Accept the price from user. Ask the user if he is a student (user may say yes or no). If he is a student and he has purchased more than 500 than discount is 20% otherwise discount is 10%. But if he is not a student then if he has purchased more than 600 discount is 15% otherwise there is not discount.

// Accept the price from user. Ask the user if he is a student (user may say yes or no). If he is a student and he has purchased more than 500 than discount is 20% otherwise discount is 10%. But if he is not a student then if he has purchased more than 600 discount is 15% otherwise there is not discount.

#include <stdio.h>

void main()

{

    float price = 45500.0, finalprice;

    char std = 'N';

    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);

}

Output:

Final price is : 38675.00

PS C:\Code>

**Assignment 1 using Function Of Type 1**

#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();

    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\.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:3525

3172.50 is final price with 10% discount on original price 3525.00

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit2

Enter Three Numbers : 405

708

712

712 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 Multiplication..

Enter Two numbers : 42

999

41958 is Multiplication.

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.

Salary calculation

Enter Base salary:

75000

Total Salary is : 127500.000000

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 :

30000

Are you a Student ? (Y/N)

Final price is : 24000.00

Eneter your choice :

1) Discount:

2) Greatest of Three:

3) calculator:

4) UserChoice :

5) Student Discount:

Enter 0 To exit0

PS C:\Code>