Assignment 2

Nested if-else

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

```c
// 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>

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

```c
// 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>

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

```c
// 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>

4. 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.

```c
// 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>

5. 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

```c
#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);
```

```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 : ");
```

```c
    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>