Assignment - 9

Switch Case Problems

1. Write a program which takes the month number as an input and display number of days in that month.

Code

#include<stdio.h>

int main(){

       int n;

        printf("Enter a Number of a month :");

    scanf("%d",&n);

    switch (n)

    {

    case 1: printf("31");  break;

    case 2: printf("28 or 29");  break;

    case 3: printf("31");  break;

    case 4: printf("30");  break;

    case 5: printf("31");  break;

    case 6: printf("30");  break;

    case 7: printf("31");  break;

    case 8: printf("31");  break;

    case 9: printf("30");  break;

    case 10: printf("31");  break;

    case 11: printf("30");  break;

    case 12: printf("31");  break;

    default: printf("wrong input");  break;

    }

    return 0;

}

Output

Enter a Number of a month :6

30

2. Write a menu driven program with the following options:

a. Addition

b. Subtraction

c. Multiplication

d. Division

e. Exit

Code

#include<stdio.h>

int main(){

    int n1=0,n2=0;

       int n;

       for(;;)

       {

        n=0, n1=0 ,n2=0;

        printf("a menu driven program with the following options :\n");

        printf("1. Addition\n");

        printf("2. Subtraction\n");

        printf("3. Multipication\n");

        printf("4. Division\n");

        printf("5. Exit\n\n");

       printf("Enter option number :");

       scanf("%d",&n);

        if(n==5)

       break;

       printf("Enter number(N1) :");

       scanf("%d",&n1);

       printf("Enter number(N2) :");

       scanf("%d",&n2);

       printf("\n");

   switch (n)

    {

    case 1: printf("%d",n1+n2);  break;

    case 2: printf("%d",n1-n2);  break;

    case 3: printf("%d",n1\*n2);  break;

    case 4: printf("%d",n1/n2);  break;

    case 5: break;

    default: printf("wrong input");

    }

       printf("\n\n");

    }

    return 0;

}

Output

a menu driven program with the following options :

1. Addition

2. Subtraction

3. Multipication

4. Division

5. Exit

Enter option number :2

Enter number(N1) :3

Enter number(N2) :4

-1

1. Write a program which takes the day number of a week and displays a unique greeting message for the day.

Code

#include<stdio.h>

int main()

{

        int n;

        printf("Enter a week number :");

        scanf("%d",&n);

        printf("\n");

    switch (n)

    {

    case 1:

    printf("HAPPY MONDAY");

    break;

    case 2:

    printf("HAPPY TUESDAY");

    break;

    case 3:

    printf("HAPPY WEDNESSDAY");

    break;

    case 4:

    printf("HAPPY THRUSDAY");

    break;

    case 5:

    printf("HAPPY FRIDAY");

    break;

    case 6:

    printf("HAPPY SATURDAY");

    break;

    case 7:

    printf("HAPPY SUNDAY");

    break;

    default:

    printf("wrong input");

    break;

    }

    return 0;

}

Output

Enter a week number :4

HAPPY THRUSDAY

4. Write a menu driven program with the following options:

a. Check whether a given set of three numbers are lengths of an isosceles triangle or not

b. Check whether a given set of three numbers are lengths of sides of a right angled triangle or not

c. Check whether a given set of three numbers are equilateral triangle or not

d. Exit

code

#include<stdio.h>

int main(){

    int a=0,b=0,c=0;

       int n;

       for(;;)

       {

        n=0, a=0 ,b=0,c=0;

        printf("a menu driven program with the following options :\n");

        printf("1. Check whether a given set of three numbers are lengths of an isosceles triangle or not\n");

        printf("2. Check whether a given set of three numbers are lengths of sides of a right angled triangle or not\n");

        printf("3. Check whether a given set of three numbers are equilateral triangle or not\n");

        printf("4. Exit\n");

       printf("Enter option number :");

       scanf("%d",&n);

        if(n==4)

       break;

       printf("Enter sides of triangle :\n");

       printf("Enter side(a) :");

       scanf("%d",&a);

       printf("Enter side(b) :");

       scanf("%d",&b);

       printf("Enter side(c) :");

       scanf("%d",&c);

       printf("\n");

   switch (n)

    {

    case 1:

    if(a==b || b==c || c==a)

     printf("Triangle is Isosceles ");

    else

     printf("Triangle is not Isosceles ");

    break;

    case 2:

    if(a\*a==(b\*b + c\*c) || c\*c==(b\*b + a\*a) || b\*b==(a\*a + c\*c))

    printf("Triangle is right angled Triangle ");

    else

     printf("Triangle is not right angled Triangle ");

    break;

    case 3:

    if(a==b && b==c && c==a)

     printf("Triangle is Equilateral ");

    else

     printf("Triangle is not Equilateral ");

    break;

    case 4:

    break;

    default: printf("wrong input");

    }

       printf("\n\n");

    }

    return 0;

}

Output

Enter option number :1

Enter sides of triangle :

Enter side(a) :2

Enter side(b) :2

Enter side(c) :4

Triangle is Isosceles

5. Convert the following if-else-if construct into switch case:

if(var == 1)

System.out.println("good");

else if(var == 2)

System.out.println("better");

else if(var == 3)

System.out.println("best");

else

System.out.println("invalid");

Code

#include<stdio.h>

int main()

{

        int n;

        printf("Enter a number :");

        scanf("%d",&n);

    switch (n)

    {

    case 1:

    printf("good");

    break;

    case 2:

    printf("better");

    break;

    case 3:

    printf("best");

    break;

    default:

    printf("invalid");

    break;

    }

    return 0;

}

Output

Enter a number :2

better

6. Program to check whether a year is a leap year or not. Using switch statement

Code

#include<stdio.h>

int main()

{

        int n,b;

        printf("Enter a number :");

        scanf("%d",&n);

       b = n%4==0;

    switch (b)

    {

    case 0:

    printf("it's not a leap year");

    break;

    case 1:

    printf("it's a leap year");

    break;

    default:

    printf("invalid");

    break;

    }

    return 0;

}

Output

Enter a number :2014

it's not a leap year

7. Program to take the value from the user as input electricity unit charges and calculate total electricity bill according to the given condition . Using the switch statement.

For the first 50 units Rs. 0.50/unit

For the next 100 units Rs. 0.75/unit

For the next 100 units Rs. 1.20/unit

For units above 250 Rs. 1.50/unit

An additional surcharge of 20% is added to the bill.

Code

#include<stdio.h>

int main()

{        float n,n1=0,n2=0;

        int a,b,c,d;

        printf("Enter a electricity in units:");

        scanf("%f",&n);

    a=(n<=50);

    b= (n>=51 && n<=150);

    c= (n>=151 && n<=250);

    d= (n>=251);

    switch (a)

    {

    case 1:

     n1= 0.50\*n;

     n2= ( n1 + (20.00/100.00)\*n1);

     // 20/100 truncate not done for float n2 instead 20.00/100.00 works

    printf("Total Electricity bill %.2f",n2);

    break;

    case 0: break;

    }

    switch (b)

    {

    case 1:

     n1= 0.75\*n;

     n2= n1 + ((20.00/100.00)\*n1);

    printf("Total Electricity bill %.2f",n2);

    break;

    case 0: break;

    }

    switch (c)

    {

    case 1:

     n1= 1.20\*n;

     n2= n1 + ((20.00/100.00)\*n1);

    printf("Total Electricity bill %.2f",n2);

    break;

    case 0: break;

    }

    switch (d)

    {

    case 1:

     n1= 1.50\*n;

     n2= n1 + (20.00/100.00)\*n1;

    printf("Total Electricity bill %.2f",n2);

    break;

    case 0: break;

    }

    return 0;

}

Output

Enter a electricity in units:51

Total Electricity bill 45.90

8. Program to convert a positive number into a negative number and negative number into a positive number using a switch statement.

Code

#include<stdio.h>

int main()

{

        int n,b;

        printf("Enter a number :");

        scanf("%d",&n);

       b = n>0;

    switch (b)

    {

    case 0:

    printf("positive number : %d",n+(2\*-n));

    break;

    case 1:

    printf("Negative number : %d",n-2\*n);

    break;

    default:

    printf("0");

    break;

    }

    return 0;

}

Output

Enter a number :-4

positive number : 4

9. Program to Convert even number into its upper nearest odd number Switch Statement.

Code

#include<stdio.h>

int main()

{

        int n,b;

        printf("Enter a even number :");

        scanf("%d",&n);

       b = n%2==0;

    switch (b)

    {

    case 1:

    printf("its upper nearest odd number : %d",n+1);

    break;

    default:

    printf("%d is not a even number, Enter a even number ",n);

    break;

    }

    return 0;

}

Output

Enter a even number :2

its upper nearest odd number : 3

10. C program to find all roots of a quadratic equation using switch case

Code

#include<stdio.h>

#include<math.h>

int main()

{       float r1,r2,d, a,c,b;

        int n;

        printf("In a Quadratic Equation (ax\*2 + bx + c) :\n");

        printf("Enter coff of a :");

        scanf("%f",&a);

        printf("Enter coff of b :");

        scanf("%f",&b);

        printf("Enter coff of c :");

        scanf("%f",&c);

       d= sqrt((b\*b)-(4\*a\*c));

       n= d>0;

    switch (n)

    {

    case 1:

    r1=(-b+d)/2.00\*a;

    r2=(-b-d)/2.00\*a;

    printf("The roots (r1,r2) are : %.2f %.2f",r1,r2);

    break;

    case 0:

    r1=-b/(2.00\*a);

    printf("The roots (r1,r2) are : %.2f %.2f",r1,r1);

    break;

    default:

    printf("roots are imaginary!!");

    break;

    }

    return 0;

}

Output

In a Quadratic Equation (ax\*2 + bx + c) :

Enter coff of a :1.00

Enter coff of b :4.00

Enter coff of c :3.00

The roots (r1,r2) are : -1.00 -3.00