ASSIGNMENT-9

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

ANS-#include<stdio.h>

int main(){

    int month;

    printf("Enter the month:");

    scanf("%d",&month);

    switch (month)

    {

    case 1:

       printf("31 Days");

        break;

    case 2:

       printf("28/29 Days");

        break;

    case 3:

       printf("31 Days");

        break;

    case 4:

       printf("30 Days");

        break;

    case 5:

       printf("31 Days");

        break;

    case 6:

       printf("30 Days");

        break;

    case 7:

       printf("31 Days");

        break;

    case 8:

       printf("31 Days");

        break;

    case 9:

       printf("30 Days");

        break;

    case 10:

       printf("31 Days");

        break;

    case 11:

       printf("30 Days");

        break;

    case 12:

       printf("31 Days");

        break;

    default:

       printf("Invalid Month");

        break;

    }

    return 0;

}

1. Write a menu driven program with the following options: a. Addition b. Subtraction c. Multiplication d. Division e. Exit.

Ans- #include<stdio.h>

#include<stdlib.h>

int main(){

    int n,a,b;

    printf("Press 1 for Addition(+)\n");

    printf("Press 2 for Subtraction(-)\n");

    printf("Press 3 for Multiplication(\*)\n");

    printf("Press 4 for Division(/)\n");

    printf("Press 5 for Exit\n");

    printf("Enter the Operation you want to Perform");

    scanf("%d",&n);

    printf("Enter the values");

    scanf("%d %d",&a ,&b);

    switch (n)

    {

    case 1:

        printf("Addtion of numbers is:%d",a+b);

        break;

    case 2:

        printf("Subtraction of numbers is:%d",a-b);

        break;

    case 3:

        printf("Multiplication of numbers is:%d",a\*b);

        break;

    case 4:

        printf("Division of numbers is:%d",a/b);

        break;

    case 5:

        printf("Exiting the Program....");

        return 0;

    default:

        printf("Invalid Input");

    }

  return 0;

}

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

Ans- #include<stdio.h>

#include<stdlib.h>

int main(){

    int daynumber;

    printf("Enter the Day number of a week");

    scanf("%d",&daynumber);

    switch (daynumber)

    {

    case 1:

        printf("Happy Monday");

        break;

    case 2:

        printf("Enjoy your Tuesday");

        break;

    case 3:

        printf("Hello Wednesday");

        break;

    case 4:

        printf("Have a great Thursday");

        break;

    case 5:

        printf("Friday Blessings");

        break;

    case 6:

        printf("Smile it's Saturday");

        break;

    case 7:

        printf("Funday Sunday");

        break;

    default:

        printf("Invalid daynumber");

    }

  return 0;

}

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.

Ans-#include<stdio.h>

#include<stdlib.h>

int main(){

  int a,b,c,triangle;

  printf("Enter the three sides : ");

  scanf("%d %d %d",&a,&b,&c);

  switch (a==b&&b==c)

  {

  case 1:

    printf("Equilateral triangle");

    break;

  case 0 :

    switch ((c\*c) == (a\*a)+(b\*b))

    {

    case 1:

        printf("Right angled traingle");

        break;

    case 0:

    switch (a==b|| b==c || a==c)

    {

    case 1:

        printf("Isoscales triangle");

        break;

    }

    }

  }

    return 0;

}

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");

Ans-#include<stdio.h>

#include<stdlib.h>

int main(){

    int var;

    printf("Enter the value");

    scanf("%d",&var);

    switch (var)

    {

    case 1:

        printf("Good");

        break;

    case 2:

        printf("Better");

        break;

    case 3:

        printf("Best");

        break;

    default:

        printf("Invalid");

    }

  return 0;

}

#include<stdio.h>

#include<stdlib.h>

int main(){

    int var;

    printf("Enter the value");

    scanf("%d",&var);

    switch (var)

    {

    case 1:

        printf("Good");

        break;

    case 2:

        printf("Better");

        break;

    case 3:

        printf("Best");

        break;

    default:

        printf("Invalid");

    }

  return 0;

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

Ans-#include<stdio.h>

int main()

{

   int year, remainder;

   printf("Enter Year: ");

   scanf("%d",&year);

   remainder=((year%4==0)&&((year%400==0)||(year%100!=0)));

   switch(remainder)

   {

   case 1:

     printf("Leap Year");

     break;

   case 0:

     printf("Not Leap Year");

     break;

   default:

     printf("Invalid");

     break;

   }

return 0;

}

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.

Ans-#include<stdio.h>

int main()

{

    int unit;

    float amount, total\_amount, surcharge;

    printf("Enter total Units consumed: ");

    scanf("%d",&unit);

     switch(unit<=50)

    {

        case 1:

            amount=unit\*0.50;

            break;

            case 0:

                switch(unit<=150)

                {

                    case 1:

                        amount=25+(unit-50)\*0.75;

                        break;

                        case 0:

                            switch(unit<=250)

                            {

                                case 1:

                                amount=100+(unit-150)\*1.20  ;

                                break;

                                case 0:

                                amount=220+(unit-250)\*1.50;

                                break;

                            }

                        break;

                }

            break;

    }

    surcharge=amount\*0.20;

    total\_amount=amount+surcharge;

    printf("your total bill is %f Rs",total\_amount);

    return 0;

}

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

Ans-#include<stdio.h>

#include<stdlib.h>

int main(){

    int num;

    printf("Enter the Number:");

    scanf("%d",&num);

    switch (num<0)

    {

    case 1:

        num=abs(num);

        break;

    case 0:

        switch (num>0)

        {

        case 1:

            num = -num;

            break;

        }

    }

    printf("%d",num);

    return 0;

}

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

Ans-#include<stdio.h>

#include<stdlib.h>

int main(){

    int num;

    printf("Enter the Number:");

    scanf("%d",&num);

    switch (num%2==0)

    {

    case 1:

        num=num+1;

        printf("Its upper nearest odd number is %d ",num);

        break;

    default:

       printf("Not an Even Number");

    }

    return 0;

}

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

Ans-#include <stdio.h>

#include <math.h>

int main()

{

    float a, b, c;

    float root1, root2, imaginary;

    float discriminant;

    printf("Enter values of a, b, c of quadratic equation: ");

    scanf("%f%f%f", &a, &b, &c);

    discriminant = (b \* b) - (4 \* a \* c);

    switch(discriminant > 0)

    {

        case 1:

            root1 = (-b + sqrt(discriminant)) / (2 \* a);

            root2 = (-b - sqrt(discriminant)) / (2 \* a);

            printf("Two distinct and real roots exists: %.2f and %.2f",

                    root1, root2);

            break;

        case 0:

            switch(discriminant < 0)

            {

                case 1:

                    root1 = root2 = -b / (2 \* a);

                    imaginary = sqrt(-discriminant) / (2 \* a);

                    printf("Two distinct complex roots exists: %.2f + i%.2f and %.2f - i%.2f",

                            root1, imaginary, root2, imaginary);

                    break;

                case 0:

                    root1 = root2 = -b / (2 \* a);

                    printf("Two equal and real roots exists: %.2f and %.2f", root1, root2);

                    break;

            }

    }

    return 0;

}