Assignment – 9
Switch Case Problems

Que 1 Write a program which takes the month number as an input and display

number of days in that month.

```c
#include <stdio.h>
  int main(){

    int x ;
    printf("enter a number");
    scanf("%d",&x);

    switch(x)
    {
      case 1:
        printf("31 days in january");
        break;

      case 2:
        printf("28  days in february");
        break;

      case 3:
        printf("31 days in march");
        break;
      case 4:
        printf("30 days in april");
        break;
      case 5:
        printf("31 days in may");
        break;
      case 6:
        printf("30 days in june");
        break;

       case 7:
        printf("31 days in july");
        break;
      case 8:
        printf("31 days in august");
        break;
      case 9:
        printf("30 days in september");
        break;
```

```
        case 10:
          printf("31 days in october");
          break;
        case 11:
          printf("30 days in november");
          break;
        case 12:
          printf("31 days in dec");
          break;


    }
    printf("\n");
      return 0;
  }
```

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

a. Addition

b. Subtraction

c. Multiplication

d. Division

e. Exit

```c
#include <stdio.h>


int main ()
{

  int x, a, b;

  printf ("\n 1. add ");
  printf ("\n 2. sub ");
  printf ("\n 3. mult ");
  printf ("\n 4. divi ");

  scanf("%d",&x);

  switch (x)
    {

    case 1:
      printf ("enter 2 numbrs");
```

```c
      scanf ("%d%d", &a, &b);
      printf ("sum is %d", a + b);
      break;

   case 2:

      printf("enter 2 numbrs");
   scanf("%d%d",&a,&b);
   printf("sub is %d",a-b);
   break;

    case 3 :
      printf("enter 2 numbrs");
   scanf("%d%d",&a,&b);
   printf("mult is %d",a*b);
   break;

   case 4:
    printf("enter 2 numbrs");
   scanf("%d%d",&a,&b);
   printf("divi is %d",a/b);
   break;

    }
  return 0;
}
```

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

```c
#include <stdio.h>
 int main(){

    int x ;
    printf("enter a day number");
    scanf("%d",&x);

    switch(x)
    {
       case 1:
          printf("hey!");
          break;

       case 2:
          printf("helllllooo dear");
          break;

       case 3:
          printf("greetings!");
          break;
       case 4:
          printf("ALOHA..");
          break;
       case 5:
          printf("NAMASTE");
          break;
       case 6:
          printf("nice to meet you");
          break;

        case 7:
          printf("have a good day ..");
          break;


    }
    printf("\n");
      return 0;
 }
```

Que : 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

```c
int main ()
{

  int x, a, b,c;

  while(1){

  printf("\n enter your choice : ");
  printf ("\n 1. to check isoceles triangle  ");
  printf ("\n 2. to check right angle triangle ");
  printf ("\n 3. to check equilateral triangle ");


  scanf("%d",&x);
 printf("enter inputs : ");
  scanf("%d%d%d", &a, &b,&c);

  switch (x)
    {

    case 1:
      if(a == b || b==c || c==a){
          printf("isosceles triangle ");
      }else{
          printf("not an isoceles ");
      }
      break;

    case 2:
    if(a *a == b*b + c*c|| b*b ==  a*a+c*c ||c*c ==a*a + b*b){
          printf("right angled triangle ");
      }else{
          printf("not an right angled triangle ");
      }
    break;

     case 3 :
      if((a==b) && (b==c)){
```

```c
        printf("equilateral triangle ");
    }else{
        printf("not an equilateral traingle ");
    }
    break;


    default :
    printf(" invalid");



    }

  }
  return 0;
}
```

que : 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");

```c
#include <stdio.h>
```

```c
int main()
{
    int x;
    printf("enter a number :");
    scanf("%d",&x);

    switch(x){
        case 1 :
        printf("good");
        break;

        case 2:
        printf("better");
        break;

        case 3 :
        printf("best");
        break;

        default :
        printf("invalid");


    }

    return 0;
}
```

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

Statement.

```c
#include <stdio.h>


int main ()
{

int x ;
printf("enter a year : ");
scanf("%d",&x);

switch(x%100 == 0){

    case 1 :
            switch(x%400 ==0 ){
                case 1 :
                  printf("leap year ");
                  break;

                case 0 :
                  printf(" non leap yaer ");
                  break;
            }

            break;

   case 0 :
                switch(x%4==0){
                 case 1 :
                   printf("leap year ");
                   break;

                 case 0 :
                   printf(" non leap yaer ");
                   break;
            }


}

return 0;
}
```

Que : 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.

```c
#include <stdio.h>
#include <math.h>

int main()
{
  float unit,amount ;

  printf("enter unit ");
  scanf("%f",&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;
  }

  float  s_charge=amount*0.20;
 float total=amount+s_charge;

  printf("Electricity Bill = Rs. %.2f",total);



    return 0;
}
```

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

```
#include <stdio.h>

int main()
{
    int x;
```

```c
    printf("enter a number :");
    scanf("%d",&x);

    switch(x<0){
        case 1 :
        printf("positive number %d ",x*(-1));
        break;

         case 0 :
        printf("negative number %d ",x*(-1));
         break;

        default :
        printf("invalid");



    }

     return 0;
}
```

Que : 9 Program to Convert even number into its upper nearest odd number

Switch Statement.

```c
#include <stdio.h>

int main()
{
    int x;
    printf("enter a number :");
```

```c
    scanf("%d",&x);

    switch(x%2==0){
        case 1 :
        printf("upper nearest odd number is %d",x+1);
        break;

         case 0 :
        printf("already a odd number");
         break;

        default :
        printf("invalid");



    }

     return 0;
}
```

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

```c
#include <stdio.h>
#include <math.h>


int main()
{
    double d,a,b,c;
    double realPart,imagPart, root1,root2;
    printf("enter a number :");
     scanf("%lf %lf %lf", &a, &b, &c);

    d = (b*b) - (4*a*c);

    switch(d>0){

      case 1 :
        root1 = (-b + sqrt(d)) / (2 * a);
        root2 = (-b - sqrt(d)) / (2 * a);
```

```c
            printf("root1 = %.2lf and root2 = %.2lf", root1, root2);
            break;

        case 0 :

            realPart = -b / (2 * a);
            imagPart = sqrt(-d) / (2 * a);
            printf("root1 = %.2lf+%.2lfi and root2 = %.2f-%.2fi", realPart,
imagPart, realPart, imagPart);
            break;

        default :
            root1 = root2 = -b / (2 * a);
            printf("root1 = root2 = %.2lf;", root1);
            break;
    }



    return 0;
}
```