Assignment – 9

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 n;
    printf("1. January\n");
    printf("2. February\n");
    printf("3. March\n");
    printf("4. April\n");
    printf("5. May\n");
    printf("6. June\n");
    printf("7. July\n");
    printf("8. August\n");
    printf("9. September\n");
    printf("10. October\n");
    printf("11. November\n");
    printf("12. December\n");

    printf("Enter the month number :");
    scanf("%d",&n);
    switch (n)
    {
    case 1:
        printf("No. of Days in January = 31");
        break;
    case 2:
        printf("No. of Days in February = 28/29");
        break;
    case 3:
        printf("No. of Days in March = 31");
        break;
    case 4:
        printf("No. of Days in April = 30");
        break;
    case 5:
        printf("No. of Days in May = 31");
        break;
    case 6:
        printf("No. of Days in June = 30");
        break;
    case 7:
        printf("No. of Days in July = 31");
        break;
    case 8:
        printf("No. of Days in August = 31");
        break;
    case 9:
        printf("No. of Days in Setember = 30");
        break;
    case 10:
        printf("No. of Days in October = 31");
        break;
    case 11:
```

```
        printf("No. of Days in November = 30");
        break;
    case 12:
        printf("No. of Days in December = 31");
        break;
    }
    return 0;
}
```

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

```
#include<stdio.h>
int main()
{
    char n;
    int x,y,z;
    printf("a. Addition\n");
    printf("b. Subtraction\n");
    printf("c. Multiplication\n");
    printf("d. Division\n");
    printf("e. Exit\n");
    printf("Enter Your Choice :");
    scanf("%c",&n);
    switch (n)
    {
    case 'a':
        printf("Enter two numbers :");
        scanf("%d%d",&x,&y);
        z=x+y;
        printf("Addition of %d and %d is %d",x,y,z);
        break;
    case 'b':
        printf("Enter two numbers :");
        scanf("%d%d",&x,&y);
        z=x-y;
        printf("Subtraction of %d and %d is %d",x,y,z);
        break;
    case 'c':
        printf("Enter two numbers :");
        scanf("%d%d",&x,&y);
        z=x*y;
        printf("Multiplication of %d and %d is %d",x,y,z);
        break;
    case 'd':
        printf("Enter two numbers :");
        scanf("%d%d",&x,&y);
        z=x/y;
        printf("Division of %d and %d is %d",x,y,z);
        break;
    case 'e':
        return 0;
    }
```

```
    return 0;
}
```

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

```
#include<stdio.h>
int main()
{
    int n;
    printf("1. Monday\n");
    printf("2. Tuesday\n");
    printf("3. Wednesday\n");
    printf("4. Thursday\n");
    printf("5. Friday\n");
    printf("6. Saturday\n");
    printf("7. Sunday\n");

    printf("Enter the week number :");
    scanf("%d",&n);
    switch (n)
    {
    case 1:
        printf("Start with great energy");
        break;
    case 2:
        printf("Good day for marketing");
        break;
    case 3:
        printf("Spend some time with your hobbies");
        break;
    case 4:
        printf("Save some money");
        break;
    case 5:
        printf("Try new food");
        break;
    case 6:
        printf("Play Games");
        break;
    case 7:
        printf("Enjoy your life");
        break;
    default:
        printf("invalid");
        break;
    }
    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.

```c
#include<stdio.h>
int main()
{
    int a,b,c,n;
    printf("Enter your choice :\n");
    printf("1. Isosceles Triangle\n");
    printf("2. Right Angled Triangle\n");
    printf("3. Equilateral Triangle\n");
    scanf("%d",&n);
    printf("Enter sides of triangle :");
    scanf("%d%d%d",&a,&b,&c);
    switch(n)
    {
    case 1:
        if( a==b || b==c || c==a )
            printf("The given triangle is isosceles");
        else
            printf("The given triangle is not isosceles");
        break;
    case 2:
        if( (a*a)+(b*b)==(c*c) || (a*a)+(c*c)==(b*b) || (c*c)+(b*b)==(a*a) )
            printf("The given triangle is Right Angled Triangle");
        else
            printf("The given triangle is not Right Angled Triangle");
        break;
    case 3:
        if( a==b && b==c )
            printf("The given triangle is equilateral");
        else
            printf("The given triangle is not equilateral");
        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");
```

```c
#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;
}
```

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

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter year : ");
    scanf("%d",&n);
    switch (n%4==0 || n%400==0)
    {
    case 1:
        printf("%d is leap year",n);
        break;

    case 0:
        printf("%d is not a leap year",n);
        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.

```
#include<stdio.h>
int main()
{
    int n;
    double total=0,charge;
    printf("Enter electricity unit :");
    scanf("%d",&n);
    switch (n)
    {
    case 0 ... 50:
        charge = n*0.50 ;
        total = charge*0.2 + charge ;
        printf("Total electricity bill : %lf",total);
        break;
```

```
    case 51 ... 150:
        charge = n*0.75 ;
        total = charge*0.2 + charge ;
        printf("Total electricity bill : %lf",total);
        break;
    case 151 ... 250:
        charge = n*1.20 ;
        total = charge*0.2 + charge ;
        printf("Total electricity bill : %lf",total);
        break;
    default:
        charge = n*1.50 ;
        total = charge*0.2 + charge ;
        printf("Total electricity bill : %lf",total);
        break;
    }
    return 0;
}
```

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 n;
    printf("Enter a number :");
    scanf("%d",&n);
    switch ((n>-1))
    {
    case 1:
        printf("after changing sign number is %d",(n*-1));
        break;
    case 0:
        printf("after changing sign number is %d",(n*-1));
        break;
    }
    return 0;
}
```

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

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter an even number :");
    scanf("%d",&n);
    switch (n%2==1)
    {
    case 0:
        printf("Nearest upper odd number %d",n+1);
        break;
    case 1:
        printf("Enter valid even number");
    }
    return 0;
```

```
}
```

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

```
#include<stdio.h>
#include<math.h>
int main()
{
    float a,b,c;
    float r1,r2,img,dis;
    printf("Enter values of a, b, c of quadratic equation (aX^2 + bX + c) : ");
    scanf("%f%f%f",&a,&b,&c);

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

    switch (dis>0)
    {
    case 1:
        r1 = (-b + sqrt(dis))/(2*a);
        r2 = (-b - sqrt(dis))/(2*a);
        printf("Two distinct and real roots exists: %.2f and %.2f",r1,r2);
        break;
    case 0:
        switch (dis<0)
        {
        case 1:
            r1 = r2 = -b/(2*a);
            img = sqrt(-dis)/(2*a);
            printf("Two distinct and complex roots exists : ( %.2f + i%.2f ) and ( %.2f
- i%.2f )",r1,img,r2,img);
            break;
        case 0:
            r1 = r2 = -b/(2*a) ;
            printf("Two equal and real roots exists: %.2f and %.2f", r1, r2);
            break;
        }
        break;
    }
    return 0;
}
```