Assignment 9 Solution

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

```
//Solution:

#include<stdio.h>

int main(){
    int num;
    printf("Enter the month number:");
    scanf("%d",&num);
    switch(num)
    {
        case 1:printf("January has 31 days");
        break;

        case 2:printf("February has 28/29 days");
        break;

        case 3:printf("March has 31 days");
        break;

        case 4:printf("April has 30 days");
        break;

        case 5:printf("May has 31 days");
        break;

        case 6:printf("June has 30 days");
        break;

        case 7:printf("July has 31 days");
        break;

        case 8:printf("August has 30 days");
        break;

        case 9:printf("September has 31 days");
        break;

        case 10:printf("October has 30 days");
        break;
```

```
        case 11:printf("November has 31 days");
        break;

        case 12:printf("December has 30 days");
        break;

        default:printf("Invalid month number: %d ",num);
        break;
    }
    return 0;
}
```

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

```
// a. Addition
// b. Subtraction
// c. Multiplication
// d. Division
// e. Exit

//Solution:

#include<stdio.h>

int main(){
    int i,num,num1,num2,op=0;
    printf("Enter two number:");
    scanf("%d %d",&num1 ,&num2);

    while(i=1)
    {
        printf("\nEnter your Choice: ");
        printf("\n1.Addition");
        printf("\n2.Substraction");
        printf("\n3.Multiplication");
        printf("\n4.Division");
        printf("\n5.Exit\n");
        scanf("%d",&num);
        if(num==5)
        {
            printf("Program Exited ");
            break;
        }
```

```
        printf("Your choice is: %d",num);
        switch(num)
        {
            case 1:
            op=num1+num2;
            printf("\nAddition of two number is %d",op);
            break;

            case 2:
            printf("\nSubtraction of two number is %d",num1-num2);
            break;

            case 3:
            printf("\nMultiplication of two number is %d",num1*num2);
            break;

            case 4:
            printf("\nDivision of two number is %d",num1/num2);
            break;

            case 5:
            i=0;
            break;

        }
    }
    return 0;
}
```

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

```
//Solution:

#include<stdio.h>

int main(){
    int num;
    printf("Enter a day number:");
    scanf("%d",&num);
    switch(num)
    {
        case 1: printf("\nAll the very best for the day. \nMay luck be with your sides always and forever. I wish you have a great day ahead.");
```

```
        break;

        case 2:printf("\nI hope your heart brims with joy and your body with
energy throughout this lovely day. Have a good day!");
        break;

        case 3:printf("\nMay you find the reasons to love yourself and the world
a bit more today. Enjoy your day!");
        break;

        case 4:printf("\nEvery day comes with renewed hope and new opportunities,
make sure to seize them! Have a nice day!");
        break;

        case 5:printf("\nNo matter what you are going through, I wish all the bad
things disappear and happiness comes to you. Have a wonderful day!");
        break;

        case 6:printf("\nHope you find passion in your work and peace in your
workplace. Have a great day at work!");
        break;

        case 7:printf("\nFollow your passion. \nGo where your heart takes you.
\nThis is your day, make it count!");
        break;

        default: printf("\nEntered a invalid Week day");
        break;
    }
    return 0;
}
```

Q.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

//Solution:
```

```c
#include<stdio.h>

int main(){
    int num=1,num1,l ,b, h;
    while(num)
    {
        printf("\n\n**************\"Enter your Choice:\"***************");
        printf("\n\n1.Check whether a given set of three numbers are lengths of
an isosceles triangle or not");
        printf("\n\n2.Check whether a given set of three numbers are lengths of
sides of a right angled triangle or not");
        printf("\n\n3.Check whether a given set of three numbers are equilateral
triangle or not\n");
        printf("\n4.Exit\n");
        scanf("%d",&num1);
        if(num1==4)
        {
            printf("Program Exited");
            break;
        }
        printf("\nEnter length of triangle:");
        scanf("%d",&l);
        printf("\nEnter breadth of triangle:");
        scanf("%d",&b);
        printf("\nEnter height of triangle:");
        scanf("%d",&h);

        switch(num1)
        {
            case 1:
            if(l==b || h==l || b==h)
                printf("Is a Isosceles Triangle");
            else
                printf("Is not a Isosceles Triangle");
            break;

            case 2:
                h=h*h;
                l=l*l;
                b=b*b;
            if(h==(l+b))
                printf("right angled triangle");
            else
                printf("Not a right angle triangle");
            break;
```

```
            case 3:
            if(l==b && b==h && h==l)
                printf("Is a Equilateral Triangle ");
            else
                printf("Is not a Equilateral Triangle");
            break;

            case 4:
            break;

            default: printf("Entered Invalid option");
            break;
        }

        num++;
    }
    return 0;
}
```

Q.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");
//Solution

#include <stdio.h>

int main()
{
    int var;
    printf("Enter a number:");
    scanf("%d",&var);
    switch(var)
    {
        case 1: printf("good");
        break;
```

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

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

        default:
            printf("invalid");
        break;
    }
    return 0;
}
```

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

```
//Solution:

#include<stdio.h>
int main()
{
    int num;
    printf("Enter a  year:");
    scanf("%d",&num);

    int valid=num%4==0 || num%400==0;
    switch(valid)
    {
        case 1: printf("\nYear is leap year");
        break;

        default: printf("\nYear is not a leap year");
        break;
    }
}
```

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

```
//Solution:
```

```c
#include<stdio.h>

int main()
{
    int num;
    printf("Enter a number:");
    scanf("%d",&num);
    switch(num>0)
    {
        case 1:printf("The entered positive number %d is converted to negative:
%d",num,0-num);
        break;

        case 0: printf("The entered negative number %d is converted to positive:
%d",num,0-num);
        break;
    }
    return 0;
}
```

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

```c
//Solution:

#include<stdio.h>
int main()
{
    int num;
    printf("Enter a even number:");
    scanf("%d",&num);
    switch(num%2)
    {
        case 0: printf("the nearest odd number of %d is %d",num,num+1);
        break;

        case 1: printf("odd number is %d",num);
        break;
    }
    return 0;
}
```

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

```c
//solution
#include <stdio.h>
int main()
{
    int num=0,a,b,c;
    printf("Enter value of a :");
    scanf("%d",&a);
    printf("Enter value of b :");
    scanf("%d",&b);
    printf("Enter value of c :");
    scanf("%d",&c);
    num=(b*b)-4*a*c;
    switch(num<0 || num>0 || num==0)
    {
        case 1:switch(num>0)
                {
                    case 1:printf("\nThe equation has two real and different
roots");
                    break;
                }
        case 2: switch(num==0)
                {
                    case 1:printf("\nThe equation has only one real root");
                    break;
                }

        case 3: switch(num<0)
                {
                    case 1: printf("\nThe equation has two complex roots");
                    break;
                }
    }
    return 0;
}
```