Assignment - 9 A Job Ready Bootcamp in C++, DSA and IOT MySirG

Switch Case Problems

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

```
#include<stdio.h>
#include<conio.h>
int main()
{
   int month;
   printf("Enter the month number: ");
   scanf("%d",&month);
   switch(month)
   {
      case(1):
         printf("31");
         break;
      case(3):
         printf("31");
         break;
      case(5):
         printf("31");
         break;
      case(7):
         printf("31");
         break;
      case(8):
         printf("31");
         break;
```

```
        case(10):
            printf("31");
            break;
        case(12):
            printf("31");
            break;
        case(4):
            printf("30");
            break;
        case(6):
            printf("30");
            break;
        case(9):
            printf("30");
            break;
        case(11):
            printf("30");
            break;
        case(2):
            printf("28 or 29");
            break;
        default:
            printf("not a month");
            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>
#include<conio.h>
#include<stdlib.h>
int main()
{
   int a,b,i=1;
   int operation;
   while(i)
   {
      printf("enter what you want to do: 1 for addition , 2 for substraction
, 3 for multiplication , 4 for division , 5 for exit.\n");
      scanf("%d",&operation);
      switch(operation)
      {
         case(1):
            printf("enter two numbers:");
            scanf("%d %d",&a,&b);
            printf("addition is %d\n",a+b);
            break;
         case(2):
            printf("enter two numbers:");
            scanf("%d %d",&a,&b);
            printf("substraction is %d\n",a+b);
            break;
         case(3):
            printf("enter two numbers:");
            scanf("%d %d",&a,&b);
            printf("multiplication is %d\n",a-b);
```

```
            break;
        case(4):
            printf("enter two numbers:");
            scanf("%d %d",&a,&b);
            printf("multiplication is %d\n",a*b);
            break;
        case(5):
           exit(0);
           break;
        default:
            printf("enter correct key.\n");

        }
    }
    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>
#include<conio.h>
#include<stdlib.h>
int main()
{
   int day;
   printf("enter the week day: ");
   scanf("%d",&day);
   switch(day)
   {
        case(1):
           printf("It's Sunday ! May your day go peaceful.");
```

```
            break;
        case(2):
            printf("It's Monday! Be energetic ! ");
            break;
        case(3):
            printf("It's Tuesday! Start new things. Best of luck! ");
            break;
        case(4):
            printf("It's Wednesday !Have a great day! ");
            break;
        case(5):
           printf("It's Thursday! A pious and happy day!");
           break;
        case(6):
            printf("It's Friday! Weekend is nearer!");
        case(7):
            printf("It's Saturday! Half day work load ! A happy day !");
        default:
            printf("Please enter correct day number..");

   }
      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

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
int main()
{
   int i=1,triangle;
   float a,b,c;
   while(i)
   {
      printf("\nenter what to check: 1. Check whether a given set of three numbers are lengths of an isosceles triangle or not 2. Check whether a given set of three numbers are lengths of sides of a right angled triangle or not 3. Check whether a given set of three numbers are equilateral triangle or not 4. Exit \n ");
      scanf("%d",&triangle);
      switch(triangle)
      {
            case(1):
               printf("Enter lengths of the sides of the triangle: ");
               scanf("%f %f %f",&a,&b,&c);
               if(a+b>c && a+c>b && b+c>a && (a==b && a==c))
                  printf("Isosceles triangle.");
               else
                  printf("Not a isosceles triangle ");
               break;
            case(2):
               printf("Enter lengths of the sides of the triangle: ");
               scanf("%f %f %f",&a,&b,&c);
               if(a+b>c && a+c>b && b+c>a &&
(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 a Right angled triangle.");
               break;
            case(3):
               printf("Enter lengths of the sides of the triangle: ");
```

```
                scanf("%f %f %f",&a,&b,&c);
                if(a+b>c && a+c>b && b+c>a && (a==b)||(b==c)||(a==c))
                   printf("Equilateral triangle.");
                else
                   printf("Not an equilateral triangle.");
                break;
             case(4):
                exit(0);
                break;
             default:
                printf("Please enter correct key.");

          }
       }
          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");
        #include<stdio.h>
        #include<conio.h>
        #include<stdlib.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.");

        }
        return(0);
    }
```

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

```
#include<stdio.h>

#include<conio.h>

#include<stdlib.h>

int main()

{
```

```
int no,year;

   printf("enter the year you want-1 for century year, 2 for non
 century year: ");

   scanf("%d",&no);

   switch(no)

   {

          case(1):

             printf("Enter the year: ");

             scanf("%d",&year);

             if(year%400==0)

                printf("Leap year.");

             else

                printf("Not a leap year.");

             break;

          case(2):

             printf("Enter the year: ");

             scanf("%d",&year);
```

```
            if(year%4==0)
                printf("Leap year.");
            else
                printf("Not a leap year.");
            break;
        default:
            printf("Invalid.");

    }
    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>
#include<conio.h>
#include<stdlib.h>
int main()
{
   int units,n;
   float bill;
      printf("Enter the units of electricity used: ");
      scanf("%d",&units);
      printf("Enter 1 for less than or equal to 50 units. 2 for less than or equal to 150 units 3 for less than or equal to 250 units and 4 for units greater than 250.");
      scanf("%d",&n);
            switch(n)
        {
               case(1):
                  bill=units*0.5+0.2;
                  printf("Total electricity bill is %f",bill);
                   break;
               case(2):
                     bill=50*0.5+(units-50)*0.75+0.2;
                  printf("Total electricity bill is %f",bill);
                   break;
               case(3):
                     bill=50*0.5+100*0.75+(units-150)*1.20+.2;
                  printf("Total electricity bill is %f",bill);
                  break;
               case(4):
                     bill=50*0.5+100*0.75+100*1.20+(units-250)*1.50;
                  printf("Total electricity bill is %f",bill);
                  break;
               default:
                  printf("Invalid.Please, enter again");
```

```
                    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>
#include<conio.h>
int main()
{
   int a,num;
   printf("Enter a number:1 for +ve number and 2 for -ve number.");
   scanf("%d",&a);
   switch(a)
   {
      case(1):
         printf("enter the number: ");
         scanf("%d",&num);
         printf("%d",-1*num);
         break;
      case(2):
         printf("enter the number: ");
         scanf("%d",&num);
         printf("%d",-1*num);
         break;
      default:
         printf("Invalid.");
         break;
   }
```

```
    return 0;
}
```

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

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a,n;
    printf("Enter 1 for even 2 for odd: ");
    scanf("%d",&a);
    switch(a)
    {
        case(1):
            printf("enter the number: ");
            scanf("%d",&n);
            printf("%d",n+1);
            break;
        case(2):
            printf("enter the number: ");
            scanf("%d",&n);
            printf("%d",n+1);
            break;
        default:
            printf("invalid");
            break;
    }
    return 0;
}
```

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

```
#include<stdio.h>
#include<conio.h>
int main()
{
   int a,b,c,d,root;
   printf("Enter the coefficients of unknown: ");
   scanf("%d %d %d",&a,&b,&c);
   d=(b*b-4*a*c);
   printf("d=%d",d);
   printf("Enter 1 if d>0 , 2 if d=0 and 3 if d<0");
   scanf("%d",&root);
   switch(root)
   {
      case(1):
         printf("Roots are real and distinct. %d %d",(-b+d)/(2*a),(-b-d)/(2*a));
         break;
      case(2):
         printf("Roots are real and equal. %d ",-b/(2*a));
         break;
      case(3):
         printf("Roots are imaginary.");
      default:
         printf("Invalid.");
         break;
   }
   return 0;
}
```