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>
int main()
{
   int a;
   printf("enter the month number: ");
   scanf("%d",&a);
   switch (a)
   {
   case 1:
      printf("this month has 31 days");
      break;
   case 2:
      printf("this month has 28 days/29 days if leap year");
      break;

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

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

   case 5:
      printf("this month has 31 days");
      break;
```

```
    case 6:
        printf("this month has 30 days");
        break;

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

    case 8:
        printf("this month has 31 days");
        break;

    case 9:
        printf("this month has 30 days");
        break;

    case 10:
        printf("this month has 31 days");
        break;

    case 11:
        printf("this month has 30 days");
        break;
    case 12:
        printf("this month has 31 days");
        break;
    default:
        printf("wrong choice");
        break;
    }
}
```

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 s;
   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",&s);
   int a,b;
   printf("enter two number: ");
   scanf("%d %d",&a,&b);
   switch (s)
   {
   case 'a':
      printf("%d + %d = %d",a,b,a+b);
      break;

   case 'b':
      printf("%d - %d = %d",a,b,a-b);
      break;
```

```
    case 'c':
        printf("%d * %d = %d",a,b,a*b);
        break;

    case 'd':
        printf("%d / %d = %f",a,b,(float)a/b);
        break;

    case 'e':
        printf("exit thanks");
        break;

    default:
    printf("wrong choice");
        break;
    }
    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 week;
    printf("enter week day: ");
    scanf("%d",&week);
    switch (week)
    {
    case 1:
```

```
   printf("today is monday\n goto work");
   break;

case 2:
   printf("today is tuesday\n aaj mangalwar h");
   break;

case 3:
   printf("today is wednesday");
   break;

case 4:
   printf("today is thrusday");
   break;

case 5:
   printf("today is friday");
   break;

case 6:
   printf("today is saturday.");
   break;

case 7:
   printf("today is sunday enjoy your day");
   break;

default:
printf("wrong choice");
   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

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
   char test;
   int a,b,c;

   printf("\npress a for Check whether a given set of three numbers are lengths of an isosceles triangle or not");
   printf("\npress b for  Check whether a given set of three numbers are lengths of sides of a right angled triangle or not");
   printf("\npress c for Check whether a given set of three numbers are equilateral triangle or not");
   printf("\npress d for exit: \n");
   fflush(stdin);
   printf("\nplease enter your choice: ");
   scanf("%c",&test);
   printf("pleasee enter the side of triangle: ");
   scanf("%d  %d %d",&a,&b,&c);
   switch (test)
```

```
   {
   case 'a':
      a==b||b==c||c==a?printf("given triangle is isoceles triangle"):printf("not an isoceles triangle");
      break;

   case 'b':
      if(a*a==b*b+c*c || b*b==a*a+c*c || c*c==a*a+b*b)
      printf("given triangle is right angle triangle");
      else
      printf("given triangle is not a right angle triangle");
      break;

   case 'c':
     a==b==c?printf("given triangle is equilateral triangle"):printf("given triangle is not equilateral
triangle");
      break;

   case 'd':
      printf("exiting");
      break;

   default:
   printf("wrong choice");
      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");
```

```
#include<stdio.h>
int main()
{
   int var;
   printf("enter value from 1 to 3: ");
   scanf("%d",&var);
   switch (var)
   {
   case 1:
   printf("good");
   break;

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

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

   default:
   printf("invalid");
```

```
        break;
    }
}
```

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

```
#include<stdio.h>
int main()
{
    int year,leap=0;
    printf("enter year: ");
    scanf("%d",&year);
    leap=(((year%4==0) && (year%100!=0))||(year%400==0));
    switch(leap)
    {
    case 1:
        printf("given yeaar is leap year");
        break;
    case 0:
        printf("given yeaar is not leap year");
        break;
    default:
        printf("wrong input");
        break;
    }
}
```

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 b;
   float bill;
   printf("enter the unit of electricity: ");
   scanf("%f", &bill);
   if (bill <= 50)
   {
      b = 1;
   }
   else if (bill > 50 && bill <= 150)
   {
      b = 2;
   }
   else if (bill > 150 && bill <= 250)
   {
      b = 3;
   }
   else
      b = 4;
```

```
   switch (b)
   {
   case 1:
      printf("your bill of %f unit is %f rs", bill, bill * 0.5 * 1.2);
      break;
   case 2:
      printf("your bill of %f unit is %f rs", bill, bill * 0.75 * 1.2);
      break;
   case 3:
      printf("your bill of %f unit is %f rs", bill, bill * 1.20 * 1.2);
      break;
   case 4:
      printf("your bill of %f unit is %f rs", bill, bill * 1.50 * 1.2);
      break;

   default:
      printf("error");
      break;
   }
}
```

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

```
   switch (a/a)
   {
   case 1:
      a=a*-1;
      break;

   case -1:
      a=-1*a;
      break;

   default:
      break;
   }
   printf("\n%d",a);
}
```

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

Switch Statement.

```
#include<stdio.h>
int main()
{
   int a;
   printf("enter any number: ");
   scanf("%d",&a);
   switch (a%2)
   {
   case 0:
      a=a+1;
      break;
```

```
    default:
        break;
    }
    printf("\n%d",a);
}
```

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, descriminant, r1, r2;
    printf("enter the quadratic equation in form of \"ax^2+bx+c");
    scanf("%fx^2+%fx+%f", &a, &b, &c);
    descriminant = (b * b) - 4 * a * c;
    switch (descriminant > 0)
    {
    case 1:
        r1 = (-b + sqrt(descriminant)) / (a * 2);
        r2 = (-b - sqrt(descriminant)) / (a * 2);
        printf("%d  and %d are real distinct root of of given equation", r1, r2);
        break;
    case 0:
        switch (descriminant < 0)
        {
        case 1:
            r1 = -b / (a * 2);
            r2 = sqrt(-descriminant) / 2 * a;
```

```
            printf("roots are %.2f + i%.2f , %.2f - i%.2f ", r1, r2, r1, r2);


            break;


        case 0:
            r1 = r2 = -b / (a * 2);
            printf("%.2f $.2f are two roots", r1, r2);


            break;
        }
    }
}
```