Assignment 5

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 month;
   printf("Enter a month number ");
   scanf("%d", &month);

   switch(month)
   {
      case 2: printf("28 or 29 days");
         break;
      case 4:
      case 6:
      case 9:
      case 11: printf("30 days");
         break;

      case 1:
      case 3:
      case 5:
      case 7:
      case 8:
      case 10:
      case 12: printf("31 days");
         break;
      default: printf("Invalid month name");
   }
}
```

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

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
   int a, b;
   int c;
   while(1)
   {
      printf("\n1. Addition");
      printf("\n2. Subtraction");
      printf("\n3. Multiplication");
      printf("\n4. Division");
      printf("\n5. Exit");
```

```
        printf("\n\nEnter the choice ");
        scanf("%d",&c);

        switch(choice)
        {
           case 1:  printf("\nEnter the numbers ");
                    scanf("%d%d",&a,&b);
                    printf("\nAddition is %d + %d = %d",a,b,a+b);
                 break;

           case 2:  printf("\nEnter the numbers ");
                    scanf("%d%d",&a,&b);
                    printf("\nSubtraction is %d - %d = %d",a,b,a-b);
                 break;

           case 3:  printf("\nEnter the numbers ");
                    scanf("%d%d",&a,&b);
                    printf("\nMultiplication is %d * %d = %d",a,b,a*b);
                 break;

           case 4:  printf("\nEnter the numbers ");
                    scanf("%d%d",&a,&b);
                    printf("\nquotient is %d / %d = %d",a,b,a/b);
                 break;

           case 5:  exit(1);
                 break;

           default:   printf("\nInvalid input");
        }
    }
}
```

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 day_num;
   printf("Enter the day number of a week ");
   scanf("%d",&day_num);
   switch (day_num)
   {
      case 1:  printf("Have a nice day");
         break;
      case 2:  printf("wish you a good health");
         break;
      case 3:  printf("wish you a good wealth");
         break;
      case 4:  printf("Learn more and keep exploring");
         break;
      case 5:  printf("Think positive");
         break;
```

```
        case 6:  printf("Have a patience");
           break;
        case 7:  printf("Enjoy your holyday");
           break;

        default: printf("Please enter valid day number ");
           break;
     }
}
```

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()
{
    int a, b, c, choice;
    while (1)
    {
        printf("\n1 for Check isosceles triangle or not");
        printf("\n2 for Check right angled triangle or not");
        printf("\n3 for Check equilateral triangle or not");
        printf("\n4 for exit ");

        printf("\n\nenter a choice ");
        scanf("%d",&choice);
        switch (choice)
        {
            case 1: printf("\nEnter the numbers ");
                    scanf("%d%d%d",&a,&b,&c);
                    if (a==b || b==c || c==a)
                    {
                        printf("isosceles triangle");
                    }
                    else
                    {
                        printf("not isosceles triangle");
                    }
                break;
            case 2: printf("\nEnter the numbers ");
                    scanf("%d%d%d",&a,&b,&c);
                    if ((c*c) == (a*a + b*b))
                    {
                        printf("right angled triangle ");
                    }
                    else
                    {
                        printf("not right angled triangle ");
                    }
                break;
```

```
        case 3: printf("\nEnter the numbers ");
                scanf("%d%d%d",&a,&b,&c);
                if (a == b && b == c && c == a)
                {
                   printf("equilateral triangle");
                }
                else
                {
                   printf("not equilateral triangle");
                }
             break;
        case 4: exit(1);
             break;

        default: printf("\nenter valid input ");
             break;
      }
   }
}
```

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 a var ");
   scanf("%d",&var);
   switch (var)
   {
      case 1:  printf("Good");
         break;
      case 2:  printf("better");
         break;
      case 3:  printf("best");
         break;
      default: printf("invalid");
   }

}
```

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

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

```
{
   int year;
   printf("enter a year ");
   scanf("%d",&year);
   switch ((year%100==0 && year%4==0) || year%4==0)
   {
       case 1: printf("Leap year");
           break;
       case 0: printf("Not leap year");
           break;
   }
}
```

7. Program to take the value from the user as input electricity unit charges and calculate total electricity bill accordin g 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.

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>0)
    {
        case 1: printf("%d of negative number is %d ",n,-n);
            break;
        case 0: printf("%d of positive number is %d ",n,-n);
            break;
    }
}
```

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

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

```
            break;

        case 0: printf("%d is already odd number ",n);
            break;
    }
}
```

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