01)

a. Display the numbers from 1 to 10 line by line.

```
#include <stdio.h>
int main()
{
   int num=1;
   while(num<=10){
      printf("%d\n",num);
      num++;
   }
return 0;
}
```

b. Display the numbers from 10 to 1 line by line.

```
#include <stdio.h>
int main()
{
   int num=10;
   while(num>=1){
      printf("%d\n",num);
      num--;
   }
return 0;
}
```

C. Display the sequence 1,3,5,7,9 line by line.

```
#include <stdio.h>
int main()
{
   int num=1;
   while(num<10){
      printf("%d\n",num);
      num=num+2;
   }
return 0;
}
```

d. Display all the odd numbers between 1 to 100.

```
#include <stdio.h>
int main()
{
   int n=3;
   while(n<100){
      printf("%d\n",n);
      n=n+2;
   }
return 0;
}
```

e. Display all the even numbers between 1 to 100.

```
#include <stdio.h>
int main()
{
   int n=2;
   while(n<100){
      printf("%d\n",n);
      n=n+2;
   }
return 0;
}
```

f. Display all the numbers that are multiple of 3 between 1 to 100.

```
#include <stdio.h>
int main()
{
   int num=3;
   while(num<100){
      printf("%d\n",num);
      num=num+3;
   }

return 0;
}
```

g. Display the summation of all the numbers from 1 to 10.

```
#include <stdio.h>
int main()
{
   int n=1,sum=0;
   while(n<=10){
      sum=sum+n;
      n++;
   }
    printf("summation is:%d\n",sum);
return 0;
}
```

h. Display the multiplication of all the numbers from 1 to 10.

```
#include <stdio.h>
int main()
{
   int n=1,m=1;//m=multiplication
   while(n<=10){
      m=m*n;
      n++;
   }
    printf("multiplication is:%d\n",m);
return 0;
}
```

i. Display the number of even numbers from 1 to 50.

```
#include <stdio.h>
int main()
{
   int num=1,count=0;
   while(num<=50){
         if(num%2==0){
            count=count+1;
         }
   num++;
   }
   printf("Number of even numbers:%d\n",count);
return 0;
}
```

j. Display the number of odd numbers from 1 to 50.

```
#include <stdio.h>
int main()
{
   int num=1,count=0;
   while(num<=50){
         if(num%2==1){
            count=count+1;
         }
   num++;
   }
   printf("Number of odd numbers:%d\n",count);
return 0;
}
```

02) Write a program that calculates and prints the sum of the even integers from 2 to 30.

```
#include <stdio.h>
int main()
{
   int sum=0,n=2;
   do{
      if(n%2==0){
         sum=sum+n;
      }
   n++;
   }while(n<=30);
   printf("sum of the even integers from 2 to 30 is:%d\n",sum);
return 0;
}
```

03) Write a program that calculates and prints the product of the odd integers from 1 to 15.

```
#include <stdio.h>
int main()
{
   int p=1,n=1;//p=product, n=number
   do{
      if(n%2==1){
         p=p*n;
      }
   n++;
   }while(n<=15);
   printf(" product of the odd integers from 1 to 15 is:%d\n",p);
return 0;
}
```

04) Write a program to print the sum and the count of odd integers between 1 and 99 using a loop.

```
#include <stdio.h>
int main()
{
   int sum=0,count=0,num=2;
   do{
      if(num%2==1){
         count=count+1;
         sum=sum+num;
      }
   num++;
   }while(num<99);
   printf("Sum is:%d\n",sum);
   printf("count is:%d\n",count);
return 0;
}
```

05) Write a program to print the first 'n' terms of the following series using a loop. (while/ do while) Input the value for variable 'n' through the keyboard. 1, 5, 9, 13, …., n

```
#include <stdio.h>
int main()
{
   int a=1,num;
   printf("Enter your number:");
   scanf("%d",&num);

   do{
      printf("%d\t",a);
      a=a+4;
   }while(a<=num);

return 0;
}
```

06) Write a program to get two integers as keyboard inputs and divide first integer by the second integer. Then print the quotient and remainder. (Check whether the second number is not equal to 0 before dividing.)

```
#include <stdio.h>
int main()
{
   int n1,n2,x,y;

   printf("Enter number 1:");
   scanf("%d",&n1);
   printf("Enter number 2:");
   scanf("%d",&n2);

   if(n2!=0){
       x=n1/n2;
       y=n1%n2;

      printf("The quotient is:%d\n",x);
      printf("The remainder is:%d\n",y);
   }
   else{
      printf("Division is undefined\n");
   }
return 0;
}
```

07) Write a program to find out that the first number entered is divisible by the second number entered or not.

```
#include <stdio.h>
int main()
{
   int x,y;

   printf("enter first number:");
   scanf("%d",&x);
   printf("enter second number:");
   scanf("%d",&y);

   if(x%y==0){
      printf("Divisible by the second number\n");
   }
   else{
      printf("Not Divisible by the second number\n");
   }
```

```
return 0;
}
```

08) Write a program to display the relationship of two integers entered by user using = or > or < sign.

```
#include <stdio.h>
int main()
{
   int n1,n2;

   printf("Enter first number:");
   scanf("%d",&n1);
   printf("Enter second number:");
   scanf("%d",&n2);

   if(n1>n2){
      printf("%d is larger than %d\n",n1,n2);
   }
   else if(n1<n2){
      printf("%d is larger than %d\n",n2,n1);
   }
   else{
      printf("%d is equal to %d\n",n1,n2);
   }
return 0;
}
```

09) Make a program using Nested-if statement to find the greater number among 3 numbers and with the help of logical operators.

```
#include <stdio.h>
int main()
{
   int a,b,c;
   printf("Enter number 1:");
   scanf("%d",&a);
   printf("Enter number 2:");
   scanf("%d",&b);
   printf("Enter number 3:");
   scanf("%d",&c);

  if((a>c)||(b>c)){
   if(a>b){
      printf("%d\n",a);
   }
   else{
      printf("%d\n",b);
   }
  }
  else{
      if((a>b)||(c>b)){
         if(a>c){
            printf("%d\n",a);
         }
         else{
            printf("%d\n",c);
         }
      }
  }

return 0;
}
```

10) Make a program using Nested-if statement to find the greater number among 3 numbers without the help of logical operators.

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

   printf("Enter number 1:");
   scanf("%d",&a);
   printf("Enter number 2:");
   scanf("%d",&b);
   printf("Enter number 3:");
   scanf("%d",&c);

   if(a>b){
      if(a>c){
         printf("%d\n",a);
      }
      else{
         printf("%d\n",c);
      }
   }
   else{
      if(b>c){
         printf("%d\n",b);
      }
      else{
         printf("%d\n",c);
      }
   }
return 0;
}
```

11) Write a program to display the following grades for given marks.

```
#include <stdio.h>
int main()
{
   int m;
   printf("Enter marks:");
   scanf("%d",&m);

   if((100>=m)&&(m>=90)){
      printf("A\n");
   }
   else if((89>=m)&&(m>=80)){
      printf("B\n");
   }
   else if((79>=m)&&(m>=70)){
      printf("C\n");
   }
   else{
      printf("D\n");
   }

return 0;
}
```

12) Write a program to decide whether there is a profit or loss, when cost price (CP) and selling price (SP) of items are given.

```
#include <stdio.h>
int main()
{
   int sp,cp;
   printf("Enter cost price:");
   scanf("%d",&cp);
   printf("Enter selling price:");
   scanf("%d",&sp);

   if(sp>cp){
      printf("profit\n");
   }
   else{
      printf("loss\n");
   }

return 0;
}
```

13) Calculate the fine for speeding in a town area as follows;

- **500 rupees if the speed is between 31 and 40 mph**
- **750 rupees if the speed is between 41 and 50 mph**
- **1000 rupees if the speed is above 50 mph .Write a program to calculate the fine when the speed is given from the keyboard.**

```
#include <stdio.h>
int main()
{
   int s;
   printf("Enter the speed:");
   scanf("%d",&s);

   if((31<s)&&(s<40)){
      printf("Your fine is 500 rupees\n");
   }
   else if((41<s)&&(s<50)){
      printf("Your fine is 750 rupees\n");
   }
   else{
      printf("Your fine is 1000 rupees\n");
   }

return 0;
}
```

14) A man is paid at the hourly rate of Rs.50/-per hour for the first 30 hours worked in a week. Thereafter the overtime is paid at 1.5 times the hourly rate for the next 25 hours and 2 times the hourly rate for further hours worked. Input the number of hours worked in a week and print weekly wages.

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

float h;
printf("Input the number of hours worked : ");
scanf("%f", &h);

if(h<=30)
 printf("Weekly salary is : Rs.%.2f", h*50);
else if((30<h)&&(h<=75))
 printf("Weekly salary is : Rs.%.2f", (30*50)+(h-30)*50*1.5);
else
 printf("Weekly salary is : Rs.%.2f", (30*50)+((h-30)*50*1.5)+((h-30-25)*50*2));

return 0;
}
```

15) Write a program to display the following comments for the grades entered by the user using a switch statement.
A-Excellent, B-Well Done, C-Good , D-You Pass ,F-Better Try Again, Other -nvalid Grade

```
 #include <stdio.h>
int main()
{
   char grade;
   printf("Enter grade:");
   scanf("%c",&grade);

   switch(grade){
    case 'A':
        printf("Excellent\n");
        break;
    case 'B':
        printf("Well Done\n");
        break;
    case 'C':
        printf("Good\n");
        break;
    case 'D':
        printf("You Pass\n");
        break;
    case 'F':
        printf("Better Try Again\n");
        break;
    default:
         printf("Invalid Grade\n");
   }


return 0;
}
```

16) Write a program to create a simple calculator to calculate and display addition, subtraction, multiplication and division depending upon user's choice using a switch statement. Get the user inputs as;

1. First number 2. Second number 3. An operator ('+' '-' '*' '/')

```
#include <stdio.h>
int main(){
char op;
float n1, n2;

printf("Enter the operator : ");
scanf("%c", &op);
printf("Enter the first number : ");
scanf("%f", &n1);
printf("Enter the second number : ");
scanf("%f", &n2);

switch(op){
case '+':
 printf("Addition is : %d", n1+n2);
 break;
case '-':
 printf("Subtraction is : %d", n1-n2);
 break;
case '*':
 printf("Multiplication is : %d", n1*n2);
 break;
case '/':
 if(n2!=0)
 printf("Division is : %f", n1/n2);
 else
 printf("Division is undefined.");
 break;
default:
 printf("Invalid Operator.");
}

return 0;
}
```