Loop Exercises::::::::::::::::::

1.
```
#include <stdio.h>
int main()
{
  int n,i;
  printf("Input a number : ");
  scanf("%d",&n);
  i=1;
  while(i<=n)
  {
    printf("%d\n",i);
    i++;
  }

   return 0;
}
```

2.
```
#include <stdio.h>
int main()
{
  int n,i;
  printf("Input a number : ");
  scanf("%d",&n);
  i=n;
  while(i>=1)
  {
    printf("%d\n",i);
    i--;
  }

   return 0;
}
```

3.
```
#include <stdio.h>
int main()
{
  char ch;

  printf("Showing a to z : ");
  ch=97;
  while(ch<=122)
  {
    printf("\n%c",ch);
    ch++;
  }

   return 0;
}
```

4.
```
#include <stdio.h>
int main()
{
  int i=1;
  printf("Showing even number between 1 to
100 : ");
  while(i<=100)
  {
     i++;
     if(i%2!=0)
     continue;
    printf("\n%d",i);
  }

   return 0;
}
```

5.
```
#include <stdio.h>
int main()
{
  int i=1;
  printf("Showing odd number between 1 to
100 : ");
  while(i<=100)
  {
     if(i%2!=0)
    printf("\n%d",i);
    i++;
  }

   return 0;
}
```

6.
```
#include <stdio.h>
int main()
{
   int i,n,sum=0;
   printf("Input a number : ");
   scanf("%d",&n);
   for(i=1;i<=n;i++)
     {sum+=i;
      printf("%d\n",i);}
   printf("Summetion all num = %d\n",sum);
   return 0;
}
```

7.

```
#include <stdio.h>
int main()
{
   int i,n,sum=0;
   printf("Input a number : ");
   scanf("%d",&n);
   for(i=1;i<=n;i++)
     { if(i%2==0)
       {sum+=i;
      printf("%d\n",i);}
      else
         continue;
     }
   printf("Summetion all even  num =
%d\n",sum);
   return 0;
}
```

8.

```
#include <stdio.h>
int main()
{
   int i,n,sum=0;
   printf("Input a number : ");
   scanf("%d",&n);
   for(i=1;i<=n;i++)
     { if(i%2!=0)
       {sum+=i;
      printf("%d\n",i);}
      else
         continue;
     }
   printf("Summetion all odd num =
%d\n",sum);
   return 0;
}
```

9.

```
#include <stdio.h>
int main()
{
   int n,i,m=1;
   printf("Input a number : ");
   scanf("%d",&n);
   for(i=1;i<=10;i++)
     {
        m=n*i;
        printf("%dx%d=%d\n",n,i,m);
     }
   return 0;
}
```

10.

```
#include<stdio.h>
int main()
{
   int n,t,count=0;
   printf("Input a number : ");
   scanf("%d",&n);
   while(n!=0)
   {
      t=n/10;
      count++;
      n=t;
   }
   printf("number of digit is %d\n",count);
   return 0;
}
```

11.

```
#include<stdio.h>
int main()
{
   int n,ld;
   printf("Input a number : ");
   scanf("%d",&n);
   ld=n%10;
   while(n>=10)
   {
      n=n/10;
   }
   printf("First digit of this number is =
%d\n",n);
   printf("Last digit of this number is =
%d\n",ld);
   return 0;
}
```

12.

```
#include<stdio.h>
int main()
{
   int n,ld,sum=0;
   printf("Input a number : ");
   scanf("%d",&n);
   ld=n%10;
   while(n>=10)
   {
     n=n/10  ;
   }
   sum=n+ld;
   printf("Summetion of first and last digit =
%d\n",sum);
   return 0;
}
```

13.

```
#include<stdio.h>
int main()
{
   int n,temp,rev=0,swap,l,f;
   printf("Input a number : ");
   scanf("%d",&n);
   temp=n;
   l=n%10;
   while(n>10)
   {
      n=n/10;
   }
   f=n;
   n=temp/10;
   while(n>10)
   {
      rev=rev*10+n%10;
      n=n/10;
   }
   swap=l;
   while(rev>0)
   {
      swap=swap*10+rev%10;
      rev=rev/10;
   }
   swap=swap*10+f;
   printf("%d\n",swap);
   return 0;
}
```

14.

```
#include<stdio.h>
int main()
{
   int n,sum=0,temp;
   printf("Input a number : ");
   scanf("%d",&n);
   while(n!=0)
   {
      temp=n%10;
      sum=sum+temp;
      n=n/10;
   }
   printf("%d",sum);
   return 0;
}
```

15.

```
#include<stdio.h>
int main()
{
   int n,prod=1,temp;
   printf("Input a number : ");
   scanf("%d",&n);
   while(n!=0)
   {
      temp=n%10;
      prod=prod*temp;
      n=n/10;
   }
   printf("%d",prod);
   return 0;
}
```

16.

```
#include<stdio.h>
int main()
{
   int n,rev=0,temp;
   printf("Input a number : ");
   scanf("%d",&n);
   while(n>0)
   {
      temp=n%10;
      rev=rev*10+temp;
      n=n/10;
   }
   printf("%d",rev);
   return 0;

}
```

17.

```
#include<stdio.h>
int main()
{
   int n,rev=0,temp,c;
   printf("Input a number : ");
   scanf("%d",&n);
   c=n;
   while(n>0)
   {
      temp=n%10;
      rev=rev*10+temp;
      n=n/10;
   }
   n=c;
   if(n==rev)
   printf("%d is palindrome",n);
   else
      printf("%d is not palindrome",n);
   return 0;

}
```

18.

```
#include<stdio.h>
int main()
{
   long int n;
   int freq[10],l,i;
   printf("Input a number : ");
   scanf("%d",&n);
   for(i=0;i<10;i++)
   {
      freq[i]=0;
   }
   while(n!=0)
   {
      l=n%10;
      freq[l]++;
      n=n/10;
   }
   for(i=0;i<10;i++)
   {
      printf("Frequency of %d = %d\n",i,freq[i]);
   }
     return 0;
}
```

19.

```
#include<stdio.h>
int main()
{
   int n,rev=0;
   printf("Input a number : ");
   scanf("%d",&n);
   while(n!=0)
   {
      rev=rev*10+n%10;
      n=n/10;
   }
   while(rev!=0)
   {
      switch(rev%10)
      {
      case 0:
         printf(" Zero ");
         break;
      case 1:
         printf("One ");
         break;
      case 2:
         printf("Two ");
         break;
      case 3:
         printf("Three ");
```

20.

```
#include<stdio.h>
int main()
{
  int i;
  printf("Showing all ASCII character with there
values : \n");
  for(i=0;i<256;i++)
  {
     printf("ASCII value of character %c =
%d\n",i,i);
  }
   return 0;
}
```

```
        break;
      case 4:
        printf("Four ");
        break;
      case 5:
        printf("Five ");
        break;
      case 6:
        printf("Six ");
        break;
      case 7:
        printf("Seven ");
        break;
      case 8:
        printf("Eight ");
        break;
      case 9:
        printf("Nine ");
        break;
      }
      rev=rev/10;
   }
   return 0;
}
```

21.

```
#include<stdio.h>
int main()
{
 int i,n,x;
 double y=1;
 printf("Input the value of x and n ,(x)^n : ");
 scanf("%d %d",&x,&n);
 for(i=1;i<=n;i++)
 {
   y=x*y;
 }
 printf("(%d)^%d = %lf\n",x,n,y);
 return 0;
}
```

22.

```
#include<stdio.h>
int main()
{
 int n,i;
 printf("Input a number to show all factors : ");
 scanf("%d",&n);
 for(i=1;i<=n;i++)
 {
   if(n%i==0)
   {
      printf("%d\n",i);
   }
 }
 return 0;
}
```

23.

```
#include<stdio.h>
int main()
{
   int n;
   double fact=1;
   printf("Input a number :  ");
   scanf("%d", &n);
   if(n>=0)
   {
      if(n==0)
         printf("%lf",fact);
      else
         while(n!=0)
         {
            fact=fact*n;
            n=n-1;
         }
         printf("%lf",fact);
   }
   else
      printf("enter positive number !!");
   return 0;
}
```

24.

```
#include<stdio.h>
int main()
{
   int s,l,min,t,grat;
   printf("Input 2 number : ");
   scanf("%d %d",&s,&l);
   min=(s<l)?s:l;
   grat=(s<l)?l:s;
   while(min!=0)
   {
     t=grat%min;
     grat=min;
      min=t;
   }
   printf("HFC is = %d",grat);
   return 0;
}
```

25.

```
#include<stdio.h>
int main()
{
   int x,y,i;
   printf("Enter 2 number : ");
   scanf("%d %d",&x,&y);
   for(i=1; i<=x*y; i++)
   {
      if(i%x==0 && i%y==0)
         break;
   }
   printf("LCM IS = %d\n",i);

   return 0;
}
```

26.

```
#include<stdio.h>
int main()
{
   int n,i,m=1;
   printf("Input a number to check prime : ");
   scanf("%d",&n);
   for(i=2;i<n;i++)
   {
      if(n%i==0)
      m=0;
      break;
   }
   if(m==1)
   printf("Prime");
   else
      printf("Not prime");
   return 0;
}
```

27.

```
#include<stdio.h>
int main()
{
   int l,i,j;
   printf("Input the range to find prime number
: ");
   scanf("%d",&l);
   for(i=1; i<=l; i++)
   {
      for(j=2; j<i; j++)

      {
         if(i%j==0)
            break;
      }

      if(j==i)
      {

         printf("\n%d\n",i);

      }
   }

   return 0;
}
```

28.

```
#include<stdio.h>
int main()
{
   int l,i,j,sum=0;
   printf("Input the range to find prime number
: ");
   scanf("%d",&l);
   for(i=1; i<=l; i++)
   {
      for(j=2; j<i; j++)

      {
         if(i%j==0)
            break;
      }

      if(j==i)
      {

         printf("\n%d\n",i);
         sum=sum+i;
      }
   }
   printf("Summetion between 1 to %d =
%d\n",l,sum);

   return 0;
}
```

29.

```
#include <stdio.h>
int main()
{
   int i, j, num, m;
   printf("Input a number to print Prime factors:
");
   scanf("%d", &num);

   printf("All Prime Factors of %d are: \n", num);
   for(i=2; i<=num; i++)
   {
      if(num%i==0)
      {
         m = 1;
         for(j=2; j<=i/2; j++)
         {
            if(i%j==0)
            {
               m= 0;
               break;
            }
         }

         if(m==1)
         {
            printf("%d\n", i);
         }
      }
   }

   return 0;
}
```

30.

```
#include <stdio.h>
#include<math.h>
int main()
{
   int n,num, rem,c=0;
   double sum=0;
   printf("Input a number to check armostrong :
");
   scanf("%d",&n);
   num=n;
   while(num!=0)
   {
    num=num/10;
    c++;
   }
   num=n;
   while(num!=0)
   {
      rem=num%10;
      sum=(sum+pow(rem,c));
      num=num/10;
   }
   if(sum==n)
   {
      printf(“%d is an Armostrong number”,n);
   }
   else
      printf(“%d is not an Armostrong
number”,n);
   return 0;
}
```

31.

```
#include <stdio.h>
#include<math.h>
int main()
{
   long int n,num, rem,c,i;
   double sum;
   printf("Input a last number to show
armostrong number : ");
   scanf("%ld",&n);
   for(i=1; i<=n; i++)
   {
      num=i;
      sum=0;
      c=0;
      while(num!=0)
      {
         num=num/10;
         c=c+1;
      }
      num=i;
      while(num!=0)
      {
         rem=num%10;
         sum=(sum+pow(rem,c));
         num=num/10;
      }
      if(sum==i)
      {
         printf("%ld\n",i);
      }
   }

   return 0;
}
```

32.

```
#include<stdio.h>
int main()
{
   int i,n,sum=0;
   scanf("%d",&n);
   for(i=1; i<n; i++)
   {

      if(n%i==0)
      {
         sum=sum+i;
      }
   }
   if(sum==n)
      printf("%d ia a perfect number ",n);
   else
      printf("%d is not a perfect number",n);
   return 0;
}
```

33.

```
#include<stdio.h>
int main()
{
   int n,sum,i,j;
   printf("Input last number to print perfect
number : ");
   scanf("%d",&n);
   for(i=1;i<=n;i++)
   {
      sum=0;
      for(j=1;j<i;j++)
      {
         if(i%j==0)
         {
            sum=sum+j;
         }
      }
      if(sum==i)
      {printf("%d is a perfect number\n",i);}

   }
   return 0;
}
```

34.

```
#include<stdio.h>
int main()
{
   int n,sum=0,i,l,o;
   long int fact;
   scanf("%d",&n);
   o=n;
   while(n!=0)
   {
      fact=1;
      l=n%10;
   for(i=1;i<=l;i++)
   {
      fact=fact*i;
   }
   sum=sum+fact;
   n=n/10;
   }
   n=o;
   if(sum==n)
      printf("%d is a strong number",n);
   else printf("%d is not a strong number",n);
   return 0;
}
```

35.

```
#include<stdio.h>
int main()
{
   long int n,i,l,num,j;
   long int fact,sum;
   printf("Input last number to show strong
number : ");
   scanf("%ld",&num);
   for(i=1;i<=num;i++)
   {sum=0;
     n=i;
   while(n!=0)
   {
      fact=1;
      l=n%10;
   for(j=1;j<=l;j++)
   {
      fact=fact*j;
   }
   sum=sum+fact;
   n=n/10;
   }
   if(sum==i)
      printf("%ld is a strong number\n",i);
   } return 0; }
```

36.

```
#include<stdio.h>
int main()
{
   int a=0,b=1,c=0,i,n_term;
   printf("Input term to show fbonacci series :
");
   scanf("%d",&n_term);
   for(i=1;i<=n_term;i++)
   {
      printf("%d ",c);
      a=b;
      b=c;
      c=a+b;
   }
   return 0;
}
```