1 Fibonacci series

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

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

2 Smallest Prime Number

```
#include<stdio.h>
int main(){
    int n,i,j,flag,count=0;
    scanf("%d",&n);
    for(i=n+1;count<5;i++){
       flag=0;
     for(j=2;j<=n/2;j++){
         if(i%j==0){
            flag=1;
            break;
         }
     }
     if(flag==0){
         printf("%d ",i);
         count++;
```

```
    }
   }
}
```

3 Prime or Composite number

```
#include<stdio.h>
int main(){
    int n,i;
    scanf("%d",&n);
    int flag=0;
    for(i=2;i<=n/2;i++){
        if(n%i==0){
            flag=1;
            break;
        }
    }
    if(flag==0){
        printf("%d is a prime number",n);
    }
    else{
         printf("%d is a composite number",n);
    }
}
```

4 Series Sum Calculator

```
#include<stdio.h>
int main(){
    int n,digits,i,result=0,sum=0;
```

```
    scanf("%d %d",&n,&digits);
    for(i=0;i<digits;i++){
        result=result*10+n;
        sum+=result;
        printf("%d",result);
        if(i<n){
            printf(" + ");
        }
    }
    printf("\n%d",sum);
}
```

5 Divisor Sum and Equality Checker

```
#include<stdio.h>
int main(){
    int n,i,sum=0;
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        if(n%i==0){
            sum+=i;
             printf("%d ",i);
        }
    }
    printf("\n%d",sum);
    if(sum==n){
        printf("\n%d is an equal number",sum);
    }
    else{
         printf("\n%d is not an equal number",sum);
```

```
    }
}
```

6 Abundant Number

```
#include<stdio.h>
int main(){
    int n,sum=0,i;
    scanf("%d",&n);
    for(i=1;i<n;i++){
        if(n%i==0){
            sum+=i;
            printf("%d ",i);
        }
    }
    printf("\n%d",sum);
    if(sum>n){
        printf("\n%d is an abundant number",n);
    }
    else{
         printf("\n%d is an not abundant number",n);
    }
}
```

7 Counted the number of leap and non-leap years

```
#include<stdio.h>
int main(){
    int year,next,leap=0,non_leap=0,i;
    scanf("%d",&year);
```

```
if((year%4==0&&year%100!=0)||(year%100==0&&year%400==0))
{
        printf("%d is a leap year",year);
    }
    else{
        printf("%d is not  a leap year",year);
    }

    for(i=1;i<=10;i++){
        next=year+i;

if((next%4==0&&next%100!=0)||(next%100==0&&next%400==0))
{
            leap++;
            printf("%d ",next);
         }
         else{
            non_leap++;
         }

    }
    printf("\n%d",leap);
    printf("\n%d",non_leap);
}
```

8 Geometric Series Sum Calculator

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

```
    double sum=0.00;
    double term=1.00;
    scanf("%d",&n);
    for(int i=1;i<=n;i++){
        sum+=term;
        term/=2;
    }
    printf("%.2f",sum);
}
```

9 Sum of Squares of N Natural Numbers

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

10 Harmonic Series

```
#include<stdio.h>
int main(){
    int n;
    double sum=0.0;
    scanf("%d",&n);
    for(int i=1;i<=n;i++){
```

```
        sum+=1.0/i;
    }
    printf("%.2f",sum);
    return 0;
}
```

11 Digits Count

```
#include<stdio.h>
int main(){
    int n,count=0;
    scanf("%d",&n);
    while(n>0){
        count++;
        n/=10;
    }
    printf("%d",count);
}
```

12 Square Pattern

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

```
        }
        printf("\n");
    }
}
```

13 Pyramid Pattern

```
#include<stdio.h>
int main(){
    int n,i,j,num=1;
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        for(j=1;j<=i;j++){
            printf("%d ",num);
            num++;
        }
        printf("\n");
    }
}
```

14 Swap the Digits

```
#include<stdio.h>
int main(){
    int n,first,last,a,b,swap,count=1;
    scanf("%d",&n);
    last=n%10;
    first=n;
    while(first>10){
        first=first/10;
        count=count*10;
```

```
    }
    a=last*count;
    b=(n%count)/10*10;
    swap=a+b+first;
    printf("%d",swap);
    return 0;}
```

15 Perfect Cubes

```
#include<stdio.h>
int main(){
    int n,i,cube;
    scanf("%d",&n);
    for(i=1;i<=3;i++){
        cube=n*n*n;
        printf("%d ",cube);
        n++;
    }
}
```

17 Sum of N odd and Even numbers

```
#include<stdio.h>
int main(){
    int n,i,odd_sum=0,even_sum=0;
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        if(i%2==0){
            even_sum+=i;
        }
        else{
```

```
            odd_sum+=i;
        }
    }
    printf("\n%d",even_sum);
    printf("\n%d",odd_sum);
    return 0;
}
```

18 Detecting Narcissistic Numbers

```
#include<stdio.h>
#include<math.h>
int main(){
    int n,count=0,rem,res=0,temp;
    scanf("%d",&n);
    temp=n;
    while(n>0){
        count++;
        n/=10;
    }
    n=temp;
    while(n>0){
    rem=n%10;
    res+=pow(rem,count);
    n/=10;

} printf("%d",res);
   if(res==temp){
       printf("\n%d is a narcissistic number",temp);
   }
   else{
```

```
        printf("\n%d is not  a narcissistic number",temp);
    }
}
```

19 Digit Sum Calculator

```
#include<stdio.h>
int main(){
    int n,odd_sum=0,even_sum=0,rem;
    scanf("%d",&n);
    while(n>0){
        rem=n%10;
        if(n%2==0){
            even_sum+=rem;
        }
        else{
            odd_sum+=rem;
        }
        n/=10;
    }
    printf("%d",even_sum);
    printf("\n%d",odd_sum);
}
```

20 Alphabet Triangle Generator

```
#include<stdio.h>
int main(){
    int n,i,j,alpha=65;
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        for(j=1;j<=i;j++){
```

```
            printf("%c",alpha);
        }
        printf("\n");
        alpha++;
    }
}
```

21 Finding the Next Palindrome

```
#include<stdio.h>
int reverse(int n){
    int rev=0,rem;
    while(n>0){
        rem=n%10;
        rev=rev*10+rem;
        n/=10;
    }
     return rev;}
int ispalin(int n){
    return n==reverse(n);
}
int main(){
   int n,next,i=1;
   scanf("%d",&n);
   next=n+i;
   while(!(ispalin(next))){
       next++;
   }
   printf("%d",next);
}
```

22 Finding Consecutive Palindromic Numbers

```
#include<stdio.h>
int reverse(int n){
    int rev=0,rem;
    while(n>0){
        rem=n%10;
        rev=rev*10+rem;
        n/=10;
    }
     return rev;

}
int main(){
   int n,count=0,current;
   scanf("%d",&n);
   current=n;
  while(count<5){
      if(current==reverse(current)){
          count++;
           printf("%d ",current);
      }
      current++;

  }

}
```

24 The Palindromic Sum

```
#include<stdio.h>
```

```
int reverse(int n){
    int rev=0,rem,temp;
    temp=n;
    while(n>0){
        rem=n%10;
        rev=rev*10+rem;
        n/=10;
        if(rev==temp){
            return temp;
        }
        else{
            return 0;
        }
    }
}
int main(){
   int n,sum=0;
   scanf("%d",&n);
   for(int i=1;i<=n;i++){
       sum+=reverse(i);
   }

 printf("%d",sum);

}
```

25 Pattern printing with multiples of 5

```
#include<stdio.h>
int main(){
    int n,i,j;
```

```
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        for(j=1;j<=i;j++){
            printf("%d ",j*5);
        }
        printf("\n");
    }
}
```

26 Squares of Even Numbers & odd number Series

```
#include<stdio.h>
int main(){
    int n,i;
    scanf("%d",&n);
    if(n%2==0){
    for(i=2;i<=n;i+=2){

        printf("\n%d ",i*i);
    }}
    else{
    for(i=1;i<=n;i+=2){
        printf("\n%d ",i*i)
    }
   }
}
```

27 Prime Pattern

```
#include <stdio.h>
#include <math.h>
```

```
int main() {
   int n,i,j,k,flag;
   scanf("%d",&n);
   for(i=2;i<=n;i++){
      flag=0;
      for(j=2;j<i/2;j++){
         if(i%j==0){
            flag=1;
            break;
         }
      }
      if(flag==0){
         for(k=1;k<=i;k++){
            printf("* ");
         }
         printf("\n");
      }
   }
   return 0;
}
```

28 LCM Finder

```
#include<stdio.h>
int main(){
    int lcm,a,b;
    scanf("%d %d",&a,&b);
    lcm=(a>b)?a:b;
    while(a>0&&b>0){
```

```
        if(lcm%a==0&&lcm%b==0){
            printf("%d",lcm);
            break;
        }
        lcm++;
    }
    return 0;
}
```

29 The Perfect Number Detective

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

```
}
```

30 Handshake Simulation Program

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

31 Odd or Even numbers series

```
#include<stdio.h>
int main(){
    int n,i;
    scanf("%d",&n);
    if(n%2==0){
        for(i=2;i<=n;i+=2){
            printf("%d ",i);
        }
    }
    else{
         for(i=1;i<=n;i+=2){
            printf("%d ",i);
    }}
}
```

32 Digit Summation

```
#include<stdio.h>
int main(){
    int i,sum=0,n,rem;
    scanf("%d",&n);
    while(n>0){
        rem=n%10;
        sum+=rem;
        n/=10;
    }
    while(sum>9){
        n=sum;
        sum=0;
        while(n>0){
        rem=n%10;
        sum+=rem;
        n/=10;
        }
    }
    printf("%d",sum);
}
```

33 Vowel Counter

```
#include<stdio.h>
#include<ctype.h>
int main(){
    char word[100];
    int count=0;
    scanf("%s",word);
    for(int i=0;word[i]!='\0';i++){
        char ch=tolower(word[i]);
```

```
        if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u'){
            count++;
        }
    }
    printf("%d",count);
    return 0;
}
```

34 Digit Incrementer

```
#include<stdio.h>
int main(){
    int n,result,mul=1,rem,count=0;
    scanf("%d",&n);
    while(n>0){

    rem=(n%10)+1;
    result+=mul*rem;
    mul*=10;
    n/=10;
    }
    printf("%d",result);

}
```

35 Printing Pattern in Reverse Order

```
#include<stdio.h>
int main(){
    int n,i,j;
    scanf("%d",&n);
```

```
    for(i=n;i>=1;i--){
        for(j=1;j<=i;j++){
            printf("%d",j);
            }
        printf("\n");
  }
}
```

36 The Odd Factorial Quest

```
#include<stdio.h>
int main(){
    int n,mul=1;
    scanf("%d",&n);
    if(n%2!=0){
    for(int i=1;i<=n;i+=2){
        mul*=i;
    }
    printf("%d",mul);
}}
```

38 Fibonacci Even Number Generator

```
#include<stdio.h>
int main(){
    unsigned  a=0,b=1,c,n,i;
    scanf("%d",&n);

    for(i=1;i<=n;i++){
         if(a%2==0 && a<=n){
```

```
            printf("%u ",a);
        }

        c=a+b;
       a=b;
       b=c;
        }
       }
```

39 Exploring the Growth Series

```
#include<stdio.h>
int main(){
    int start,digits,i;
    scanf("%d %d",&start,&digits);
    for(i=1;i<=digits;i++){
        printf("%d ",start);
        start*=2;

    }
}
```

40 Sum of all Prime Factors

```
#include<stdio.h>
int main(){
    int n,i,sum=0;
    scanf("%d",&n);
    for(i=2;i<=n;i++){
        while(n%i==0){
            sum+=i;
            n/=i;
```

```
        }
    }
    printf("\n%d",sum);
}
```

41 Sum N Odd Natural Numbers

```
#include<stdio.h>
int main(){
    int n,num,i,sum=0;
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        num=(2*i)-1;
         sum+=num;
        printf("%d ",num);
    }
    printf("\n%d",sum);
}
```

42 Check Second Even Number

```
#include<stdio.h>
int main(){
    int start,end,i,count=0;
    scanf("%d %d",&start,&end);
    for(i=start;i<=end;i+=2){
        count++;
        if(count==2){
            printf("%d",i);
```

```
        }

    }

}
```

43 Floyd's Triangle

```
#include<stdio.h>
int main(){
    int n,i,j,num=1;
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        for(j=1;j<=i;j++){
            printf("%d ",num);
            num++;
        }
        printf("\n");
    }

}
```

44 Automorphic Number

```
#include<stdio.h>
int main(){
    int n,sqr;
    scanf("%d",&n);
   int  flag=0;
    sqr=n*n;
    while(n%10!=sqr%10){
```

```
        flag=1;
        break;
    }
    n/=10;
    sqr/=10;
    if(flag==0){
        printf("It is automorphic");
    }
    else{
        printf("It is not automorphic");
    }
}
```

45 Sum of First and Last digit

```
#include<stdio.h>
int main(){
    int first,last,sum=0,n;
    scanf("%d",&n);
    last=n%10;
    first=n;
    while(first>=10){
        first=first/10;
    }
    sum=last+first;
    printf("%d",sum);
}
```

46 Sum of Even Numbers

```
#include<stdio.h>
```

```
int main(){
    int n,i,sum=0;
    scanf("%d",&n);
    for(i=2;i<=n;i+=2){
        sum+=i;
        printf("%d ",i);
    }
    printf("\n%d",sum);
}
```

47 XOR Operations

```
#include<stdio.h>
int main(){
    int n,count=0;
    scanf("%d",&n);
    while(n!=1){
        if(n%2==0)
        {
         n/=2;
         count++;
        }
        else{
            n=n*3+1;
            count++;
        }
    }
    if(n==1){
        printf("%d",count);
        return 0;
    }
```

```
}
```

48 Sum of the Middle Digits

```
#include <stdio.h>
#include <math.h>

int main() {
    int n, count = 0, temp, sum = 0;
    scanf("%d", &n);
   n /= 10;
    temp = n;

    while (temp >0) {
          temp /= 10;
        count++;

    }

    n %= (int)pow(10, count-1 );

    while (n > 0) {
        sum += n % 10;
        n /= 10;
    }

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

    return 0;
}
```

49 Reverse the digits

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

50 Perfect Square

```
#include<stdio.h>
int main() {
    int i, n, flag;
    flag = 0;

    scanf("%d", &n);

    for (i = 2; i <= n / 2; i++) {
        if (n == i * i) {
            flag = 1;
            break;
        }
    }
```

```
    if (flag == 1) {
        printf("%d is a perfect square", n);
    } else {
        printf("%d is not a perfect square", n);
    }

    return 0;
}
```

51 Alphabetical Pattern

```
 #include<stdio.h>
    int main(){
    int n,i,j;
    scanf("%d",&n);
    if(n>26){
        printf("Invalid");
    }
    else{
    for(i=1;i<=n;i++){
        char alpha='A';
        for(j=1;j<=i;j++){
            printf("%c ",alpha);
            alpha++;
        }
        printf("\n");

    }}
}
```

52 Multiples of 5 - Pattern Printing

```
#include<stdio.h>
int main(){
    int n,i,j;
    scanf("%d",&n);
    for(i=1;i<=n;i++){
        for(j=1;j<=i;j++){
            printf("%d ",j*5);
        }
        printf("\n");
    }
}
```

53 Product of N digits

```
#include<stdio.h>
int main(){
    int n,i,product=1,rem;
    scanf("%d",&n);
    while(n>0){
        rem=n%10;
        product=product*rem;
        n/=10;
    }

    if(product==0){
        printf("Invalid");
    }
    else{
        printf("%d",product);
    }
```

```
}
```

54 Prime Number in range

```
#include<stdio.h>
int main(){
    int start,end,i,n,flag;
    scanf("%d",&start);
    scanf("%d",&end);

    for(n=start;n<=end;n++){
         flag=0;
    for(i=2;i<=n/2;i++){
        if(n%i==0){
            flag=1;
            break;
        }
    }
     if(flag==0){
        printf("%d ",n);
    }

    }
    return 0;
}
```

55 Harshad Number

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

```
    num=n;
    while(n>0){
        rem=n%10;
        sum+=rem;
        n/=10;
    }
    printf("%d",sum);
    if(num%sum==0){
        printf("\nit is harsad number");
    }
    else{
         printf("\nit is not  harsad number");
    }
}
```

56 Strong Number

```
  #include<stdio.h>
    int main(){
    int i,fact,rem,sum=0,n,temp;
    scanf("%d",&n);
    temp=n;
    while(n!=0){
        i=1,fact=1;
        rem=n%10;
        while(i<=rem){
            fact=fact*i;
            i++;
        }
        sum=sum+fact;
        n/=10;
```

```
    }
    if(sum==temp){
        printf("%d it is a strong number",sum);
    }
    else {
        printf("%d it is not a strong number",sum);
    }
}
```

57 Palindrome Check

```
#include <stdio.h>
    int main() {
    int n, rev = 0, rem, temp, p;
    printf("Enter a number: ");
    scanf("%d", &n);
    if (n < 0) {
        p = -n;
    } else {
        p = n;
    }

    printf("%d\n", p);
    temp = p;

     while (p != 0) {
        rem = p % 10;
        rev = rev * 10 + rem;
        p /= 10;
    }
```

```
        if (temp == rev) {
        printf("%d is a Palindrome.\n", n);
    } else {
        printf("%d is Not a Palindrome.\n", n);
    }

    return 0;
}
```