```c
#include <stdio.h>

//...........Fibonacci All cases....//

void main() {

   int  i,n;
   int t1 = 0, t2 = 1;
   int nextTerm;
   nextTerm = t1 + t2;
   printf("Enter the number of terms You want: ");
   scanf("%d",&n);


   printf("Fibonacci Series: %d %d ", t1, t2);

     i=3;

 // for loop for till that no.. means 10 so it will print max value till 10//

       for (nextTerm=1; nextTerm<= n; )
             {
             printf("%d, ", nextTerm);
             t1 = t2;
             t2 = nextTerm;
             nextTerm = t1 + t2;
             }

```

```
29:
30: // while loop for till that no.. means 10
    so it will print max value till 10//
31:
32:         while(nextTerm<=n)
33:         {
34:             printf("%d, ", nextTerm);
35:             t1 = t2;
36:             t2 = nextTerm;
37:             nextTerm = t1 + t2;
38:
39:         }
40: // while loop to print till n number
    means 10 bola hai so 10 no. tak execute
    it //
41:
42:     while(i<=n)
43:         {
44:             printf("%d ", nextTerm);
45:             t1 = t2;
46:             t2 = nextTerm;
47:             nextTerm = t1 + t2;
48:             i++;
49:         }
50: // for  loop to print till n number means
    10 bola hai so 10 no. tak execute it //
51:
52:     for(;i<=n;i++)
53:         {
54:             printf("%d ", nextTerm);
55:             t1 = t2;
```

```
56:                 t2 = nextTerm;
57:                 nextTerm = t1 + t2;
58:
59:             }
60: }
61:
```

```c
#include <stdio.h>

//Amstrong no all cases //

void main()
{
    int num, onum, remainder, result = 0;
    printf("Enter a no. here : ");
    scanf("%d", &num);

//While loops three digit //

    onum = num;
    while (onum!= 0)
    {

            remainder = onum % 10;
            result =result + remainder *
remainder * remainder;

        // reducing no....
        onum =onum/10;
    }

//for loops three digit //


for(onum=num;onum!=0;onum=ounm/10)
            {
                remainder = onum % 10;
                result =result +
remainder * remainder * remainder;
```

```
30:
31:             }
32:         result==num?printf("%d is an
    Armstrong number.", num):printf(
    not an Armstrong number.", num);
33: }
34:
35: // Loop  for n no.//
36:
37: void main()
38: {
39:     int num, onum, remainder, result = 0;
40:     printf("Enter a no. here : ");
41:     scanf("%d", &num);
42:
43:     int n=0;
44: // no. of digit//
45:
46:         for(onum=num;onum!=0;n++)
47:                 {
48:                     onum=onum/10;
49:                 }
50:
51: //reduce  no.//
52:
53:
    for(onum=num;onum!=0;onum=onum/10)
54:             {
55:                 remainder = onum % 10;

56:                 result =result+
    pow(remainder,n);
```

```
57:
58:             }
59:
60:         /*//print with if esle//
61:
62:          if (result == num)
63:              printf("%d is an Armstrong
    number.", num);
64:          else
65:              printf("%d is not an
    Armstrong number.", num);*/
66:
67:          result==num?printf("%d is an
    Armstrong number.", num):printf(
    not an Armstrong number.", num);
68:
69: }
70:
71: //for range questions  //
72:
73: void main()
74: {
75:
76:     int num, onum, remainder, result = 0;
77:
78:     int i,n;
79:
80:     for(num==1;num<=2000;num++)
81:     {
82:
83:
```

```
84: // no. of digit//
85:         for(onum=num;onum!=0;n++)
86:                 {
87:                     onum=onum/10;
88:                 }
89:
90:         //reduce  no.//
91:
92: //for loop//
93:
    for(onum=num;onum!=0;onum=onum/10)
94:             {
95:                 remainder = onum % 10;
96:             //result =result + remainder
    * remainder * remainder;
97:
98:                 result =result+
    pow(remainder,n);
99:
100:            }
101:
102:
103: //while loop//
104:
105:            onum=num;
106:            while (onum!=0)
107:            {
108:
109:                remainder = onum % 10;
110:                result =result+
    pow(remainder,n);
```

```
                    onum=onum/10;
                }

        //printf("%d is an Armstrong
    number.", result);
                if (result == num)
                printf("%d ", num);
                result=0;n=0;
        }
}

//most imp //
//taking both range from user//
//same range but just we need to add
    swap condition and just change range //

void main()
{
   int l, h,n, num, onum, remainder,
    result=0;

   printf("Enter two numbers(intervals):
    ");
   scanf("%d %d", &l, &h);
   printf("Armstrong numbers between %d
    and %d are: ", l, h);

   // swap numbers if high < low //

   if (h < l)
    {
```

```
137:
138:       h += l;
139:       l = h - l;
140:       h -= l;
141:     }
142:      //range alot//
143:     for (num = l + 1; num< h; num++)
144:       {
145:         onum = num;
146:         while (onum != 0) {
147:         onum /= 10;
148:         n++;
149:       }
150:
151:       onum = num;
152:
153:       // result contains sum of nth power
    of individual digits
154:       while (onum!= 0)
155:       {
156:         remainder = onum % 10;
157:         result += pow(remainder,n);
158:         onum=onum/10;
159:       }
160:
161:       if (result == num)
162:       {
163:         printf("%d ", num);
164:       }
165:
166:       result = 0;n=0;
```

```
167:     }
168:
169: }
170:
```

```c
#include<stdio.h>
// prime no.all cases//

void main()
{
   int n, i, count = 0;

    printf("Enter number to check prime number or not");
    scanf("%d",&n);
    i=2;
    while( i<=n/2)
    {
        // check for non prime number
        if(n%i==0)
        {
            count=1;
            break;
        }
        i++;

    }
//ternary ..../

   count == 1 ? printf("Not Prime") : printf("Prime");

    /*                  or

    if (count==0)
        printf("%d is a prime number.", n);
```

```
30:     else
31:         printf("%d is not a prime
    number.",n);*/
32: }
33:
34: //same to check but aslo showing factors
    //
35:
36: void main()
37: {
38:     int count=0,n,i;
39:
40:     printf("Enter your no. for
    Checking...");
41:     scanf("%d",&n);
42:
43:     if(n==2)
44:     {
45:     printf("not prime..");
46:     }
47:
48:     if (n==1)
49:     {
50:         printf("prime.");
51:     }
52:     else
53:     {
54:
55:         for(i=2;i<=n/2;i++)
56:         {
57:
```

```
58:                 if(n%i==0)
59:                 {
60:                     count=1;
61:                     printf("\tFactors are
    %d:\n",i);
62:                 }
63:
64:             }
65:         }
66:
67:                 count == 1 ? printf("Not
    Prime") : printf("Prime");
68:
69:
70: }
71:
72:  //range question both from user //
73:
74: void main()
75: {
76:     int low, high, i, count=0;
77:     printf("Enter two numbers intervals:
    ");
78:     scanf("%d %d", &low, &high);
79:     printf("Prime numbers between %d and
    %d are: ", low, high);
80:
81:     // range alot
82:
83:    //using while loop//
84:
```

```
85:     while (low < high)
86:     {
87:         count = 0;
88:
89:         // ignore numbers less than 2
90:
91:         if (low <= 1)
92:         {
93:             ++low;
94:             continue;
95:         }
96:
97:         for (i = 2; i <= low / 2; ++i)
98:         {
99:
100:            if (low % i == 0)
101:             {
102:               count = 1;
103:
104:             }
105:        }
106:
107:
108:        if (count == 0)
109:          printf("%d ", low);
110:
111:        // to check prime for the next
    number
112:        // increase low by 1
113:        ++low;
114:    }
```

```
115:
116:   //for loop//
117:
118:   for(;low<high;low++)
119:   {
120:       count = 0;
121:
122:        // ignore no. < 2 bcz is lowest
       prime no.//
123:
124:        if (low <= 1)
125:        {
126:           ++low;
127:           continue;
128:        }
129:
130:        for (i = 2; i <= low / 2; ++i)
131:        {
132:
133:           if (low % i == 0)
134:            {
135:              count = 1;
136:
137:            }
138:        }
139:
140:
141:        if (count == 0)
142:          printf("%d ", low);
143:
144:   }
```

```
145:
146: }
147:
```

```c
#include <stdio.h>

//...........Perfect All cases....//

//just check no. is perfect or not//

void main()
{

  int  i,n,sum=0;
  printf("Enter the number You want to Check: ");
  scanf("%d", &n);
//for loop//
        for(i=1;i<n;i++)
        {
            if(n%i==0)
            {
            sum=sum+i;
            }
        }
//while loop//
        while(i<n)
        {
            i=1;
            if(n%i==0)
            {
                sum=sum+i;
            }
            i++;
        }
```

```
31:                 (sum==n)?printf("\nHey..%d
    is a Perfect Number",
    n):printf(
    Number",n);
32:                 /*if(sum==n)
33:                 printf("\nHey..%d is a
    Perfect Number",n);
34:                 else
35:                 printf("\nHey..%d is a not
    Perfect Number",n);*/
36:
37: }
38:
39:
40: //range type//
41: //ask from user upper limit//
42:
43: void main()
44: {
45:     int i, j, end, sum;
46:
47:     // Input upper limit to print
    perfect number //
48:     printf("Enter upper limit: ");
49:     scanf("%d", &end);
50:
51:     printf("All Perfect numbers between
    1 to %d:\n", end);
52:
53:     // range loop//
54:     for(i=1; i<=end; i++)
```

```
55:     {
56:         sum = 0;
57:
58:  //condition//
59:
60:         for(j=1; j<i; j++)
61:         {
62:             if(i % j == 0)
63:             {
64:                 sum += j;
65:             }
66:         }
67:
68:        if(sum == i)
69:         {
70:             printf("\n%d ", i);
71:         }
72:     }
73:
74:  }
75:
76:
77: //ask for both range //
78:
79: void main()
80: {
81:     int i, j, low,end, sum;
82:
83:     // Input upper limit to print
    perfect number //
84:     printf("Enter upper and Lower limit:
    ");
```

```
85:     scanf("%d %d", &low ,&end);
86:
87:     printf("All Perfect numbers between
    % to %d:\n",low, end);
88:
89:     // range loop//
90:     for(i=low; i<=end; i++)
91:     {
92:         sum = 0;
93:
94:  //condition//
95:
96:         for(j=1; j<i; j++)
97:         {
98:             if(i % j == 0)
99:             {
100:                sum += j;
101:            }
102:        }
103:
104:       if(sum == i)
105:        {
106:            printf("\n%d ", i);
107:        }
108:    }
109:
110: }
111:
112:
```

```c
#include<stdio.h>

void main()
{
    int n,i=1,r,sum=0,fact=1,temp;
    printf("Enter a Number u want to Check here:");
    scanf("%d",&n);


//for loop//
//range loop//
    for(temp=n;n;n=n/10)
    {

        fact=1;
        r=n%10;
//condition
        for(i=1;i<=r;i++)
        {
            fact=fact*i;
        }
        sum=sum+fact;
    }

//while loop//
temp=n;

        while(n)

        {
```

```
31:                 i=1;fact=1;
32:                 r=n%10;
33:                 while(i<=r)
34:                 {
35:                     fact=fact*i;
36:                     i++;
37:                 }
38:                 sum=sum+fact;
39:                 n=n/10;
40:             }
41:         (sum==temp && temp!=0)?printf("%d is
    Strong Number",temp):printf(
    Strong Number ",temp);
42:
43:
44: }
45:
46: //range//
47: void main()
48: {
49:     int k,n,low,high,i=1,r,sum=0,fact=1,
    n1;
50:     printf("Enter a lower and upper limit
    u want to Check here:");
51:     scanf("%d %d",&low,&high);
52:
53:
54: //for loop//
55: //range loop//
56: for(k=low;k<=high;k++)
57: {
```

```
58:      n1=k;
59:      sum=0;
60:
61:      for(n=k;n;n=n/10)
62:      {
63:          fact=1;
64:          r=n%10;
65: //condition for factorial
66:          for(i=1;i<=r;i++)
67:          {
68:              fact=fact*i;
69:          }
70:          sum=sum+fact;
71:      }
72:
73: if(sum==n1 && n1!=0)
74: printf("%d\n",n1);
75: }
76:
77: }
```

```c
#include<stdio.h>

//Palindrome cases//
// only check palindrome or not//
void main()
{
    int n,r,reverse=0,i;
    printf("Enter no. Here to Check Palindrome or not ");
    scanf("%d",&n);
//for loop//
    for(i=n;n>0;n=n/10)
    {
        r=n%10;
        reverse=reverse*10+r;

    }
//while loop//
        i=n;
        while(n>0)
        {
            r=n%10;
            reverse=reverse*10+r;
            n=n/10;
        }

    (i==reverse)?printf("Hey %d is Palindrome",i):printf( Palindrome",i);
}

```

```
29: // Range//
30: void main()
31: {
32:     int onum,n,r,reverse=0,i,low,high;
33:     printf("Enter Your range to Find
    Palindrome Numbers ");
34:     scanf("%d %d",&low,&high);
35:
36:     for(onum=low;onum<=high;onum++)
37:     {
38:             reverse=0;
39:             for(n=onum;n>0;n=n/10)
40:             {
41:                 r=n%10;
42:                 reverse=reverse*10+r;
43:
44:             }
45:             if(onum==reverse)
46:             printf("Your Palindromes btw
    your entered Range Are %d ",onum);
47:     }
48: }
49:
```

```c
#include<stdio.h>

//Add First and Last Digit of Number cases //

//without loop//
void main()
{
    int f,n,r,sum,digit;
    printf("Enter Your Number Here:");
    scanf("%d",&n);
    r=n%10;
    //ye n-1 deta hai means for three  it will give  2..log properties//
    digit=log10(n);
    f=n/(pow(10,digit));
    sum=f+r;
    printf("First digit is:%d\n",f);
    printf("Last digit is:%d\n",r);
    printf("Sum of First and Last digit is:%d",sum);
}

//with loop//
void main()
{
    int n,r,sum;
    printf("Enter Your Number Here:");
    scanf("%d",&n);
    r=n%10;
    while(n>10)
```

```
29:     {
30:         n=n/10;
31:
32:     }
33:     printf("First digit is:%d\n",n);
34:     printf("Last digit is:%d\n",r);
35:
36:     sum=r+n;
37:     printf("Sum of First and Last digit
    is:%d",sum);
38: }
```