```c
// Given a number replace every occurence of 0 to 9

#include<stdio.h>

void main(){
    int n=200489;

    int place=1,ans=0,digit;
    while(n!=0){
        digit=n%10;
        if(digit==0) digit=9;
        ans=ans+digit*place;
        place*=10;
        n/=10;
    }
    printf("%d",ans);
}
```

```c
// input -> 13862
// output -> 2(1+3+8+6+2->20->2+0->0)

#include<stdio.h>

// with loop and recursion
void logic1(int n){
    if(n>=0 && n<=9){
        printf("%d\n",n);
        return;
    }
    int sum=0;
    while(n!=0){
        sum+=n%10;
        n/=10;
    }
    logic1(sum);
}

//without loop and recursion (cyclicity of %9)
void logic2(int n){
    if(n%9==0)
        printf("%d",9);
    else
        printf("%d",n%9);
}

void main(){
    int n;
    scanf("%d",&n);
    logic1(n);
    logic2(n);
}
```

```c
// Binary to decimal

#include<stdio.h>

int main(){
    int n;
    scanf("%d",&n);

    int place=1,bit,ans=0;
    while(n!=0){
        bit=n%2;
        ans+=bit*place;
        place*=2;
        n/=10;
    }
    printf("%d",ans);
}
```

```c
// Reverse a Number

#include<stdio.h>

void main(){
    int n;
    scanf("%d",&n);

    int rev=0,digit;
    while(n!=0){
        digit=n%10;
        rev=rev*10+digit;
        n/=10;
    }
    printf("%d",rev);
}
```

```c
// Equality of 2 number without using ==

#include<stdio.h>

void main(){
    int a,b;
    scanf("%d %d",&a,&b);

    if(!(a^b))
        printf("EQUAL");
    else
        printf("NOT EQUAL");
}
```

```c
// FIND MAX AND MIN WITHOUT USING CONDITION LOOP
// a<b -> max=(a+b)+(b-a)/2  and  min=(a+b)-(b-a)/2

#include<stdio.h>
#include<stdlib.h>
void main(){
    int a,b;
    scanf("%d %d",&a,&b);
    int maxi=((a+b)+abs(b-a))/2;
    int mini=((a+b)-abs(b-a))/2;
    printf("maxi=%d\nmini=%d",maxi,mini);
}
```

```c
// Given 2 string s1 and s2
// find whether s2 is permutation of s1
// s1="heart"   s2="earth"
// only lower case letter

#include<stdio.h>
#include<string.h>
void main(){
    char s1[]="heart";
    char s2[]="earth";
    int freq[26]={0};

    int i;
    for(i=0;i<strlen(s1);i++)
        freq[s1[i]-'a']++;

    for(i=0;i<strlen(s2);i++)
        freq[s2[i]-'a']--;

    for(i=0;i<26;i++){
        if(freq[i]>0){
            printf("Not a permutation");
            return;
        }
    }
    printf("Permutation is there");
}
```

```c
// Given 2 string s1 and s2
// find whether s2 is permutation of s1
// s1="heArt"   s2="EaRtH"
// upper and lower case letter

#include<stdio.h>
#include<string.h>
#include<ctype.h>
void main(){
    char s1[]="heart";
    char s2[]="EaRtH";
    int freq[26]={0};

    int i;
    for(i=0;i<strlen(s1);i++)
        freq[tolower(s1[i])-'a']++;

    for(i=0;i<strlen(s2);i++)
        freq[tolower(s2[i])-'a']--;

    for(i=0;i<26;i++){
        if(freq[i]>0){
            printf("Not a permutation");
            return;
        }
    }
    printf("Permutation is there");
}
```

```c
// print hello without using semicolon

#include<stdio.h>
void main(){
    if(printf("Hello")){

    }
}
```