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Week-05-Nested Loops - while and for, Jumps in Loops

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The k-digit number N is an Armstrong number if and only if the k-th power of each digit sums to N.

Given a positive integer N, return true if and only if it is an Armstrong number.

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 #include<math.h>
3 int main (){
4     int n,k=0,sum=0,rem;
5     scanf("%d",&n);
6     int temp1=n,temp2=n;
7     while(temp1!=0){
8         temp1/=10;
9         k++;
10    }
11    while(temp2!=0){
12        rem=temp2%10;
13        sum+=pow(rem,k);
14        temp2/=10;
15    }
16    if(sum==n)
17        printf("true");
18    else
19        printf("false");
20    return 0;
21 }
```

	Input	Expected	Got	
✓	153	true	true	✓
✓	123	false	false	✓

Passed all tests! ✓

Take a number, reverse it and add it to the original number until the obtained number is a palindrome.
Constraints $1 \leq \text{num} \leq 99999999$ Sample Input 1 32 Sample Output 1 55 Sample Input 2 789 Sample Output 2 66066

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>
2 int main(){
3     long long int num,sum,revnum,tempnum,tempsum;
4     scanf("%lld",&num);
5     while(1){
6         revnum=0;
7         tempnum=num;
8         while(num){
9             revnum=revnum*10+(num%10);
10            num=num/10;
11        }
12        sum=tempnum+revnum;
13        tempsum=sum;
14        revnum=0;
15        while(sum){
16            revnum=revnum*10+(sum%10);
17            sum=sum/10;
18        }
19        if(tempsum==revnum){
20            break;
21        }
22        num=tempsum;
23    }
24    printf("%lld",tempsum);
25    return 0;
26
27 }
```

	Input	Expected	Got	
✓	32	55	55	✓
✓	789	66066	66066	✓

Passed all tests! ✓

A number is considered lucky if it contains either 3 or 4 or 3 and 4 both in it. Write a program to print the nth lucky number. Example, 1st lucky number is 3, and 2nd lucky number is 4 and 3rd lucky number is 33 and 4th lucky number is 34 and so on. Note that 13, 40 etc., are not lucky as they have other numbers in it.

The program should accept a number 'n' as input and display the nth lucky number as output.

Answer: (penalty regime: 0 %)

```
1  #include<stdio.h>
2  int main (){
3      long int i,j;
4      int rem,n,count=0,flag;
5      scanf("%d",&n);
6      for(i=1;count<=n;i++){
7          flag=0;
8          j=i;
9          while(j>0){
10             rem=j%10;
11             if(rem==3 || rem==4)
12                 j=j/10;
13             else{
14                 flag=1;
15                 break;
16             }
17         }
18         if(flag==0){
19             count++;
20             if(count==n)
21                 break;
22         }
23     }
24     printf("%ld",i);
25     return 0;
26 }
```

	Input	Expected	Got	
✓	34	33344	33344	✓

Passed all tests! ✓