Week 5 – 2

Nested Loops - while and for, Jumps in Loops

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Attempt 1	
Status	Finished
Started	Monday, 23 December 2024, 5:33 PM
Completed	Monday, 25 November 2024, 12:08 PM
Duration	28 days 5 hours

Prob	lem	1
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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.

Note: 1 <= N <= 10^8

Hint: 153 is a 3-digit number, and $153 = 1^3 + 5^3 + 3^3$.

Sample Input:

153

Sample Output:

true

Sample Input:

123

Sample Output:

false

Sample Input:

1634

Sample Output:

true

Code:

```
1 |#include<stdio.h>
     #include<math.h>
  2
 3
     int main()
 4 * {
         int n;
scanf("%d",&n);
  5
  6
         int x=0,n2=n;
  7
  8
         while(n2!=0)
 9 ,
 10
            X++;
            n2=n2/10;
 11
 12
 13
         int sum = 0;
 14
         int n3=n,n4;
 15
         while(n3!=0)
 16 🔻
 17
            n4=n3%10;
 18
            sum=sum+pow(n4,x);
 19
         n3=n3/10;
 20
 21
         if(n==sum)
 22 *
         {
 23
             printf("true");
 24
 25
         else
 26 •
         {
 27
            printf("false");
         }
 28
 29
         return 0;
 30 }
```

OUTPUT:

~	153 true	true	~
~	123 false	false	~
issed	d all tests! 🗸		

Problem 2:

Take a number, reverse it and add it to the original number until the obtained number is a palindrome.

Constraints

1<=num<=99999999

Sample Input 1

32

Sample Output 1

55

Sample Input 2

789

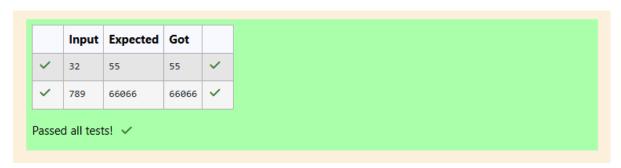
Sample Output 2

66066

Code:

```
#include<stdio.h>
 2
   int main()
 3 √ {
        int rev,n,nt =0,i=0;
 4
        scanf("%d",&n);
 5
 6 +
        do{
            nt = n;rev=0;
 7
            while(n!=0)
 8
 9,
                rev=rev*10+(n%10);
10
11
               n=n/10;
12
13
            n=nt+rev;
            i++;
14
15
16
        while(rev!=nt ||i==1);
        printf("%d",rev);
17
18
        return 0;
19
```

OUTPUT:



Problem 3:

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.

Sample Input 1:

3

Sample Output 1:

33

Code:

```
1 #include<stdio.h>
 2
   int main()
3 🔻 {
4
        int n=1,i=0,nt,co=0,e;
        scanf("%d",&e);
 5
        while(i<e)
 6
7 ,
 8
            nt=n;
            while(nt!=0)
9
10
11
                co=0;
                if(nt%10!=3&&nt%10!=4)
12
13
14
                    co=1;
15
                    break;
16
17
18
                nt=nt/10;
19
20
            if(co==0)
21
22
                i++;
23
            }
24
            n++;
25
        printf("%d",--n);
26
27
        return 0;
28 }
```

OUTPUT:

