Week 5 – 2:

--Nested Loops – while sand for , Jumps Loops

ROLL NO.:241501225

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Status	Finished
Started	Monday, 23 December 2024, 5:33 PM
Completed	Saturday, 23 November 2024, 4:21 PM
Duration	30 days 1 hour

Q1) 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:

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
#include<math.h>
int main(){
    int n,a,p=0,t,sum=0,x;
    scanf("%d",&n);
    t=n;
    a=n;
    while(t!=0){
        t/=10;
        p++;
    }
    while(n!=0){
        x=n%10;
        sum=sum+pow(x,p);
        n/=10;

    }
    if(sum==a)
     printf("true");
     else
     printf("false");
}
```

OUTPUT:

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

Passed all tests! ✓

Q2) 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:

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    long long int n,s,r,t,ts;
    scanf("%lld",&n);
    while(1){
        r=0;
        t=n;
        while(n)
        {
            r=r*10+(n%10);
            n=n/10;
        }
        s=t+r;
        ts=s;
        r=0;
        while(s){
            r=r*10+(s%10);
            s=s/10;

        }
        if(ts==r)
        break;
        n=ts;

    }
    printf("%lld",ts);

}
```

OUTPUT:

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

Passed all tests! ✓

Q3) 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:

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    long int i,j;
    int r,n,c=0,f;
    scanf("%d",&n);
    for(i=1;c<=n;i++){
        f=0;
        j=i;
        while(j>0){
            r=j%10;
            if(r==3||r==4)
            j=j/10;
            else{
                f=1;
                break;

            }
        }
        if(f==0){
            c++;
            if(c==n)
            break;

        }
    }
    printf("%ld",i);

}
```

OUTPUT:

	Input	Expected	Got	
✓	34	33344	33344	✓

Passed all tests! ✓