SAMDEVARAJA J 2024-CSE S2

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

Week-05-02-Practice Session-Coding

Question 1
Correct
Marked out of 3.00
Flag question

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.

Source code:

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

    if(original == sum)
    {
        printf("true");
    }
    else
    {
        printf("false");
    }
    return 0;
}
```

Result:

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

Passed all tests! ✓

Question **2**

Correct

Marked out of 5.00

Flag question

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

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    long long int n,s,rev,temp1,temp2;
    scanf("%lld",&n);
    while(1)
    {
        temp1=n,rev=0;
        while(n)
        {
            rev=rev*10+(n%10);
            n=n/10;
        }
        s=temp1+rev;
        temp2=s;
        rev=0;
        while(s)
        {
            rev= rev*10+(s%10);
            s=s/10;
        }
        if(temp2==rev)
        {
            break;
        }
        n=temp2;
    }
    printf("%lld",temp2);
    return 0;
}
```

Result:

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

Passed all tests! ✓

Question **3**

Correct

Marked out of 7.00

Flag question

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.

Source code:

```c
#include<stdio.h>
int nluck(int n);
int iamlucky(int num);
int main()
{
    int n;
    scanf("%d",&n);
    int luck=nluck(n);
    printf("%d",luck);
    return 0;
}
int nluck(int n)
{
    int c=0,num=3;
    while(c<n)
    {
        if(iamlucky(num))
        {
            c++;
        }
        num++;
    }
    return num-1;
}
int iamlucky(int num)
{
    while(num>0)
    {
        int digit = num%10;
        if(digit !=3 && digit != 4)
        {
            return 0;
        }
        num/=10;
    }
    return 1;
}
```

Result:

	Input	Expected	Got	
✓	34	33344	33344	✓

Passed all tests! ✓