Video No.: 50

Topic Name: Special Programs in C – Check if the number is Armstrong

Armstrong Number: An Armstrong number of order n is a number in which each digit when multiplied by itself n number of times and finally added together.

371 has 3 Digits

Each digit is multiplied by itself 3 times and finally added together and results in our original number

3*3*3 + 7*7*7 + 1*1*1 = 371

Step_01: First find out how many digits are there in the number.

```
count = 0;
while (q != 0) {
        q = q/10; // we divide q by 10 until it returns zero
        count ++; // here we count how many times the loop runs until q
become zero
}
// The output of the count variable will be the number of digits the number
has
```

Step_02: Multiply each digits n times and add them.

```
cnt = count; //we store the value of digit number in a variable
while (q != 0) {
        reminder = q%10; // taking the last digits as reminder
        while (cnt ! = 0) { // run the loop to multiply the reminder by itself n
(digit number) times
                mul = mul * reminder;
                cnt--;
                }
```

```
        results = results + mul; // storing the sum of results in results
variable

        cnt = count; // restore the original value of digit number to run the
loop again

        q /= 10;

        mul = 1; // again initializing the value of mul to 1 to run the loop

}
```

Step_03: Check whether the calculated result is equal to the actual number or not.

```
if (results == number)

        printf("Armstrong Number.");

else

        printf("Not Armstrong Number!");
```