Sum of Digits using Recursion

Given a number, we need to find sum of its digits using recursion.

Examples:

```
Input : 12345
Output : 15

Input : 45632
Output :20
```

The step-by-step process for a better understanding of how the algorithm works.

Let the number be 12345.

Step 1-> 12345 % 10 which is equal-too 5 + (send 12345/10 to next step)

Step 2-> 1234 % 10 which is equal-too 4 + (send 1234/10 to next step)

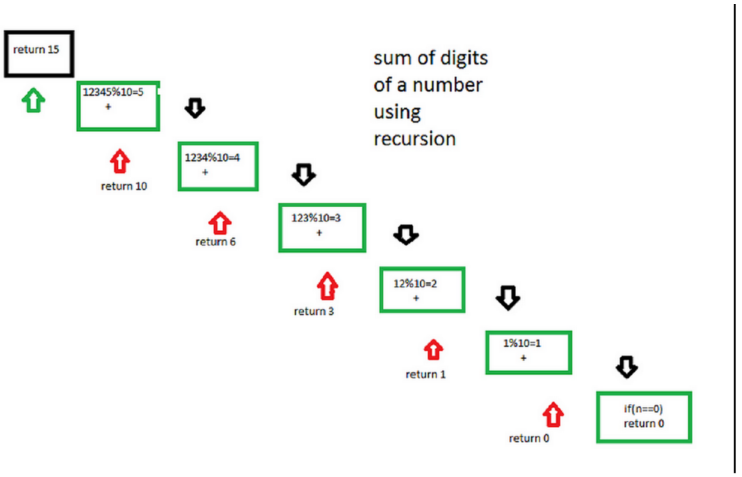
Step 3-> 123 % 10 which is equal-too 3 + (send 123/10 to next step)

Step 4-> 12 % 10 which is equal-too 2 + (send 12/10 to next step)

Step 5-> 1 % 10 which is equal-too 1 + (send 1/10 to next step)

Step 6-> 0 algorithm stops

following diagram will illustrate the process of recursion



```
// Recursive C++ program to find sum of digits
// of a number
#include <bits/stdc++.h>
using namespace std;

// Function to check sum of digit using recursion
int sum_of_digit(int n)
{
    if (n == 0)
    return 0;
    return (n % 10 + sum_of_digit(n / 10));
}

// Driven code int main()
{
    int num = 12345;
    int result = sum_of_digit(num);
    cout << "Sum of digits in "<< num
       <<" is "<<result << endl;
    return 0;
}
```

Output:

```
Sum of digits in 12345 is 15
```