Online Assignment on Function and Recursion (B1)

TIME: **30** Minutes Total Marks: **10** **CSE 102**

Solve the problem below. After you are done, rename the file containing your source code as your *StudentId.c* (For example, if your student ID is *2005001*, the name of your file should be *2005001.c*). Then submit that file to Moodle. Make sure you submit a file containing your source code.

***Failure to follow these instructions will result in penalties.**

Problem Description

Today we will call those numbers special whose **sum of the squares of the digits** eventually equals **1**.

For example, **203** is such a special number because

203 : $2^2 + 0^2 + 3^2 = 13$;

13 : $1^2 + 3^2 = 10$;

10 : $1^2 + 0^2 = 1$

Write a ***recursive*** function which will return **1** if a number is special and **0** otherwise. Your main function should only take input, call this function and based on the returned value will print "Yes" or "No". **No other processing should be there**.

Important: **While square summing the digits, stop when you get a 1 digit number.**

Some sample input, outputs are given below for your convenience:

Input (n)	Output
203	Yes
1	Yes
101	No
444	No

N.B.:

- ★ **You cannot write more than one function for this.**
- ★ You can use more than one parameter in your function.
- ★ You ***can not*** use any library function for this task (other than **I/O**).
- ★ You ***can not*** use any **global** or **static** variables while solving this problem.

★ You ***can not*** use any **array, loop** or **pointer** while solving this problem.

★ You can assume that the given input will always be valid.