

## Problem Set 4 Exercise #24: Square Sum

**Reference:** Lecture 12 notes

**Learning objective:** Recursion

**Estimated completion time:** 25 minutes

### Problem statement:

[CS1101 AY1999/00 Semester 2 Exam, Q4(b)]

Given a positive integer **num**, design a recursive function

```
int square_sum(int num)
```

that returns the sum of all the digits of **num** in square.

For example, if **num** is 12345, then return value is 55 because  $1*1 + 2*2 + 3*3 + 4*4 + 5*5 = 55$ .

Write a program **square\_sum.c** for the above task. You should **NOT** use any loop structures (*for*, *while* or *do-while* loop) in your program.

### Sample run #1:

```
Enter a positive integer: 1
Square sum of all digits is 1
```

### Sample run #2:

```
Enter a positive integer: 12345
Square sum of all digits is 55
```