Problem Set 2 Exercise #25: Odd Hunter

Reference: Lecture 4 notes

Learning objectives: Nested loops; Dealing with complex logic

Estimated completion time: 50 minutes

Problem statement:

Odd Hunter is a very special machine that has the ability to hunt all the odd digits in a number. Whenever it spots an odd digit, it adds it to a **sum**. The **sum** is initialised to zero at the beginning.

Moreover, the machine is very greedy. It will continue the process, using the **sum** as the new number, and continue to do so until the **sum** contains no odd digit.

For example, if the input number is 99, Odd Hunter adds up the two 9s to sum (which is initialised to 0): 0 + 9 + 9 = 18. It then uses the sum (18) as the new number and adds its odd digits to the sum: 18 + 1 = 19, and so on. The whole process is shown as follows:

Input: 99

0 + 9 + 9 = 18

18 + 1 = 19

19 + 1 + 9 = 29

29 + 9 = 38

38 + 3 = 41

41 + 1 = 42

The final result is 42, as it does not contain any odd digit.

Write a program **PS2_Ex25_OddHunter.java** to read in a positive integer and add up its odd digits repeatedly as described above.

Sample run #1:

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Enter a positive integer: 99
Answer = 42
```

Sample run #2:

```
Enter a positive integer: 2468
Answer = 0
```