

Digit Sum Challenge

In this challenge, your task is to write a method, with the name **sumDigits**, that has a single parameter named `number`, of type **int**, and it should return an `int`.

The method should only take a number that is a positive number.

If a negative number is passed, it should return -1, meaning an invalid value was passed.

The method should parse out each digit from the number, and sum the digits up.

So if 125 is the value passed to the method, the code should sum each digit, in this case, $1 + 2 + 5$, and return 8, as a value.

And another example, if the value is 1000, the code should sum each digit, $1 + 0 + 0 + 0$, and return 1 as a value.

If the number is a single digit number, simply return the number itself as the result.

Digit Sum Challenge Process, Step 1

At the start of the process:

number = 1234, and our variable, sum = 0.

If we use the remainder operator, getting the remainder of the number divided by 10, this will give us the most right digit in the number:

$$1234 \% 10 = 4$$

And 4 is the last digit, or most right digit.

Digit Sum Challenge Process, Step 1

Since we'll be working through the digits, from right to left, we'll add this to sum:

$\text{sum} = 4$

Next, we want to drop the most right digit, 4, and just have the other 3 digits to process.

We can do this by dividing by 10:

$1234 / 10 = 123$

Digit Sum Challenge Process, Step 2 and 3

So in the second iteration of the loop:

number = 123, and sum = 4

And again we use the remainder operator, getting the remainder of the number divided by 10, which gives us the right most digit:

$123 \% 10 = 3$

And we'll add 3 to sum, which was 4:

$\text{sum} = 7$

And now we divide 123 by 10:

$123 / 10 = 12$

Digit Sum Challenge Process, Step 2 and 3

So in the third iteration of the loop:

number = 12, and sum = 7

And we again take number mod 10:

$12 \% 10 = 2$

and 2 gets added to sum:

sum = 9

And we again divide now by 10:

$12 / 10 = 1$

Now our number is a single digit, (number < 10), and here we'll break out of the loop.

Digit Sum Challenge Process, Final Step

So, in this final step, after we've broken out of the loop:

number = 1, and sum = 9.

Now we can just add this last single digit to sum, and we'll have a final sum of 10.