project euler 0001

June 12, 2023

If we list a ll the natural numbers below 10 that are multiple of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.

Find the sum of all the multiples of 3 or 5 below 1000.

Final result : 233168

```
[1]:  # As the problem only involves natural numbers, we define the set N that
      # includes only those numbers.
      N = NonNegativeIntegers()

      # We then define a subset of N that includes only the multiples of
      # either 3 or 5 ...
      multiple_of_3_or_5 = ConditionSet(N, lambda x: (x % 3 == 0) or (x % 5 == 0))

      # ... and we calculate their sum
      result = 0
      for i in NN:
          if i >= 1000:
              break
          if i in multiple_of_3_or_5:
              result = result + i

      show(result)
```

233168