Forget the computer, how would you describe the task to someone who worked for you? Probably something like this:

Consider this number: 9876

1. Pick off "9" and translate it to the equivalent word: "nine", add "thousand" following, giving "Nine thousand" (call it thousands piece).

2. Pick off "8" and translate it to the equivalent word: "eight", add "hundred" following, giving "eight hundred" (call it hundreds piece).

3. Pick off "76". If it's less than 20 translate it directly. Otherwise pick off the "tens" position as "7" and translate it to "seventy", followed by the "ones" position as "6", translating it to "six" (tens/units piece)

4. Combine the three pieces: "Nine thousand eight hundred seventy six". No "while" or other looping constructs are necessary!