**Assumptions**

It is assumed that the maximum input is less than a quadrillion.

**Design choices**

I have created a function numbersToWords that returns the final output. Within this function there are a further four functions that can be called. These are:

1. singleDigitsFn: used to return output for single digit numbers.
2. doubleDigitsFn: used to return output for double digit numbers.
3. hundredsFn: used to return output for triple digit numbers.
4. magnitudeFn: used to return output for any numbers greater than or equal to 1000.

The above methods were written as functions as they can be called multiple times in the code. The functions are also used within each other.

For numbers greater than or equal to 1000 the logic works as follows:

1. The number is broken up into groups of 3 digits. If the number of digits is not divisible by 3 then the first group will contain the remainder and hence will be shorter. As an example, the number 10,100,100 will be split into three groups with 10 being the first group. Within each group one of the first three functions above is called within magnitudeFn.
2. The first group is assigned words first. Depending on the number of digits in this group either singleDigitsFn, doubleDigitsFn or hundredsFn is called within magnitudeFn.
3. This step determines whether this number is in the trillions, billions, millions or thousands. This is done by considering the number of digits in the total number. As an example, if the number of digits is between four and six then the number is in the thousands. This is combined with the output from step 2 to create the output for the first group.
4. Steps 2 and 3 are then repeated for each other group except for the last group. However, in step 3 when considering the number of digits in the number ignore the digits in the groups considered in previous steps. This step is performed in a while loop in which the digits from the previous group are removed and the magnitudeFn is called for the reduced digits. This while loop continues until there are three left.
5. For the last group there are always only three digits left so the appropriate function to call is the hundredsFn.
6. Combine the output for all previous steps to get the final output.