**Problem**

Make a subroutine that accepts numbers as input and converts those numbers into words.

Input example: 123.45

Output example: ONE HUNDRED AND TWENTY-THREE DOLLARS AND FORTY-FIVE CENTS

First Approach :

Chart

Description automatically generated

With this approach, we will try to handle every possible input from to , this approach can solve our problem but will have some disadvantages such as :

* Repetitive Code.
* Each type of input will have its logic.
* Hard to maintain (If we want to handle a bigger number we must make another logic for it).

Better Approach

Diagram

Description automatically generated

Another Approach is by processing numbers by 3 digits, the advantage of this approach is we will have the same logic for every combination of input and it will be maintainable if we want to handle bigger input.

Explanation of converting process logic :

Given number: 84508.49.

Separate dollar and cent from input :

Dollar: 84508.

Cent: 49.

Normalize dollar input so it becomes 084508.

Iteration 1: process 084

* Take the first 2 digits
* Convert 08 to EIGHTY
* Convert 4 to FOUR
* Concatenate EIGHTY with FOUR and THOUSAND
* Current result = EIGHTY-FOUR THOUSAND

Iteration 2: process 508

* Take the first 1 digits
* Convert 5 to FIVE
* Concatenate FIVE with HUNDRED
* Convert 08 to AND EIGHT
* Current result = EIGHTY-FOUR THOUSAND FIVE HUNDRED AND EIGHT

Concatenate with DOLLARS

Current result: EIGHTY-FOUR THOUSAND FIVE HUNDRED AND EIGHT DOLLARS

Process cent

* Convert 4 to FORTY
* Convert 9 to NINE
* Concatenate FORTY with – and NINE
* Current result FORTY-NINE
* Concatenate it with a CENT
* Current result = FORTY-NINE CENTS

Concatenate the dollar result with cent result so it become EIGHTY-FOUR THOUSAND FIVE HUNDRED AND EIGHT DOLLARS AND FORTY-NINE CENTS.