

CSE 331 Computer Organization HW #1 Report (Gökçe Nur Erer 171044079)

In this assignment the task was to read a sentence/string from a file and changing the digit characters in to their word forms.

The program works like this:

- 1) In data section I reserved 256 bytes for the string that the program will get from the input file. Also i declared my strings that I will print out when the program sees digits. File name is declared there too.
- 2) In text section:

The program starts with main. First it opens a file, then it reads the file and put the content in to the string. (which is called buffer in the program) Then the program calls the procedure called number_check.

In number_check:

First the program initializes t0 register as a loop counter which will start from 0. Then the program enters in to a loop.

Loop:

The program loads the character at the t0th position of the buffer. Checks if the character is a null character or not (to check the end of the string), if it is a null character it terminates the loop, if not it starts checking if it is a 0-9 digit.

- If it is a digit (There are 10 cases from 0 to 9 in the program all of them works the same way only the printing values change):
 - First, it checks if the next character is a digit, if it is, it returns to the loop and prints the digit.
 - Secondly, it checks if the previous character is a digit, if it is, it returns to the loop and prints the digit.
 - Thirdly, it checks if the digit is at the beginning of the sentence, if it is it prints the word version of the digit starting with an uppercase.
 - Fourthly, it checks if the previous character is a ".", if it is, it returns to the loop and prints the digit.
 - Fifthly, it checks if the digit is at the end of a sentence, if it is, it prints the word version of the digit starting with a lowercase.
 - Lastly if no condition from above satisfied, it prints the word version of the digit starting with a lowercase.
- If it is not a digit, it just prints the character and loops until the primary condition is satisfied. (processed character being null character)

When loop ends the procedure exits and returns to main block, just after the procedure call. Then the program closes the file and then it exits the program.

PS: The program doesn't check if the digit is at the very beginning of the buffer, so if there is a digit in the beginning of the sentence it doesn't provide uppercase lettering.

PS2: The program only detects sentences when there is '.' and a ' ' provided after. If there is a sentence like "Hello, I have 9 apples.5 of them are rotten." It won't detect 5 as a sentence start.