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**COURSE CODE:** CSC 235

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**PSEUDOCODE FOR THE SELF DESCRIBING NUMBERS PROGRAM**

1. Read in the file into the program.

2. If the file does not exist, return an Error message and terminate the program.

3. If the file exists, read in the first line of the file which contains the number of test cases and store the result in a variable.

4. Create a for loop to loop through each testcase in the file and for each iteration, store the value in a variable created in step 4

5. Use the springf() function to convert the integer value of the testcase to a string value and obtain the length and store the value in another variable.

7. Create an empty array to store each digit in each value read in from the file(testcase).

8. Initialize a for loop and for each iteration, store every digit of each testcase value in the array created in step 7. Each digit will be stored as an integer value.

9. Declare another empty array to store range of values from 0 up to the length of the testcase. Run a for loop and store numbers from 0 up to the testcase in the array created.

10. Convert the testcase which is in string format to an integer format using the atoi() function and store the result in a variable.

11. Create an empty array that will store the number of occurrences of each digit in the testcase.

12. Initialize a for loop that will run through each digit of the testcase, count the number of times each digit appears and then store the output of each result in the array created in step 11.

13. Convert the array of digits created in step 8 back in a single number and also convert the array of digit occurrences in step 12 into a single number and store each value in two separate variables.

14. Compare the values of the two variables in step 13, if both values are equal, it means the testcase is a self-describing number, if the values are different, it means the testcase is not a self-describing number.

15. Output the result of each testcase to the terminal.

16. End the program.