# Lab 08: "TeleWordGenerator"

Due: 07:59 AM on Friday, March 31
Points: **100** points

## Objective:
- To master file processing in C and solve a real-life challenge for businesses.

## Instructions:
- Be sure to document your code (add comments on top of each function).
- In the comments add your name, date, course, homework number, and statement of problem.

## Steps:

*(Telephone-Number Word Generator)* Standard telephone keypads contain the digits 0 through 9. The numbers 2 through 9 each have three letters associated with them, as is indicated by the following table:

| Digit | Letter |
|-------|--------|
| 2 | ABC |
| 3 | DEF |
| 4 | GHI |
| 5 | JKL |
| 6 | MNO |
| 7 | PQRS |
| 8 | TUV |
| 9 | WXYZ |

Many people find it difficult to memorize phone numbers, so they use the correspondence between digits and letters to develop seven-letter words that correspond to their phone numbers.

For example, a person whose telephone number is 686-2377 might use the correspondence indicated in the above table to develop the seven-letter word "NUMBERS." Businesses frequently attempt to get telephone numbers that are easy for their clients to remember. If a business can advertise a simple word for its customers to dial, then, no doubt, the business will receive a few more calls. Each seven-letter word corresponds to exactly one seven-digit telephone number. The restaurant wishing to increase its take home business could surely do so with the number 825-3688 (i.e., "TAKEOUT").

Each seven-digit phone number corresponds to many separate seven-letter words. Unfortunately, most of these represent unrecognizable juxtapositions of letters. It's possible, however, that the owner of a barber shop would be pleased to know that the shop's telephone number, 424-7288, corresponds to "HAIRCUT." A veterinarian with the phone number 738-2273 would be pleased to know that the number corresponds to the letters "PETCARE."

Write a C program that, given a seven-digit number, writes to a file every possible seven-letter word corresponding to that number. There are 2187 (3 to the seventh power) such words. Avoid phone numbers with the digits 0 and 1 that has no letters assigned on keypad (1 usually has the voicemail icon, while 0 carries "+" sign).

Once you finish, upload `teleWordGenerator.c` to BB. No need for output file.

*Note*: Each IDE (Xcode, VisualStudio, Eclipse, etc) handles creating new files using `fopen` differently. Make sure you check your IDE settings before compiling so you know where to find your output file.

*Note*: I've attached a possible output file for a given seven-digit number 367-5667, stands for "forloop" ☺