```
S0 = \{a, e, i, o, u, w, y\}
    S1 = \{b, f, p, v\}
    S2 = \{c, g, j, k, q, s, x, z\}
    S3 = \{d, t\}
    S4 = {I}
    S5 = \{m, n\}
    S6 = \{r\}
                                                 S0: ε
                                                                                                          Step 1: For this step, we simply keep the first letter, and remove
                                                                                                          the subsequent characters from
                              S0 - S6
                                                                       #:000#
                                                                                                          set S0. If the input string reaches
                                                                                                          the end in this step, just add 3 trailing 0s and enter the final
                                                                                                          state. Otherwise, enter step 2.
                                                 S1 : ε
                                                                                                 S0 : 8
                                                                               S0 : ε
                                   S1:1
                                                  S2 : ε
                                   S2 : 2
                                                                                         Step 2: For this step, we'll first transform
                                                                                         the first letter from set S1 to S6 to its
                                                                                          corresponding number. And then,
                                                  S3 : ε
                                                                                          1) If we encounter contigouos letters from
                                                                                         the same set with the previous letter, we
                                                                                         just repeatedly ignore it.
           Previous state
                                   S3:3
                                                                                          2) If we encounter a letter which is not in
             from part1
                                                                                          the same set with the previous letter, we
Part1
                                                                                          will enter the next step.
                                                                                          3) If we encounter contiguous letters from
                                                                                          S0, we repeatedly remove it and enter the
                                   S4:4
                                                                                          next step
                                                                                         4) If the input string reaches the end in
                                                                                         this step, just add 2 trailing 0s and enter
                                                                                         the final state.
                                   S5:5
                                                                                   #:00#
                                   S6: 6
                                                                               S0 : ε
                                                 S2 : ε
                                   S2:2
                                                                                         Step 3: This step is almost the same with step 2. The only difference is that we add only 1 trailing 0 instead of 2.
                                                 S3 : ε
           Previous state
                                   S3 : 3
             from part2
Part2
                                                 S4 : ε
                                   S4:4
                                                 S5 : ε
                                   S5:5
                                   S6: 6
                                                 S1 : ε
                                                                                                 S0 : ε
                                                                               S0 : ε
                                   S1 : 1
                                                 S2 : ε
                                   S2:2
                                                 S3 : ε
                                                                                          Step 4: This is the last step. We repeat the
                                                                                          same process with previous steps. In this
           Previous state
                                   S3 : 3
                                                                                          step, we will transform the input string to
             from part3
                                                                                          a string with the first letter and trailing
Part3
                                                                                          digits, so we can discard the rest of the
                                                 S4 : ε
                                                                                         letters (if there are any) and enter the final
```

state.

S4:4

S5 : 5

S6: 6

S5 : ε