This is a really long program with many *if* and *else* statements. Among all obstacles, in my opinion, the logic one is the roughest difficulty that I overcame. It may sound easy to write a program being inputted correct values by operator; however, the program must print the error messages, as the input values do not meet the conditions. *“return 1”* is significantly necessary at this time. Also, I spent plenty of time deciding which of the four entries (years, yes or not, city, and number of gigawatts) to put in the outermost *if* statement and inner *if* statements. From the aspect of saving memory, it’s unwise to judge efficient home or not in the outermost *if* statement.

Here are several test data:

A negative value for *years as customers* (-1, y, LA, 10)

Character other than y&n for *energy efficient home* (2, c, LA, 5)

Nothing for *residential city* (2, n, , 6)

A negative value for *number of gigawatts used* (6, y, LA, -15)

The bill for a new customer using less than 2 gigawatts (2, y, LA, 1)

The bill for a long-term customer who lives in an energy efficient home (15, y, LA, 20)

The bill for a customer (neither new nor long-term) living in an energy efficient home (5, y, LA, 15)