## **Credit Card Parity Checker**

The Luhn algorithm, also known as the "modulus 10" or "mod 10" algorithm, is a simple checksum formula used to validate a variety of identification numbers, such as credit card numbers. The formula verifies a number using its included check digit, which is usually appended to a partial account number to generate the full account number. This account number must pass the following test:

- 1. Counting from the rightmost digit (which is the check digit) and moving left, double the value of every even-positioned digit (note: The first position/digit is considered in position 0 a even position). For any digits that are doubled and become 10 or more, take the two numbers and add them together. For example, 1111 becomes 2121, while 8763 becomes 7733 (from  $2\times6=12 \rightarrow 1+2=3$  and  $2\times8=16 \rightarrow 1+6=7$ ).
- 2. Add all these digits together. For example, if 1111 becomes 2121, then 2+1+2+1 is 6; and 8763 becomes 7733, so 7+7+3+3 is 20.
- 3. If the total ends in 0 (put another way, if the total modulus 10 is congruent to 0), then the number is valid according to the Luhn formula; else it is not valid. So, 1111 is not valid (as shown above, it comes out to 6), while 8763 is valid (as shown above, it comes out to 20).

Create a program that takes its input from a data file called **credit.txt** which will consist of a list of credit card numbers. Determine if the number is correct according to the Luhn algorithm.

Sample Input 1111 8763 446667652 496667691

Sample Output: Number is not correct Number is correct Number is not correct Number is correct