

Programming Assignment 3

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1 Big Number Multiplication

In the previous assignment, you have learnt to store a big number in a linked list. You also can now multiply or divide a big number by 10^k . Next Assignment will be to multiply two big numbers which cannot be stored in a single variable.

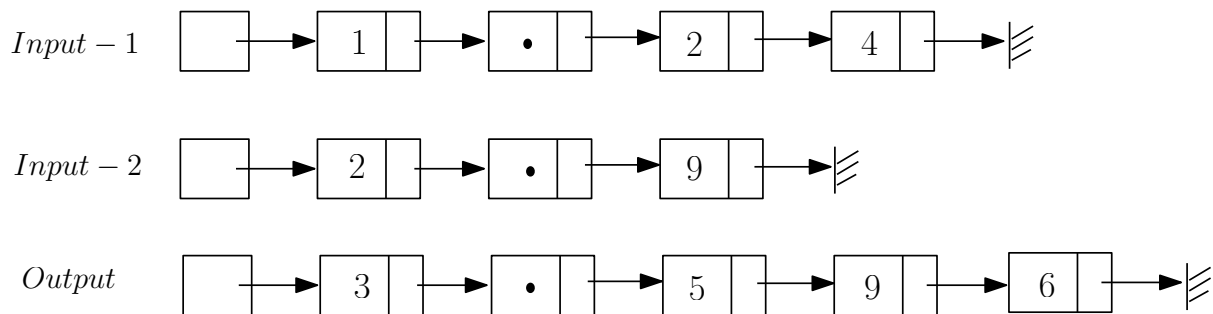
1.1 Input

Two big numbers written in a `input.txt` file separated by a blank space.

1.2 Output

Store the numbers in a linked list and multiply them. Write the product back to file `output.txt`.

For example, two numbers $1.24 \times 2.9 = 3.596$. The output should look like this



to start write a function to multiply a k digit number $n_1n_2 \dots n_k$ with a single digit number n . Use the school method of multiplying; multiply the right most digit, i.e, n_k with n , write the last digit of the product, remember the carry, then multiply with next one, add the carry and so on.... You may use a function `node* Multiply-Single(Node *, int)`. Then use this function to multiply two big numbers. You may need some more functions like

- `node* AddTwoLists(Node *, Node *)`
- `node* InsertatBegin(Node *, k)`
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