CS2233: Data Structures
Assignment 1
Aug 31, 2018

Problem Statement

- Input: Two positive integers a and b,
- Output: The sum of a and b.

Note: The two numbers can be arbitrarily large.

Input Format

- Input through standard input stream.
- Each line will contain two positive integers seperated by a space.
- Each line will end with a '\n' character.
- End of input is indicated by EOF.

Output Format

- For each line of the input read, your program should output the sum of the two integers read on that line followed by a '\n' character.

Implementation rules

- Use a doubly-linked list or a circular doubly-linked list to store the numbers. Each node stores one digit.
- Handle the input line by line. i.e., your program should not wait for all of the input lines. It has to output the sum immediately after reading each line.
- Your code should be modular: write a separate procedure to add two numbers that are represented as doubly-linked list.
- Your code has to compile on gcc version 7 and above. (TurboC and other non-standard variants are not allowed)

Design decisions

- Decide whether you want to use a doubly-linked list or a circular doubly-linked list with a sentinel node (see CLRS).
- Decide whether the head node of your list stores the LSB or MSB.

Other Remarks

- C++ devs: Create a class for the numbers. Then, overload the '+' operator and use it to add two of your number objects as if they are a primitive data type.
- Deadline: 9th September 2018.

Example

Input:

```
---------------------------------
98172397 891729837498097
8128347 8172398047098123748979
9088909347878 129885789
87213 18

---------------------------------
```

Output:

```
---------------------------------
891729935670494
8172398047098131877326
9089039233667
87231
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```