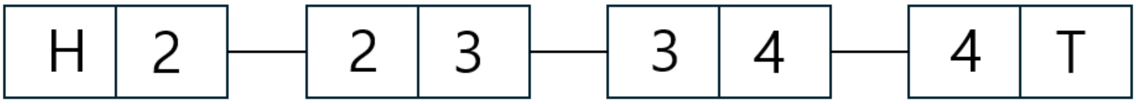
Homework 4 – Due Apr. 4th 23:59, KST

Instructions: Complete the implementation and turn it in before the due date. Any deviations from the instructed deliverable format will result in a deduction of grade. DO NOT COPY OTHER'S WORKS!

In this assignment, you will use a singly linked list to implement an engine for a puzzle called the NumberSnake. A NumberSnake is a sequence of pairs (i.e., *bodies*), where each pair consists of two items: the head number and the tail number. A valid sequence is one where the previous body's tail matches the next body's head, and the very first and last body's head and tail are 'H' and 'T', respectively. The following diagram depicts a valid NumberSnake configuration.



Your task is to implement the management of such NumberSnakes using a singly linked list. Each body is represented by the Body class, on which you should build the overall snake. The detailed per-method instructions are given in the distributed NumberSnake.java file.

In addition to the implementation, you are required to provide time complexity analyses on all required methods. Be sure to identify the variable correctly, and properly justify your answers.

Grading:

- Correctness (60%): All methods should behave as stated by the requirements. Please refer to the main() method for several potential test cases. You are encouraged to share other test cases with your classmates, but not the code.
- Complexity analysis (40%): Clearly written time complexity analysis on top of each method must be provided in the block comments.

Deliverable: A single NumberSnake.java source file. DO NOT provide a zip file. Just submit a single Java file with no package structure.