Data Structures	Assignment 2
CCO 2103-01, Spring 2024	Due at 5:00pm, Tuesday, April 23

Hand in your solutions electronically using LearnUs. As was announced in class, you are not allowed to use any data structure libraries, including the linked lists, stacks, queues, and trees provided by JDK. When in doubt, contact the course staff.

This assignment is *not* a completion points assignment.

Submit your source code(s), zipped as `yourStudentID.zip`. For example, if your student ID is `2023000000`, then you must zip all your source code(s) into `2023000000.zip` and submit this file. Each class should have its own `.java` file, of which the filename is the same as the class name. Do *not* include your student ID as part of the class names.

This assignment consists of one programming task.

(1) (100 points) Write a program that takes an expression in the infix notation and outputs its postfix form.

Your program must read its input from `input.txt` in the current working directory. The input consists of a single line, containing the expression. The expression uses only four kinds of (binary) operators: `*`, `/`, `+`, and `-`. Parentheses `(` and `)` can also be used. We follow the usual convention of the precedence and associativity of the operators. All operands are single (case-sensitive) alphabet letters, chosen from the 52 characters `A-Z` and `a-z`. You can assume that the expression does not contain any whitespaces, except for a possible end-of-line character at the end.

Your program must output the postfix expression to `output.txt` in the current working directory. The output file consists of a single line.

The entry point of your program must be `As2.main()`. Your program must run in 0.5 seconds on the TA's computer. You can assume that the input expression contains no more than $1,000,000$ characters.

Example

`input.txt`

```
A*(a+B+b)
```

`output.txt`

```
AaB+b+*
```