

# Practice Lessons

Oct. 16 2025

# 1). Infix to Postfix

- Refer to the algorithms in the slides:

[https://josephcclin.github.io/courses/data\\_structures/slides/ds\\_expression\\_evaluation.pdf](https://josephcclin.github.io/courses/data_structures/slides/ds_expression_evaluation.pdf)

- Page 19: the postfix algorithm
  - Page 11–14: the evaluation algorithm
- Get the input *infix expression*, and then convert it into its *postfix expression* and then output such a **postfix expression** as well as the **value** of the evaluation.

# Sample Input & Output

- Sample input:

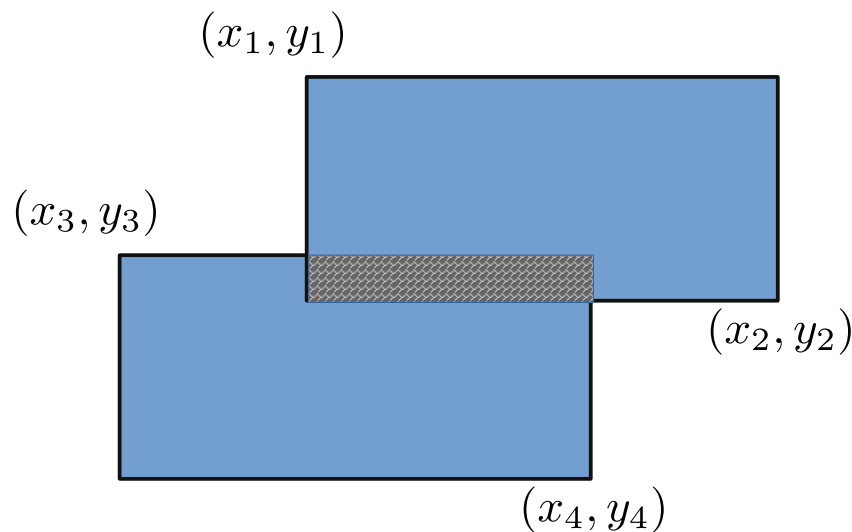
```
8 / 4 - 3 + 5 * 2 - 6 * 7
```

- Sample output:

```
8 4 / 3 - 5 2 * + 6 7 * -  
-33
```

## 2). Rectangles' Area

- **Input:** 8 integers:  $x_1, y_1, x_2, y_2, x_3, y_3, x_4, y_4$ .
- **Output:** the area of the overlapping parts of the two rectangles.



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# Sample Input & Output

- Sample input:

```
0 1 2 3 4 5 6 7
```

- Sample output:

```
0
```

- Sample input:

```
0 5 8 1 3 4 10 0
```

- Sample output:

```
15
```