# Expression Evaluation

## Postfix Evaluation

Take an infix expression 4*3+(3+2/9*3)^3

12 + (3+0)^3 = 12 + 27 = 39

Converting the expression to postfix form using infix to postfix convertor:

```
C:\Users\Vincent\Code\c-cpp\SE\Labs\DS\LabS>.\in2pf
Enter expression:4*3+(3+2/9*3)^3
Final expression is 43*329/3*+3^+
```

Postfix expression obtained is 43*329/3*+3^+

## Evaluating the postfix expression

```
C:\Users\Vincent\Code\c-cpp\SE\Labs\DS\LabS>.\pfEval.exe
Enter expression:43*329/3*+3^+
Result is 39
```

Result matches original calculation.

## Prefix Evaluation

Take an infix expression 2+3*4-4/3

2 + 12 – 1 = 13

Converting it to postfix using infix to prefix convertor

```
C:\Users\Vincent\Code\c-cpp\SE\Labs\DS\LabS>.\in2prf.exe
Enter expression:2+3*4-4/3
Final expression is -+2*34/43
```

## Evaluate it using prefix evaluator

```
C:\Users\Vincent\Code\c-cpp\SE\Labs\DS\LabS>prefEval.exe
Enter expression:-+2*34/43
Result is 13
```

The answer matches original calculated value.

Thus conversions of infix to prefix and infix to postfix, as well as the evaluation of prefix/postfix expressions, is carried out.