

Use Case Number: 5

Use case name: Evaluate Postfix Expression

Actors: System tasked with evaluating the postfix expression.

Initial State (Preconditions):

- Point 4 of the Compute Formula use case is executed to start the Evaluate Postfix Expression use case.

Final State (Postconditions):

- The postfix expression has been evaluated.

Main Scenario (Basic Flow):

1. System pushes numerical values from the postfix expression onto the stack until an operator is encountered.
2. Upon encountering an operator, the system removes the top element from the stack to serve as the second operand, then removes the next element to act as the first operand of the operation.
3. System transforms both operands from strings into their respective types (cell references, functions, or numbers).
4. System evaluates each operand to resolve references or computations as required.
5. System performs the operation using the evaluated operand values.
6. The outcome of the operation is added back onto the stack.
7. Repeat steps 1, 2 and 3 of the basic flow until there are not more components (operands or operators) in the formula.
8. System delivers the final value of the formula.

Extensions (Alternative Flows):

- 4a. An operand cannot be evaluated.
 1. System ends use case with an evaluation error.
 2. System reports the error through console.
- 5a. The operation is invalid.
 1. System ends use case with an evaluation error.
 2. System reports the error through console.

Commented [P11]: Juan Carlos Cruellas: And what if the operand is a cell reference? Instead of particularizing for each type of operand, this can be solved in general for any operand: what is required to get from an operand for performing the evaluation??