Requirements for the New Calculator

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We want a calculator that can be used by anyone.

People don't want to press buttons on the new calculator - except to get the answer. They just want to type out an expression and see the answer - or a good error message.

Some people in our company want to use reverse polish notation whilst some others want standard infix. Who knows what else they are going to want! Really they think that this might sit in as part of a web application and have some other ways to calculate but, at the bottom, its just a calculator.

Initially at least you will only have to deal with whole numbers and +,*,- and /. The answers should be as accurate as you can get them. If the input does not make sense then we expect a good message to help the user. Certainly the calculator should warn if it cannot work out the answer because its too big.

Both kinds of calculator should use the same user interface.

It would be great if the calculator had memories that we could store into and recall from so that we could do more complicated calculations. We also think that we will need an entirely text based interface because this application must be accessible.

Examples

Reverse Polish (postfix) Notation:- $5\ 6\ 7\ +\ *\ 2\ -$ evaluates as 63.0
Standard (infix) Notation:- $(\ 5\ *\ (\ 6\ +\ 7\ )\ )\ -\ 2$ evaluates as 63.0

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