Re: Reason for operator precedence

Source: http://sci.tech−archive.net/Archive/sci.math/2006−03/msg02409.html

- *From*: matt271829−news@xxxxxxxxxxx
- *Date*: 14 Mar 2006 06:39:49 −0800

briggs@xxxxxxxxxxxxxxxxx wrote:

> In article <1142342196.542632.294210@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
> matt271829−news@xxxxxxxxxxx writes:
>
> > Tony wrote:
> >
> > > Hi all.
> > >
> > > Hope this isn't a silly question.
> > >
> > > I was wondering what the reason is for having multiple
> > > levels of operator
> > > precedence?
> > >
> > > Phrased another way, why is it that we don't just evaluate
> > > everything from
> > > left to right?
> > >
> > > Having multiple levels of precedence obviously adds
> > > complexity, so I assume
> > > there must be some payback. However, I don't see what it is.
> >
> > As far as addition/subtraction vs multiplication/division is concerned,
> > one reason is to ensure that the distributive property of
> > multiplication works sensibly. For example, we want 3*(4 + 6) = 3*4 +
> > 3*6 = 3*(6 + 4) = 3*6 + 3*4.
>
> Remember that what we're talking about here is merely a notational
> convention. It has nothing whatsoever to do with the distributive
> property of multiplication over addition.

And, to elaborate a bit more, I venture to disagree and suggest that

the convention *does* have to do with this property. I suggest that the distributive property of * over + is one of the reasons − possibly the main reason − why it is "natural" to view multiplication as "tighter" than addition, and to want to interpret, say, 3*4 + 3*6 as (3*4) + (3*6) rather than as ((3 * 4) + 3) * 6 or whatever.

.