

## Re: EE Student, Edit, Proposal Masters, Help (concepts of functional programming, symbolic programming and MATLAB)

*Source:* <http://sci.tech-archive.net/Archive/sci.math.symbolic/2005-03/0117.html>

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John Creighton wrote:

- > *Lisp has since been*
- > *expanded to include many programming paradigms and is now known as*
- > *Common Lisp (CLisp). Although, Common Lisp is no longer a pure*
- > *functional language some functional programming language lisp dialects*
- > *have been created (e.g. Scheme).*

Scheme support the paradigm of functional programming very well,  
but is also impure.

- > *In a pure functional (e.g. Haskell) languages such as Haskell [39]*
- > *assignment is not allowed in order to eliminate side effects.*
- > *Alternatively monads are used to solve problems such as exception*
- > *handling which is difficult to do without assignment.*

Are you saying that it is difficult for the user of Haskell or the  
implementor of Haskell to implement exceptions? Or perhaps you  
are talking about exceptional situations rather than "traditional"  
exceptions.

- > *This is not*
- > *necessary in Maple because Maple is not a pure functional language. In*
- > *Maple assignment can be done as in a procedural style:*
- > *x:=2*
- > *x:=x+1*

Perhaps you mean "imperative style" rather than "procedural style"?  
(Since you don't define any procedures nor call them in the example)

- > *Variables can represent many kinds of data structures.*
- > *A data structure that can be evaluated is known as an expression.*

Variables are bound to values. How do you define data structure?

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- > *The symbolic package for MATLAB performs symbolic operations by*
- > *storing symbolic expressions as objects. MATLAB manipulates*
- > *expressions by: passing the expression to the Maple kernel and then*
- > *storing the resulting string in a field of a symbolic object [7].*

What is a symbolic object?

- > *However, there is a size limitation on the size of a symbolic*
- > *variables that can be used within the symbolic package.*

What is the size of a variable?

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