

**Meeting:** 1001, Evanston, Illinois, SS 8A, Special Session on Computability Theory and Applications

1001-03-138      **Douglas Cenzer\*** (cenzer@uf1.edu), Department of Mathematics, P.O. Box 118105, University of Florida, Gainesville, FL 32611, and **Jeffrey Remmel**. *Computability Theory and Logic Programming*. Preliminary report.

Extended Set Based (ESB) logic programs allow reasoning about infinite (computably enumerable) sets. For example, there are clauses which derive a particular atom once *every* atom in a given c.e. set has been derived. The inductive definition of the least stable model can then be a transfinite process. We examine the computability of the least stable model of an ESB Horn program and the existence of a computable stable model. Index sets are assigned to the programs and complexity results are obtained in the hierarchy of differences of  $\Sigma_3^0$  sets. (Received August 20, 2004)