Lookups for Nonlinear Graphs in Stella and in Vensim

Page 324 of Modeling the Environment shows the use of Stella's nonlinear graph to calculate the interest rate as a function of the bank balance.

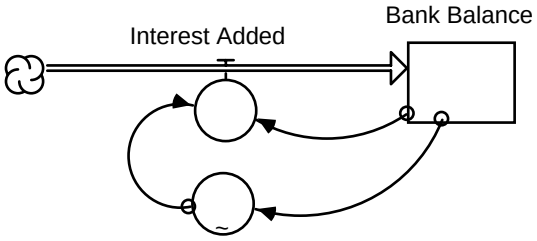
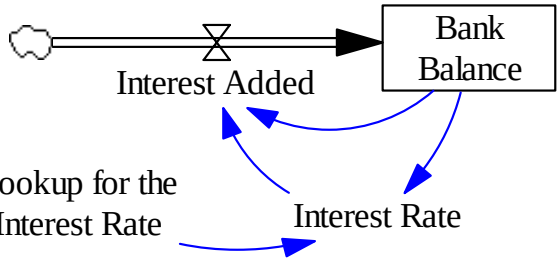


Figure C.9 from the book.
The ~ in Stella alerts us that the interest rate is a nonlinear function of the bank balance.



Vensim version of the same model.
The word "lookup" reminds us that the interest rate is a nonlinear function of the bank balance

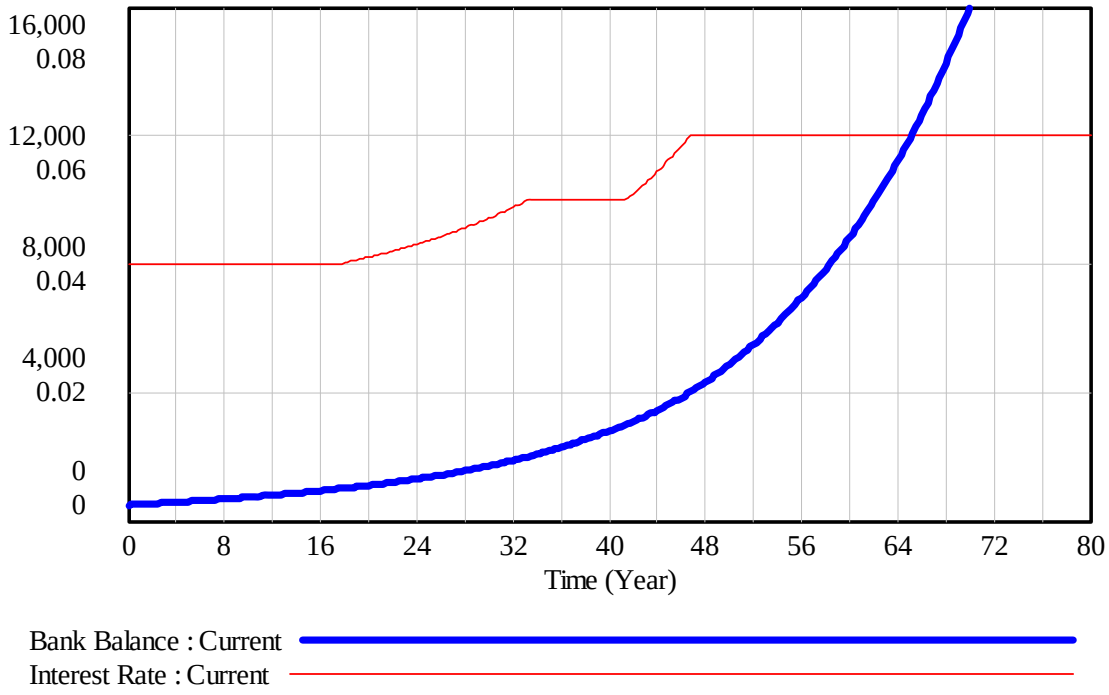
To create the "Lookup for the Interest Rate," scroll through the list of choices for the "type" of variable. (The starting choice for type is "constant." You will find "lookup" near the bottom of the list.) After selecting "lookup", ask to view the lookup "as graph". At this point, you will receive a dialog box to help you enter the separate points for the lookup. If you set the min/max choices on the horizontal and vertical axes, you should be able to visually check if the nonlinear graph is reasonable.

To get the Interest Rate,
Interest Rate =

Lookup for the Interest Rate(Bank Balance)

If you simulate this model over an 80 year period with DT set to 0.25 years, the results will match the Stella results shown on page 325 of the book, as shown below:

Graph to Match Figure C.11



Graph to Match Figure C.12