What is a recursive relationship. Give an example?

A recursive relationship is when an entity is related to occurrences of the same entity type. For instance, if we were managing a table of Amway representatives, we would have each entry in the representatives table related to another representative in the same table with a "reports to" relationship. With this recursive relationship, we are able to define the entire pyramid-scheme chain in just one table (Borysowich, 2007).

Here's an example using the military chain of command

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<table border="1">
<tr><td><b>id</b></td><td><b>name</b></td><td><b>reports_to_id</b></td></tr>
<tr><td>1</td><td>American People</td><td>1</td></tr>
<tr><td>100</td><td>President</td><td>1</td></tr>
<tr><td>101</td><td>Secretary of Defense</td><td>100</td></tr>
<tr><td>102</td><td>Secretary of the Army</td><td>101</td></tr>
<tr><td>103</td><td>Secretary of the Navy</td><td>101</td></tr>
<tr><td>104</td><td>Secretary of the Airforce</td><td>101</td></tr>
</table>
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Here the Secretaries of the Military Departments are defined as reporting to the Secretary of Defense, who reports to the President, who reports to the American People, who report to themselves. On an E-R diagram, this relationship would be illustrated with a line going from the table and looping back to it with a 1:M relationship.

References:

Borysowich, Craig, (Jan 2007). *Recursion in E-R Relationships.* Toolbox for It Knowledge Sharing Communities. Retrieved from it.toolbox.com Jul 26, 2009 at: http://it.toolbox.com/blogs/enterprise-solutions/recursion-in-er-relationships-14180