Often times in a typical numerical analysis course, a computer program is used to implement the numerical schemes. GNU Octave is a freely redistributable software that provides a way to numerically solve problems through command-oriented programming, quite similar to Matlab. This talk will present ways to implement programming with GNU Octave for a typical numerical analysis course, discuss its similarities and differences to Matlab, analyze challenges that students may encounter, and offer ways it may be used in other courses such as calculus and linear algebra. (Received September 20, 2011)