**Chapter 15**

**Knowledge Goals**

* To learn how to compare the running times of algorithms.
* To understand orders of magnitude and the Big-Oh notation.
* To learn how to compute the running time of a non-recursive method.
* To learn how to compute the running time of a recursive method.
* To understand that how an algorithm is coded directly impacts its running time.

**Skill Goals**

*To be able to:*

* To compare the running times of various functions based on their Big-Oh estimates.
* To calculate a Big-Oh estimate for an algorithm by counting statement executions.
* To develop a recursive relation that describes the performance of a recursive algorithm.
* To calculate a Big-Oh estimate for a recursive algorithm using the Handwaving Method.
* To calculate a Big-Oh estimate for a recursive algorithm using the Iterative Method.
* To calculate a Big-Oh estimate for a recursive algorithm using Proof by Induction.
* To compare the running times of two different algorithms that perform the same task.