**Assignment 4**

Design and implement a program for performing sorting with the following requirements:

* The program can be used to perform sorting on data of *any* kind with *any* pre-defined ordering using *any* sorting algorithm based on *any* sorting criterion a user may desire.
* It is not that the program is going to enable all sorting possibilities; rather, the program has a structure that allows extensions that satisfy different sorting needs. Thus, demonstrate two different sorting instances when virtually the same program is used with appropriate code extensions. (For example, in one instance, you would sort a random set of integers in descending order using selection sort; in another instance, you would sort some objects of Student type (with predefined ordering based on alphabetical order of the names) based on ascending order of GPA using insertion sort.)
* Elapsed time of sorting is also calculated and available if retrieved.
* A class diagram (electronically drawn) for all types you created, which should include all data fields and methods for each type, and all relationships among the types.

*This is an individual assignment. Although you are encouraged to discuss with your partner, it is important that you complete the assignment independently.*