Overview. This is the first part of the course project. The goal of the project is to further explore sorting algorithms and "benchmarking" (i.e., performance testing). The goal of this part of the project is to form a group and identify three sorting algorithms you want to initially explore. During the rest of the semester there will be additional deliverables for your project. These will consist of: developing a basic test harness; implementing the three test algorithms; developing your own sorting algorithm variant (a fourth algorithm); doing performance tests; and developing and giving a project presentation and (short) report of your findings.

Instructions: Write a project proposal that covers each of the following. Turn in your proposal in class on the due date.

1. Form a **group** of 3–4 students. Your proposal must include the names of each group member.

2. Select **three different** sorting algorithms to explore (a good place to begin is https://en.wikipedia.org/wiki/Sorting_algorithm). The three sorting algorithms must be different than those discussed in class. State which three algorithms you are choosing to implement.

3. Give a **brief description** of the three algorithms you have chosen. Your descriptions should be at the same level as given in class and in the lecture notes when describing the "**Basic Idea**" of the algorithms we went over (e.g., maintain a sorted and unsorted region, select the largest element in the unsorted region, and insert the element into the sorted region). You don't need to provide psuedocode for the algorithms or go into detail, but can if you like. The idea is to demonstrate you have a basic understanding of how the algorithms work.

Evaluation of Project. Your team will be evaluated on each intermediate project deliverable as well as the final presentation and report. Each team member is expected to do their fair share of the work, which will be graded based on peer evaluations and a description of contributions. Your project will be graded on multiple factors including degree of difficulty, quality of the implementations, quality of the benchmarking, and the overall quality of the presentation and description of results.